

North Dakota State Water Commission

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**Meeting To Be Held At
State Office Building
900 East Boulevard Avenue
Lower Level Conference Room
Bismarck, North Dakota**

**September 15, 2014
1:30 P.M., CDT**

AGENDA

- A. Roll Call
- B. Consideration of Agenda --- *Information pertaining to the agenda items is available on the State Water Commission's website at <http://www.swc.nd.gov>*
- C. **Consideration of Draft Minutes of May 29, 2014 SWC Meeting** **
- D. State Water Commission Financial Reports:
 - 1) Agency Program Budget Expenditures
 - 2) 2013-2015 Biennium Resources Trust Fund and Water Development Trust Fund Revenues
 - 3) **Bond Retirement** **
- E. Consideration of Following Requests for Cost Share:
 - 1) **Cass County Drain No. 55 Channel Improvements** **
 - 2) **Elm River Dam No. 3 Safety Improvements** **
 - 3) **Haas Coulee Legal Drain - Bottineau County** **
 - 4) **McKenzie County LiDAR Collection Project** **
 - 5) **Oak Creek Drain Lateral E Reconstruction - Wells County** **
 - 6) **Richland County Drain No. 15 Reconstruction Project** **
 - 7) **Memorial Park Stream Bank Restoration - LaMoure County** **
 - 8) **City of Lisbon Sheyenne River Bank Stabilization** **
 - 9) **Mergenthal Drain No. 5 Channel Improvements** **
 - 10) **Federal/State Cooperative LiDAR Collection Effort** **
- F. Sheyenne River Flood Control Project:
 - 1) Loan Negotiation Update
 - 2) **City of Lisbon Floodwall Protection Project** **
- G. State Water Supply Projects:
 - 1) **Missouri West Water System, South Mandan Cost Overrun** **
 - 2) **Missouri West Water System, South Mandan Rural Expansion Cost Overrun** **
 - 3) **Stutsman Rural Water District, Phase IIB Cost Overrun** **
 - 4) **Stutsman Rural Water District, Phase III Cost Overrun** **
 - 5) **All Seasons Water Users** **
 - 6) **Barnes Rural Water District, Water Treatment Plant Improvements Cost Overrun** **

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- H. Fargo Moorhead Area Diversion Project:
 - 1) Project Report
 - 2) ***Fargo Flood Control Project*** **

- I. Southwest Pipeline Project:
 - 1) Project Update
 - 2) ***Southwest Pipeline Project Cost Overrun*** **
 - 3) ***Contract 3-2C, Ozone Equipment Procurement for Dickinson Water Treatment Plant*** **
 - 4) ***Missouri West Water System, Additional Point of Connection*** **
 - 5) ***Request for REM Reimbursement*** **

- J. Northwest Area Water Supply Project:
 - 1) Project Update
 - 2) ***2015 Interim Water Rates*** **

- K. Western Area Water Supply Project:
 - 1) Project Update
 - 2) ***Western Area Water Supply Funding*** **
 - 3) ***Western Area Water Supply, Crosby Fill Station*** **

- L. Proposed Amendments to North Dakota Administrative Code Articles

- M. Mouse River Enhanced Flood Protection Project Report:
 - 1) Project Update
 - 2) ***City of Minot Downtown Infrastructure Improvements*** **

- N. Devils Lake Hydrologic and Projects Updates

- O. Missouri River:
 - 1) Project Update
 - 2) North Dakota Missouri River Stakeholders Efforts

- P. State Water Commissioner-Hosted Meetings

- Q. Garrison Diversion Conservancy District Report

- R. North Dakota State Water Commission Cost Share Policy, Procedure, and General Requirements:
 - 1) ***Cost Share Policy Draft Modifications*** **
 - 2) ***Draft Water Project Prioritization Guidance Concept*** **

- S. Other Business

- T. Adjournment

** ***BOLD, ITALICIZED ITEMS REQUIRE SWC ACTION***

MINUTES

North Dakota State Water Commission Bismarck, North Dakota

September 15, 2014

The North Dakota State Water Commission held a meeting at the State Office Building, Bismarck, North Dakota, on September 15, 2014. Governor Jack Dalrymple, Chairman, called the meeting to order at 1:30 p.m., and requested Todd Sando, State Engineer, and Chief Engineer-Secretary to the State Water Commission, to call the roll. Governor Dalrymple announced a quorum was present.

STATE WATER COMMISSION MEMBERS PRESENT:

Governor Jack Dalrymple, Chairman
Tom Bodine, representing Commissioner Doug Goehring,
North Dakota Department of Agriculture, Bismarck
Maurice Foley, Member from Minot
Larry Hanson, Member from Williston
George Nodland, Member from Dickinson
Harley Swenson, Member from Bismarck
Robert Thompson, Member from Page
Douglas Vosper, Member from Neche

STATE WATER COMMISSION MEMBER ABSENT:

Arne Berg, Member from Devils Lake

OTHERS PRESENT:

Todd Sando, State Engineer, and Chief Engineer-Secretary,
North Dakota State Water Commission, Bismarck
State Water Commission Staff
Approximately 50 people interested in agenda items

The attendance register is on file with the official minutes.

The meeting was recorded to assist in compilation of the minutes.

CONSIDERATION OF AGENDA

The agenda for the September 15, 2014 State Water Commission meeting was presented; there were no modifications.

It was moved by Commissioner Foley, seconded by Commissioner Thompson, and unanimously carried, that the agenda be accepted as presented.

**CONSIDERATION OF DRAFT MINUTES
OF MAY 29, 2014 STATE WATER
COMMISSION MEETING - APPROVED**

The draft final minutes of the May 29, 2014 State Water Commission meeting were approved by the following motion:

It was moved by Commissioner Nodland, seconded by Commissioner Swenson, and unanimously carried, that the draft final minutes of the May 29, 2014 State Water Commission meeting be approved as prepared.

**STATE WATER COMMISSION
BUDGET EXPENDITURES,
2013-2015 BIENNIUM**

In the 2013-2015 biennium, the State Water Commission has two line items - administrative and support services, and water and atmospheric resources expenditures. The allocated program expenditures for the period ending July 31, 2014, reflecting 54 percent of the 2013-2015 biennium, were presented and discussed by David Laschkewitsch, State Water Commission's Director of Administrative Services. The expenditures, in total, are within the authorized budget amounts. **SEE APPENDIX "A"**

The Contract Fund spreadsheet, attached hereto as **APPENDIX "B"**, provides information on the committed and uncommitted funds from the Resources Trust Fund and the Water Development Trust Fund. The total amount allocated for projects is \$461,871,686 leaving an unobligated balance of \$244,022,406 available to commit to projects in the 2013-2015 biennium.

**RESOURCES TRUST FUND
AND WATER DEVELOPMENT
TRUST FUND REVENUES,
2013-2015 BIENNIUM**

Oil extraction tax deposits into the Resources Trust Fund total \$335,561,196 through August, 2014 and are currently \$48,611,846, or 16.9 percent above budgeted revenues.

Deposits into the Water Development Resources Trust Fund (tobacco settlement) total \$10,240,371 through August, 2014, and are currently \$1,240,371, or 13.8 percent above budgeted revenues.

**DEFEASANCE OF WATER
DEVELOPMENT REVENUE
REFUNDING BONDS,
SOUTHWEST PIPELINE
PROJECT, 2007 SERIES B
(Resolution No. 14-9-528)
(SWC Project No. 1736-99)**

The State Water Commission has outstanding Water Development Revenue Refunding Bonds, Southwest Pipeline Project, 2007 Series B, dated June 17, 2007, in the original (principal) amount of \$13,670,000, of which \$11,085,000 is maturing on July 1 in the years 2014 through 2032

(deceased bonds). The bonds are subject to prepayment and redemption on July 1, 2017 at a price equal to 100 percent of par plus interest accrued to the redemption.

It was the recommendation of the Commission's financial manager to consider defeasance of the outstanding \$13,670,000 Series B bonds in November, 2014, at an estimated cost of \$12,800,000. As a result, approximately \$200,000 would be saved, and defeasance would eliminate \$4,200,000 in interest payments through July, 2032.

The State Water Commission's remaining outstanding bond issues includes the Water Development and Management bonds, 2005 Series A (\$21,630,000), and 2005 Series B (\$62,205,000). It was the recommendation of the Commission's financial manager to consider a defeasance of these outstanding bonds after the April, 2015 tobacco settlement deposit is received, at an estimated cost of \$55,200,000. Defeasance of these bonds will result in the elimination of \$13,600,000 in interest payments through February, 2026.

Resolution No. 14-9-528, Authorizing Defeasance of the Water Development Revenue Refunding Bonds, Southwest Pipeline Project, 2007 Series B, was presented for the State Water Commission's consideration. It was the recommendation of Secretary Sando that the State Water Commission approve the defeasance of the outstanding \$13,670,000 Water Development Revenue Refunding Bonds, Southwest Pipeline Project, 2007 Series B, in November, 2014.

It was also the recommendation of Secretary Sando that the State Water Commission approve defeasance of the remaining outstanding bond issues, the Water Development and Management bonds, 2005 Series A (\$21,630,000), and 2005 Series B (\$62,205,000), after the April, 2015 tobacco settlement deposit is received.

It was moved by Commissioner Swenson and seconded by Commissioner Hanson that the State Water Commission approve the defeasance of the Water Development Revenue Refunding Bonds, Southwest Pipeline Project, 2007 Series B, (\$13,670,000) in November, 2015; and approve defeasance of the Water Development

and Management bonds, 2005 Series A (\$21,630,000), and 2005 Series B (\$62,205,000) after the April, 2015 tobacco settlement deposit is received. SEE APPENDIX "C" - Resolution No. 14-9-528

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

**CASS COUNTY DRAIN NO. 55
CHANNEL IMPROVEMENTS PROJECT -
APPROVAL OF STATE COST
PARTICIPATION (\$99,923)
(SWC Project No. 1613)**

A request from the North Cass Water Resource District was presented for the State Water Commission's consideration for state cost participation in the Cass County Drain No. 55 channel improvements project. The project involves

reconstruction of approximately 1 mile of channel located 4 miles east of Hunter, Bell Township, Cass County.

The channel has been susceptible to erosion due to the steep channel slope. The project will stabilize eroded areas, move the channel centerline away from the adjacent road and existing erosion, and flatten the channel side slopes to improve capacity and prevent sloughing. Erosion protection will be added to the upstream crossing as well as a stilling basin downstream of the culverts. At the downstream end, riprap will be added at the existing bridge.

The proposed channel bottom width is 10 feet, the side slopes on the field side are 4:1, and the side slopes on the road side of the drain will vary with a maximum side slope of 5:1.

The project engineer's estimated cost is \$320,000, of which \$222,052 is determined eligible for state cost participation as a rural flood control project at 45 percent of the eligible costs (\$99,923).

It was the recommendation of Secretary Sando that the State Water Commission approve state cost participation as a rural flood control project at 45 percent of the eligible costs, not to exceed \$99,923 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the North Cass Water Resource District to support the Cass County Drain No. 55 channel improvements project.

It was moved by Commissioner Vosper and seconded by Commissioner Hanson that the State Water Commission approve a state cost participation grant as a rural flood control project at 45 percent of the eligible costs, not to exceed \$99,923 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the North Cass Water Resource District to support the Cass County Drain No. 55 channel improvements project. This action is contingent upon the availability of funds.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

***ELM RIVER DAM NO. 3 DAM
SAFETY IMPROVEMENTS PROJECT -
APPROVAL OF STATE COST
PARTICIPATION (\$65,208)
(SWC Project No. PSWRDELM)***

A request from the Elm River Joint Water Resource District was presented for the State Water Commission's consideration for state cost participation in the Elm River Dam No. 3 dam safety improvements project. The dam was

built in 1962 and is owned and operated by the District, serving as flood protection for properties along the tributary of the Elm River.

The dam face has experienced erosion on the upstream side of its embankment affecting the stability of the embankment. The proposed project will improve the original design by installing a riprap armament beginning at the existing bench elevation and continuing up the face of the dam for approximately four vertical feet. Placing riprap in this area will provide the necessary protection during normal ponding within the pool.

The project engineer's estimated cost is \$135,000, of which \$100,320 is determined eligible for state cost participation as a dam safety project at 65 percent of the eligible costs (\$65,208).

It was the recommendation of Secretary Sando that the State Water Commission approve state cost participation as a dam safety project at 65 percent of the eligible costs, not to exceed an allocation of \$65,208 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Elm River Joint Water Resource District to support the Elm River Dam No. 3 dam safety improvements project.

It was moved by Commissioner Swenson and seconded by Commissioner Nodland that the State Water Commission approve a state cost participation grant as a dam safety project at 65 percent of the eligible costs, not to exceed an allocation of \$65,208 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Elm River Joint Water Resource District to support the Elm River Dam No. 3 dam safety improvements project. This action is contingent upon the availability of funds.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

**HAAS COULEE DRAIN PROJECT
(BOTTINEAU COUNTY) - APPROVAL OF
STATE COST PARTICIPATION (\$500,000)
(SWC Project No. 2042)**

A request from the Bottineau County Water Resource District was presented for the State Water Commission's consideration for state cost participation in the Haas Coulee drain project. Since

2009, Haas Coulee has received unprecedented amounts of precipitation resulting in overland flooding due to backup behind culverts and washed out culverts. Haas Coulee is located in northeastern Bottineau county, has a drainage area of 94,140 acres, and is 39 miles long consisting of 3 reaches. There is a high concentration of U.S. Fish and Wildlife perpetual easements in the watersheds which will limit the potential for future drainage.

The proposed project will involve the replacement and installation of culverts as well as an oil spill control gate. The channel's bottom width will vary between 15 and 30 feet with 3:1 side slopes. The channel is designed to handle between 263 and 410 cubic feet per second depending on the contributing drainage area.

The project engineer's estimated cost is \$2,319,684, of which \$1,256,040 is determined eligible for state cost participation as a rural flood control project at 45 percent of the eligible costs (\$565,218). The State Water Commission's current cost share policy for rural flood control projects has a limitation of \$500,000 per biennium.

It was the recommendation of Secretary Sando that the State Water Commission approve state cost participation as a rural flood control project at 45 percent of the eligible costs, not to exceed an allocation of \$500,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Bottineau County Water Resource District to support the Haas Coulee drain project.

It was moved by Commissioner Foley and seconded by Commissioner Thompson that the State Water Commission approve a state cost participation grant as a rural flood control project at 45 percent of the eligible costs, not to exceed an allocation of \$500,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Bottineau County Water Resource District to support the Haas Coulee drain project. This action is contingent upon the availability of funds, and satisfaction of the required permits.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

MCKENZIE COUNTY LIDAR COLLECTION PROJECT - APPROVAL OF STATE COST PARTICIPATION (\$262,308) (SWC Project No. 2045)

A request from the McKenzie County Water Resource District was presented for the State Water Commission's consideration for state cost participation for their LiDAR collection project. Because

of population growth, it is necessary to acquire the most current LiDAR and imagery to accommodate the needs of the county.

The project includes both 6" resolution ortho imagery and LiDAR data with .7 meter spacing for 2,929 square miles. DEM files with 1" contours and contour files with 1" contour intervals without annotation will also be acquired. The data will be beneficial for elevations to be used for planning emergency flood operations, floodplain management, emergency response, flood control analysis and hydraulic analysis.

The data will meet FEMA and USGS specifications and includes an agreement with the USGS for conducting the required third party quality assessment/quality control for FEMA flood insurance rate maps. The inclusion of the data will be in the USGS national elevation database. The collection is targeted for the fall of 2014, with an anticipated final data delivery date of April 15, 2015.

The project engineer's estimated cost is \$664,846, of which \$524,615 is determined eligible for state cost participation at 50 percent of the eligible costs (\$262,308).

It was the recommendation of Secretary Sando that the State Water Commission approve state cost participation at 50 percent of the eligible costs, not to exceed an allocation of \$262,308 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the McKenzie County Water Resource District to support the LiDAR collection project.

It was moved by Commissioner Hanson and seconded by Commissioner Thompson that the State Water Commission approve a state cost participation grant at 50 percent of the eligible costs, not to exceed an allocation of \$262,308 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the McKenzie County Water Resource District to support the LiDAR collection project. This action is contingent upon the availability of funds.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

**OAK CREEK DRAIN LATERAL E
RECONSTRUCTION PROJECT
(WELLS COUNTY) - APPROVAL OF
STATE COST PARTICIPATION (\$73,057)
(SWC Project No. 1314)**

A request from the Wells County Water Resource District was presented for the State Water Commission's consideration for state cost participation in the Oak Creek Drain Lateral E reconstruction project. The project is located in Section

17, Township 148 North, Range 68 West in Wells County, and consists of the reconstruction of a portion of the existing Lateral E of the Oak Creek legal drain.

The proposed project will consist of installing a 24" RCP under Highway 15 at an elevation approximately 1.7 feet lower than the original construction, and the channel grade will be lowered accordingly both upstream and downstream. The channel side slopes will be flattened to 4:1 through the reconstructed reach. These improvements are required to improve the efficiency of the drainage system and reduce the flooding of agricultural properties upstream from North Dakota State Highway 15.

The project engineer's estimated cost is \$215,036, of which \$162,349 is determined eligible for state cost participation as a rural flood control project at 45 percent of the eligible costs (\$73,057).

It was the recommendation of Secretary Sando that the State Water Commission approve a state cost participation grant as a rural flood control project at 45 percent of the eligible costs, not to exceed an allocation of \$73,057 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Wells County Water Resource District to support the Oak Creek Drain Lateral E reconstruction project.

It was moved by Commissioner Foley and seconded by Commissioner Vosper that the State Water Commission approve a state cost participation grant as a rural flood control project at 45 percent of the eligible costs, not to exceed an allocation of \$73,057 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Wells County Water Resource District to support the Oak Creek Drain Lateral E reconstruction project. This action is contingent upon the availability of funds, and satisfaction of the required permits.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

***RICHLAND COUNTY DRAIN NO. 15
RECONSTRUCTION PROJECT -
APPROVAL OF STATE COST
PARTICIPATION (\$60,300)
(SWC Project No. 1613)***

A request from the Richland County Water Resource District was presented for the State Water Commission's consideration for state cost participation in the Richland County Drain No. 15 reconstruction project.

The Richland County Drain No. 15 was constructed in the early 1900s with 1:1 side slopes and a narrow channel bottom adjacent to a township road. The side slopes to the channel are failing and sliding and periodically blocking the channel.

The project consists of the reconstruction of approximately 0.6 mile of the existing drain channel beginning where the legal drain outlets into a natural tributary of Antelope Creek. The channel improvement will follow the existing channel alignment to the township road. The channel will be relocated approximately 25 feet from the road on the east/west portion with side slopes of 4:1.

The project engineer's cost estimate is \$200,000, of which \$134,000 is determined eligible for state cost participation as a rural flood control project at 45 percent of the eligible costs (\$60,300).

It was the recommendation of Secretary Sando that the State Water Commission approve state cost participation as a rural flood control project at 45 percent of the eligible costs, not to exceed an allocation of \$60,300 from the funds appropriated to the State Water Commission in the 2013-2014 biennium (H.B. 1020), to the Richland County Water Resource District to support the Richland County Drain No. 15 reconstruction project.

It was moved by Commissioner Vosper and seconded by Commissioner Thompson that the State Water Commission approve a state cost participation grant as a rural flood control project at 45 percent of the eligible costs, not to exceed an allocation of \$60,300 from the funds appropriated to the State Water Commission in the 2013-2014 biennium (H.B. 1020), to the Richland County Water Resource District to support the Richland County Drain No. 15 reconstruction project. This action is contingent upon the availability of funds, and satisfaction of the required permits.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

**LAMOURE COUNTY MEMORIAL PARK
STREAM BANK RESTORATION PROJECT -
APPROVAL OF STATE COST
PARTICIPATION (\$91,042)
(SWC Project No. 1285)**

A request from the LaMoure County Soil Conservation District was presented for the State Water Commission's consideration for state cost participation in the LaMoure County Memorial Park stream bank restoration project.

With increased variable flows along the James River, several banks are eroding jeopardizing areas of the LaMoure County Memorial Park. This proposed project will stabilize the following banks deemed the most critical, and raise a section of road that will replace the current park entrance: Site 1 - significant erosion occurred at the current park entrance road, caretaker's home and veterans memorial monument - the length of the bank to be stabilized is approximately 800 feet; Site 2 - erosion is encroaching upon the museum buildings - the length of the bank to be stabilized is 736 feet; and Site 4 - erosion is infringing on a small service area and a portion of the public camping grounds - the length of the bank to be stabilized is 472 feet.

The project engineer's cost estimate is \$966,946, of which 75 percent will be funded from the Outdoor Heritage Fund (\$725,209). The remaining costs of \$151,736 are determined eligible for state cost participation as a bank stabilization project at 60 percent of the eligible costs (\$91,042).

It was the recommendation of Secretary Sando that the State Water Commission approve state cost participation as a bank stabilization project at 60 percent of the eligible costs, not to exceed an allocation of \$91,042 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to support the LaMoure County Memorial Park stream bank restoration project.

It was moved by Commissioner Vosper and seconded by Commissioner Nodland that the State Water Commission approve a state cost participation grant as a bank stabilization project at 60 percent of the eligible costs, not to exceed an allocation of \$91,042 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the LaMoure County Soil Conservation District to support the LaMoure County Memorial Park stream bank restoration project. This action is contingent upon the availability of funds, and satisfaction of required permits.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

***CITY OF LISBON - SHEYENNE RIVER
BANK STABILIZATION PROJECT -
APPROVAL OF STATE COST
PARTICIPATION (\$409,300)
(SWC Project No. 1991)***

A request from the City of Lisbon was presented for the State Water Commission's consideration for state cost participation in the Sheyenne River bank stabilization project. Erosion of the Sheyenne River banks has become a

concern to protecting the city's infrastructure including streets, sanitary sewer, storm sewer and water lines, as well as safety for the citizens.

The proposed project consists of restoring and stabilizing approximately 975 feet of river bank along the Sheyenne River in four areas: Site 1 is approximately 750 feet east of the Highway 32 bridge and 350 feet east of the existing dam. The eroding bank is on the northeast side of the river on the left bank. Site 2 involves 450 feet north of Highway 27 and 350 feet west of Highway 32. The eroding bank is on the west side of the river on the right bank. Site 3 involves the north end of Rose Street approximately 900 feet east of Highway 32 and 850 feet north of Highway 27. The eroding bank is on the east side of the river on the left bank. Site 4 is approximately 1,000 feet east of Highway 32 and 2,500 feet south of Highway 27. The eroding bank runs along the west side of Rose Street, and is on the east side of the river on the left bank. The project engineer's estimated cost is \$614,000.

The city has requested mitigation assistance for erosion being caused by higher river flows from the Devils Lake outlets. The increased flows have raised the normal surface water level causing the river banks to be under cut at a higher than the normal surface level.

It was the recommendation of Secretary Sando that the State Water Commission approve state cost participation of 40 percent of the total cost to mitigate the erosion caused by increased flows from the Devils Lake outlets (\$245,600), and approve state cost participation as a bank stabilization project at 60 percent for the remaining eligible costs (\$163,700), for an amount not to exceed a total allocation of \$409,300 from funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020).

It was moved by Commissioner Thompson and seconded by Commissioner Nodland that the State Water Commission:

1) approve a state cost participation grant of 40 percent of the total cost of the project to mitigate the affects of the Devils Lake outlets (\$245,600); and

2) approve a state cost participation grant as a bank stabilization project at 60 percent of the remaining eligible costs (\$163,700), for an amount not to exceed a total allocation of \$409,300 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the City of Lisbon to support the Sheyenne River bank stabilization project. These actions are contingent upon the availability of funds, and satisfaction of the required permits.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

***MERGENTHAL DRAIN NO. 5
CHANNEL IMPROVEMENTS
PROJECT (TRAILL COUNTY) -
APPROVAL OF ADDITIONAL STATE
COST PARTICIPATION (\$71,110)
(SWC Project No. 1227)***

On March 7, 2012, the State Water Commission approved a request from the Traill County Water Resource District for state cost participation as a rural flood control project at 45 percent of the eligible costs, not to exceed \$84,670 from the funds appropriated to

the State Water Commission in the 2011-2013 biennium (S.B. 2020), to support the Mergenthal Drain No. 5 channel improvements project. A drain permit and assessment

vote passed after the project was approved, but the project did not move forward at that time due to increased costs for utility relocation and right-of-way acquisition.

Trails County Mergenthal Drain No. 5 was constructed in 1904. The original crossings have been replaced, and channel maintenance was completed in 1978. The channel is approximately 4.5 miles in length and outlets into an unnamed coulee that flows into the Goose River in the SE1/4 of Section 28, Township 146 North, Range 50 West. The watershed is predominately cropland.

The District has redesigned the improvement project to minimize impacts to the existing utility infrastructure and permitted land treatment berms adjacent to the existing drain. The proposed project will realign the Drain No. 5 outlet to the existing Paulson Drain No 7. The proposed channel width would be 10 feet with side slopes of 4:1. New culverts designed to a 10-year rainfall event will be installed at each of the section crossings as well as intercept culverts to accommodate adjacent field drainage.

The project engineer's revised estimated cost is \$665,000, of which \$346,178 is determined eligible for state cost participation at 45 percent (\$155,780). A request from the Trails County Water Resource District was presented for the State Water Commission's consideration for a 45 percent state cost participation of the eligible costs.

It was the recommendation of Secretary Sando that the State Water Commission approve a state cost participation grant as a rural flood control project at 45 percent of the eligible costs, not to exceed an additional allocation of \$71,110 (45 percent state cost participation of the eligible costs (\$155,780) less \$84,670 approved March 7, 2012) from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Trails County Water Resource District to support the Mergenthal Drain No. 5 channel improvements project. The Commission's affirmative action would increase the total state cost participation to \$155,780.

It was moved by Commissioner Vosper and seconded by Commissioner Thompson that the State Water Commission approve a state cost participation grant as a rural flood control project at 45 percent of the eligible costs, not to exceed an additional allocation of \$71,110 (45 percent state cost participation of the eligible costs (\$155,780) less \$84,670 approved March 7, 2012) from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Trails County Water Resource District to support the Mergenthal Drain No. 5 channel improvements project. This action is contingent upon the availability of funds, satisfaction of the required drain permit, and receipt of the final engineering plans.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

This action increases the total State Water Commission financial allocation to \$155,780 for the Mergenthal Drain No. 5 channel improvements project.

**FEDERAL/STATE COOPERATIVE
LIDAR COLLECTION PROJECT -
APPROVAL OF STATE COST
PARTICIPATION (\$75,000)
(SWC Project No. 2045)**

A request for state cost participation in a LiDAR collection project for the counties of Burleigh, Kidder, Emmons, Logan, McIntosh, Dunn, and Oliver was presented for the State Water Commission's consideration. The project involves approximately 9,500 square miles at an estimated cost of \$1,975,000. Proposed funding includes the Natural Resource Conservation Service (\$1,500,000), and the U.S. Geological Survey (\$400,000). The request before the State Water Commission is for state cost participation in the amount of \$75,000.

Prior to 2010, the only LiDAR collected was for the Red River basin, with the most recent collection efforts undertaken in Ward, Williams, Mercer and McKenzie counties. The North Dakota LiDAR Coalition has been responsible for the remainder of the state with its priority to continue its efforts from the Red River basin to the Missouri River and completion of the southwest corner of the state. With the addition of the above-mentioned counties, approximately 25 percent of the state remains for LiDAR collection.

The data will meet FEMA and USGS specifications and includes an agreement with the USGS for conducting the required quality assessment/quality control for FEMA flood insurance rate maps. The collection is targeted for the fall of 2014, with the final product anticipated in early 2016. Upon completion, the data will be made available through the State Water Commission.

The State Water Commission's participation in this effort has provided significant benefits ensuring the quality of the collection efforts relating to establishing priorities, pursuing mutual goals, and providing awareness and collaboration on proposed and future collections, as well as preventing duplication of efforts.

It was the recommendation of Secretary Sando that the State Water Commission approve state cost participation not to exceed an allocation of \$75,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the U.S. Army Corps of Engineers to support the federal/state cooperative LiDAR collection project.

It was moved by Commissioner Hanson and seconded by Commissioner Thompson that the State Water Commission approve a state cost participation grant not to exceed an allocation of \$75,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the U.S. Army Corps of Engineers to support the federal/state cooperative LiDAR collection project. This action is contingent upon the availability of funds, and approval of funding from the North Dakota LiDAR Coalition agencies.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

**CITY OF LISBON PERMANENT
FLOOD CONTROL PROJECT,
PHASE I, LEVEE A; AND CITY OF
VALLEY CITY PERMANENT
FLOOD PROTECTION PROJECT -
LOAN NEGOTIATIONS
(SWC Project Nos. 1991 and 1504)**

On May 29, 2014, the State Water Commission adopted a motion to approve a loan to the City of Lisbon from the State Water Commission for the local cost share (\$536,302); and a loan to the City of Valley City for the local cost share (\$3,860,614), at an interest rate of one and one half per-

cent. The motion authorized the Secretary to the Commission to negotiate the term of the loans.

2013 Senate Bill 2233, Section 11, created and enacted a new section to chapter 61-02 of the North Dakota Century Code relating to the infrastructure revolving loan fund.

The specifics of the bill were reviewed noting that projects not eligible for the state revolving loan fund administered by the State Department of Health will be given priority for these funds. Water supply projects are the only projects eligible for state cost participation that are eligible for the state revolving loan program. It is estimated that ten percent of the deposit between January 1, 2015 and the end of the 2013-2015 biennium could result in \$16,400,000 being available for this loan program.

Loans approved prior to January 1, 2015 would not be considered under this law. Although the Commission is tasked with adopting policies for the project review and approval of loans after January 1, 2015, it was the general consensus of the Commission members to take into account the specifics defined within the legislation, at a preferred interest rate of one and one-half percent, when considering loans for water supply projects prior to January 1, 2015.

The State Water Commission staff and representatives of the Bank of North Dakota have negotiated the loan terms, and determined that a 30-year loan limitation at an interest rate of one and one-half percent would be appropriate. The State Water Commission would approve the projects and loans, and the Bank of North Dakota would administer and manage the individual accounts.

***CITY OF LISBON PERMANENT
FLOOD CONTROL PROJECT,
PHASE 1, LEVEE A - FLOODWALL -
APPROVAL OF STATE COST
PARTICIPATION (\$680,000)
(SWC Project No. 1991)***

On May 29, 2014, the State Water Commission adopted a motion to approve a state cost participation grant as a flood control project at 60 percent of the eligible costs (\$6,509,760); a state cost participation grant to mitigate the flood risk from the Devils Lake outlets at 20 percent of the eligible costs (\$309,675); and a loan to the City of Lisbon from the State Water Commission for the local cost share (\$536,302), for a total state cost participation grant not to exceed an allocation of \$1,238,698 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the City of Lisbon for its permanent flood protection project, Phase 1 - Levee A.

A request from the City of Lisbon was presented for the State Water Commission's consideration for state cost participation for their floodwall protection project. The proposed project involves 270 feet of floodwall that would connect portions of Levee A where there was insufficient right-of-way to construct the clay levee. The project engineer's estimated cost is \$850,000, of which 60 percent is determined eligible for state cost participation as a flood control project (\$510,000).

It was the recommendation of Secretary Sando that the State Water Commission: 1) approve a state cost participation grant as a flood control project at 60 percent of the eligible costs (\$510,000); 2) deviate from its current cost share policy to approve an additional state cost participation grant of 20 percent of the eligible costs (\$170,000) to mitigate the flood risk from the Devils Lake outlets, which would provide a total state cost participation grant of 80 percent not to exceed a total allocation of \$680,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the City of Lisbon for its permanent flood protection project, Phase 1 - Levee A - Floodwall; and 3) approve a loan from the State Water Commission to the City of Lisbon for the local cost share (\$170,000), with an interest rate of one and one-half percent, and authorize the Secretary to the Commission to negotiate the term of the loan.

It was moved by Commissioner Foley and seconded by Commissioner Vosper that the State Water Commission:

- 1) approve a state cost participation grant as a flood control project at 60 percent of the eligible costs (\$510,000);***
- 2) approve a state cost participation grant to mitigate the flood risk from the Devils Lake outlets at 20 percent of the eligible costs (\$170,000); and***
- 3) approve a loan to the City of Lisbon from the State Water Commission for the local cost share (\$170,000), at an interest rate of one and one-half percent; and, authorize the Secretary to the State Water Commission to negotiate the term of the loan.***

These actions are contingent upon the availability of funds, and satisfaction of the required permits.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

The above approvals include a total state cost participation grant of 80 percent not to exceed a total allocation of \$680,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B.1020), and a loan in the amount of \$170,000 to the City of Lisbon for its permanent flood protection project, Phase 1 - Levee A - Floodwall.

***MISSOURI WEST WATER SYSTEM,
SOUTH MANDAN IMPROVEMENTS
AND EXPANSION PROJECTS -
APPROVAL OF ADDITIONAL STATE COST
PARTICIPATION GRANTS (\$254,000)
(SWC Project No. 2050-MIS)***

On October 7, 2013, the State Water Commission adopted a motion approving a state cost participation grant of 50 percent of the eligible costs, not to exceed \$400,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020)

to the Missouri West Water System to support the south Mandan improvements project. The project involves the installation of 13.2 miles of 6" to 4" transmission pipeline for service to 275 existing users, and restore flow rates through areas impacted by the rapid population growth along the existing undersized pipelines in three sections of the system in Morton county. The water supply is from the city of Mandan and the Southwest Water Authority.

On March 17, 2014, the State Water Commission adopted a motion approving a state cost participation grant of 75 percent of the eligible costs, not to exceed an additional allocation of \$122,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Missouri West Water System to support the south Mandan expansion project. This project involves 17,850 feet of 3" to 1.5" pipeline for the addition of 7 rural users within the airport service area.

A request from the Missouri West Water System was presented for the State Water Commission's consideration for a 50 percent state cost participation grant not to exceed an additional \$103,000 for the south Mandan improvements project. This request is the result of increased costs due to higher construction bid costs.

A request from the Missouri West Water System was also presented for the State Water Commission's consideration for a 75 percent state cost participation grant not to exceed an additional allocation of \$151,000 for the south Mandan project expansion project. This request is the result of increased costs from higher construction bid costs and the addition of 16 rural users.

It was the recommendation of Secretary Sando that the State Water Commission approve a state cost participation grant of 50 percent of the eligible costs, not to exceed an additional allocation of \$103,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Missouri West Water System to support the south Mandan improvements project.

It was also the recommendation of Secretary Sando that the State Water Commission approve a state cost participation grant of 75 percent not to exceed an additional \$151,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020) to the Missouri West Water System to support the south Mandan expansion project. The Commission's affirmative action would increase the total state allocation grants to \$776,000 for the south Mandan improvements and expansion projects.

It was moved by Commissioner Hanson and seconded by Commissioner Nodland that the State Water Commission:

- 1) approve a state cost participation grant at 50 percent of the eligible costs, not to exceed an additional allocation of \$103,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Missouri West Water System to support the south Mandan improvements project; and***

2) approve a state cost participation grant at 75 percent of the eligible costs, not to exceed an additional allocation of \$151,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium, to the Missouri West Water System to support the south Mandan expansion project.

These actions are contingent upon the availability of funds, and are subject to future revisions.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

These actions increase the total state allocation grants to \$776,000 to the Missouri West Water System to support the improvements and expansion projects.

***STUTSMAN RURAL WATER DISTRICT
2014 EXPANSION PROJECT, PHASES II-B
AND III - APPROVAL OF ADDITIONAL
STATE COST PARTICIPATION
GRANTS (\$2,155,000)
(SWC Project No. 237-03STU)***

The Stutsman Rural Water District is developing expansions to address inadequacies in the rural system which limits their ability for the addition of rural water users. The system initially served 1,200 rural users, the cities of Cleveland and Montpelier, and the Northern Prairie Wildlife Research Center. On March 11,

2004, the State Water Commission passed a motion to approve a 65 percent grant not to exceed \$24,700 from the Water Development and Research Fund, for the Stutsman County Rural Water hydraulic model and feasibility study. On March 10, 2005, the State Water Commission approved a 5 percent grant, not to exceed an allocation of \$83,500 from the Water Development and Research Fund, for the Stutsman Rural Water District infrastructure improvements project. On June 22, 2005, the Commission passed a motion to increase the grant to 10 percent of the eligible costs.

Previous State Water Commission grant funding actions include:

On June 21, 2011, the State Water Commission approved a 70 percent grant, not to exceed an additional allocation of \$6,800,000 from the funds appropriated to the State Water Commission in the 2011-2013 biennium (S.B. 2020) to support the 2011 expansion project, Phase II, involving 298 miles of 8" to 1.5" pipeline for 90 rural users and service capacity to the northern Stutsman area and the city of Woodworth.

On February 27, 2013, the State Water Commission approved a 70 percent grant, not to exceed an additional allocation of \$2,500,000 for the Phase II-B expansion project for west central Stutsman county for an area between Woodworth and southeast to Windsor involving 76 miles of 8" to 1.5" pipeline for 244 rural users and a 250,000 gallon storage tank;

and a 75 percent grant not to exceed an additional allocation of \$7,500,000 from the supplemental funds appropriated to the State Water Commission in the 2011-2013 biennium through H.B. 1269 for the Phase III expansion project involving 270 miles of 8" to 1.5" pipeline for 330 rural users and service to the city of Streeter.

On July 23, 2013, the State Water Commission approved a 75 grant not to exceed an additional allocation of \$650,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020) for Phase III that involved 32 miles of 4" to 1.5" pipeline for 17 rural users in Kidder county;

and a 75 percent grant not to exceed an additional allocation of \$557,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020) for Phase II-B for the Carrington area involving 35 miles of 3" to 1.5" pipeline for 27 rural users.

On March 17, 2014, the State Water Commission approved a 75 percent grant not to exceed an additional allocation of \$1,400,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020) for Phase II of the 2014 expansion project.

A request from the Stutsman Rural Water District was presented for the State Water Commission's consideration for state cost participation for the 2014 expansion project, Phase II-B for a 70 percent grant in the amount of \$1,109,000 for the addition of 55 new rural users. The District also requested the State Water Commission's consideration for state cost participation for the 2014 expansion project, Phase III, for a 75 percent grant for an additional 90 rural users.

It was the recommendation of Secretary Sando that the State Water Commission approve a 70 percent grant not to exceed an additional allocation of \$1,109,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Stutsman Rural Water District 2014 expansion project, Phase II-B; and a 75 percent grant not to exceed an additional allocation of \$1,046,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Stutsman Rural Water District 2014 expansion project, Phase III. The Commission's affirmative action would increase the total state allocation grants to \$21,562,000 (June 21, 2011 through September 15, 2014).

It was moved by Commissioner Swenson and seconded by Commissioner Thompson that State Water Commission:

- 1) approve a 70 percent state cost participation grant not to exceed an additional allocation of \$1,109,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Stutsman Rural Water District 2014 expansion project, Phase II-B; and***
- 2) approve a 75 percent state cost participation grant not to exceed an additional allocation of \$1,046,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Stutsman Rural Water District 2014 expansion project, Phase III.***

These actions are contingent upon the availability of funds, subject to future revisions, and authorizes the Secretary to the State Water Commission to transfer funds within phases to allow for the connection of water users.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

This action increases the total state allocation grants to \$21,562,000 to the Stutsman Rural Water District (June 21, 2011 through September 15, 2014).

***ALL SEASONS WATER USERS
DISTRICT, SYSTEM 1 WELL
FIELD EXPANSION PROJECT -
APPROVAL OF STATE COST
PARTICIPATION GRANT (\$292,500)
(SWC Project No. 2050-ALL)***

A request from the All Seasons Water Users District was presented for the State Water Commission's consideration for state cost participation for a 75 percent grant for the System 1 well field expansion project.

The System 1 area serves approximately 375 rural customers and provides bulk service to the community of Upham. The water source for System 1 is ground water extracted with two wells from the Twin Lakes aquifer. In recent years, the System 1 area has been experiencing a steady growth within the community and an increasing demand for water. The existing two wells are no longer able to keep up with the increasing water demand for the System 1 service area,

which has resulted in water shortages in recent months. The District had pursued an alternate water source for the System 1 area, but the alternate source is not available. The District plans to drill another well in the Twin Lakes aquifer at an estimated cost of \$390,000.

It was the recommendation of Secretary Sando that the State Water Commission approve a state cost participation grant of 75 percent of the eligible costs, not to exceed an allocation of \$292,500 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the All Seasons Water Users District to support the System 1 well field expansion project.

It was moved by Commissioner Foley and seconded by Commissioner Hanson that the State Water Commission approve a state cost participation grant of 75 percent of the eligible costs, not to exceed an allocation of \$292,500 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the All Seasons Water Users District to support the System 1 well field expansion project. This action is contingent upon the availability of funds, and is subject to future revisions.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

**BARNES RURAL WATER DISTRICT,
WATER TREATMENT PLANT IMPROVE-
MENTS PROJECT -
APPROVAL OF ADDITIONAL
STATE COST PARTICIPATION
GRANT (\$643,585)
(SWC Project No. 2050-BAR)**

On October 7, 2014, the State Water Commission adopted a motion approving a 50 percent state cost participation grant, not to exceed an allocation of \$1,310,000 for the Barnes Rural Water District water treatment plant improvements, and a 75 percent state cost participation grant of the eligible costs

for the rural expansion project, not to exceed an allocation of \$3,290,000 (for a total grant allocation of \$4,600,000) from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020).

The water treatment plant project would increase the capacity to address peak day usage, restore redundancy for repairs, and provide for an additional 150 residential and industrial users. The water supply is from the Spiritwood aquifer treated with an iron and manganese water treatment plant. The Barnes Rural Water District currently serves 4,057 people in Barnes county.

The Barnes Rural Water District's currently monthly water rate is \$60.00 per 5,000 gallons of water based on a monthly minimum charge of \$35.00 and a water rate of \$5.00 per 1,000 gallons of water.

Because of increased construction bid costs for the water treatment plant improvements project, the project engineer's revised estimated cost is \$3,915,171, of which \$3,907,171 is determined eligible for a state cost participation grant of 50 percent of the eligible costs (\$1,953,585). A request from the Barnes Rural Water District was presented for the State Water Commission's consideration for a 50 percent state cost participation of the eligible costs.

It was the recommendation of Secretary Sando that the State Water Commission approve a state cost participation grant of 50 percent of the eligible costs, not to exceed an additional allocation of \$643,585 (eligible costs of \$1,953,585 less \$1,310,000 approved on October 7, 2013) from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Barnes Rural Water District to support their water treatment plant improvements project. The Commission's affirmative action would increase the total state allocation grants to \$5,243,585 (\$1,953,585 for the Barnes Rural Water District water treatment plant; and \$3,290,000 for the rural expansion project).

It was moved by Commissioner Thompson and seconded by Tom Bodine representing Commissioner Goehring that the State Water Commission approve a state cost participation grant of 50 percent of the eligible costs, not to exceed an additional allocation of \$643,585 (eligible costs of \$1,953,585 less \$1,310,000 approved on October 7, 2013) from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the Barnes Rural Water District to support their water treatment plant improvements project. This action is contingent upon the availability of funds, and is subject to future revisions.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

This action increases the total state allocation grants to \$5,243,585 (\$1,953,585 for the Barnes Rural Water District water treatment plant, and \$3,290,000 for the rural expansion project).

**FARGO MOORHEAD AREA
DIVERSION PROJECT REPORT
(SWC Project No. 1928)**

Pat Zavoral, City of Fargo, provided updates to the State Water Commission members on the Fargo Moorhead Area Diversion project regarding the recent

Presidential authorization for construction of the project and the recent authorization of \$846,000,000 as the federal share of the cost as specified in the Water Resource Reform and Development Act (WRRDA), work that is underway to implement distributed storage, mitigation efforts underway upstream of the project, and the priorities for the next several years. **SEE APPENDIX "D"**

Mr. Zavoral stated that the Diversion Project was one of 26 water projects authorized nationwide, and the "significance of the authorization cannot be overstated. The Diversion Authority will now focus efforts on securing funding to begin construction." Funding from the State of North Dakota can only be used for the Diversion once federal funding for construction is received. The State of North Dakota has committed \$175,000,000 to the Diversion Project, and legislative intent for an additional \$275,000,000 over the next four bienniums. Two dedicated local sales tax efforts were approved by voters in the City of Fargo and Cass County to help fund the Diversion Project.

**FARGO FLOOD CONTROL PROJECT -
2013 H.B. 1020 (\$100,000,000) APPROVED
(SWC Project No. 1928)**

The 2009 North Dakota Legislature included in House Bill 1020, the State Water Commission's appropriation bill for the 2009-2011 biennium, an earmark

of \$75,000,000 for the Fargo Flood Control project, with an allocation of \$45,000,000 for the 2009-2011 biennium, and legislative intent that included \$30,000,000 for the 2011-2013 biennium. On June 23, 2009, the State Water Commission approved the legislative mandate allocation not to exceed \$45,000,000, and on June 21, 2011, the State Water Commission approved the legislative intent allocation not to exceed \$30,000,000.

The Fargo Flood Control project is estimated to cost \$1,800,000,000, of which \$1,000,000,000 is the non-federal cost share. The 2013 Legislature declared its intent to provide state funding not to exceed \$450,000,000 for 50 percent of the local cost of construction of a federally authorized project. The legislation specified that the remaining \$275,000,000 would be funded with \$68,750,000 per biennium over the next four bienniums.

The 2013 North Dakota Legislature mandated legislative intent in House Bill 1020, the State Water Commission's appropriation bill for the 2013-2015 biennium, that \$100,000,000 be dedicated to the City of Fargo to support the Fargo Flood Control project. The legislative intent states:

SECTION 11. FARGO FLOOD CONTROL PROJECT FUNDING - EXEMPTION.

Of the funds appropriated in the water and atmospheric resources line item in section 1 of this Act, \$100,000,000 is for Fargo flood control projects, for the biennium July 1, 2013 and ending June 30, 2015. Any funds not spent by June 30, 2015, are not subject to Section 54-44-1.11 and must be continued into the next or subsequent bienniums and may be expended only for Fargo flood control projects, including levees and dikes. Except as otherwise provided, these funds may be used only for land purchases and construction, including right-of-way acquisition costs and may not be used for the purchase of dwellings. No more than ten percent of these funds may be used for engineering, legal, planning, or other similar purposes. The city of Fargo, Cass County, and the Cass County joint water resource district must approve any expenditures made under this section. Costs incurred by non-state entities for dwellings or other real property which are not paid by state funds are eligible for application by the non-state entity for cost sharing with the state.

It was the recommendation of Secretary Sando that the State Water Commission approve a 50 percent grant, not to exceed an additional allocation of \$100,000,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the City of Fargo to support the Fargo Flood Control project. This action is contingent upon the availability of funds. The Commission's affirmative action would provide the total legislative earmark allocation of \$175,000,000.

It was moved by Commissioner Thompson and seconded by Commissioner Vosper that the State Water Commission approve a 50 percent grant, not to exceed an additional allocation of \$100,000,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020), to the City of Fargo to support the Fargo Flood Control project. This action is contingent upon the availability of funds.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

This action increases the total state cost participation to \$175,000,000 to the City of Fargo to support the Fargo Flood Control project.

**SOUTHWEST PIPELINE PROJECT -
PROJECT REPORT
(SWC Project No. 1736-99)**

The Southwest Pipeline Project report was presented, which is detailed in the staff memorandum dated August 26, 2014, and attached as **APPENDIX "E"**.

**SOUTHWEST PIPELINE PROJECT -
APPROVAL OF COST OVERRUN
(\$15,500,000)
(SWC Project No. 1736-99)**

The State Water Commission's 2013-2015 budget includes \$79,000,000 for the Southwest Pipeline Project which was anticipated to cover the costs of completing construction in the Oliver-

Mercer-North Dunn regional service area, the joint finished water pump station between the city of Dickinson and the Southwest Pipeline Project, Phase I, construction of the supplemental raw water intake, equipment procurements for expanding the water treatment plant at Dickinson, the residuals handling building, associated telemetry contracts and agency operations.

Fourteen (14) construction contracts have been bid and awarded using the 2013-2015 appropriation, for a total project cost commitment of \$71,000,000. The estimated costs for these 14 construction contracts during budgeting were \$64,250,000. At its meeting on September 15, 2014, the State Water Commission will consider a recommendation for funding an equipment procurement contract with an estimated project cost of \$1,800,000, which will bring the total construction contracts to \$72,800,000. Because of the robust economy due to the oil boom in North Dakota, the actual construction costs are significantly higher than the estimated costs.

Contracts and estimated costs included in the 2013-2015 budget remaining to be bid are the Halliday and Dunn Center Service Area Rural Distribution System (\$12,000,000) and the residual handling building for the City of Dickinson (\$5,600,000). To bid these contracts as initially anticipated for the 2013-2015 biennium, the Southwest Pipeline Project would require an additional \$15,500,000 in authority.

It was the recommendation of Secretary Sando that the State Water Commission approve an additional allocation of \$15,500,000 to the Southwest Pipeline Project from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020).

It was moved by Commissioner Foley and seconded by Commissioner Vosper that the State Water Commission approve an additional allocation of \$15,500,000 to the Southwest Pipeline Project from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020). This action is contingent upon the availability of funds.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

***SOUTHWEST PIPELINE PROJECT -
AWARD OF CONTRACT 3-2C, NEW
DICKINSON WATER TREATMENT
PLANT OZONE SYSTEMS EQUIPMENT
PROCUREMENT, TO S. ROBERTS CO.
(PINNACLE OZONE SOLUTIONS),
EDEN PRAIRIE, MN (\$1,693,338.46)
(SWC Project No. 1736-99)***

Southwest Pipeline Project Contract 3-2C is for the New Dickinson Water Treatment Plant Ozone Systems Equipment Procurement. This contract consists of furnishing ozone generation and feed equipment for the new Dickinson water treatment plant to be located on property located east of the existing Dickinson water treatment plant that is

in the process of getting transferred from the City of Dickinson to the State Water Commission. The scope of supply was generally for oxygen generation equipment, ozone generation equipment, and a side stream injection system which provides a capacity of 675 pounds per day of ozone, along with ancillary equipment such as ozone destruct units, a closed loop ozone generator cooling water system, and associated integration and controls equipment. The design and construction phase services will consist of providing consultation to insure the treatment plant is designed to properly utilize the ozone equipment and insuring proper installation as well as providing start-up services.

Competitive sealed proposals were solicited for Contract 3-2C in accordance with NDAA 4-12-12. Four proposals were received from: S. Roberts Co. (Pinnacle Ozone Solutions), Eden Prairie, MN; Xylem Water Solutions USA, Charlotte, NC; Ozonia North America, Leonia, NJ; and Mitsubishi Electric Power Products, Warrendale, PA. All proposals appeared in order and were opened on July 31, 2014. The apparent low bid received was \$1,693,338.46 from S. Roberts Co. (Pinnacle Ozone Solutions), Eden Prairie, MN. The award of this contract is based on a 20-year life cycle analysis.

The bid form included two Bid Alternates. Bid Alternate 1 was for an additional 12 months of warranty on all equipment (2 year warranty included in the base bid). Bid Alternate 2 was for an additional one day technical training and/or programming services including travel costs and lodging.

The contract documents allow the State Water Commission to select the most advantageous bid. Based on the project engineer's review, the bid received from S. Roberts Co. (Pinnacle Ozone Solutions), Eden Prairie, MN, appeared to be in accordance with the advertisement for construction bid and the bid documents, and is considered to be a responsive bid. It was the recom-

mentation of the project engineer to award Contract 3-2C to S. Roberts Co. (Pinnacle Ozone Solutions), Eden Prairie, MN, based on the Base Bid plus Bid Alternate 1. The award of the contract and notice to proceed are dependent on the satisfactory completion and submission of the contract documents by S. Roberts Co. (Pinnacle Ozone Solutions), and review/approval by the Commission's legal counsel.

It was the recommendation of Secretary Sando that the State Water Commission authorize the Secretary to the Commission to award Southwest Pipeline Project Contract 3-2C, New Dickinson Water Treatment Plant Ozone Systems Equipment Procurement, based on the Base Bid plus Bid Alternate 1, in the amount of \$1,693,338.46 to S. Roberts Co. (Pinnacle Ozone Solutions), Eden Prairie, MN.

It was moved by Commissioner Foley and seconded by Commissioner Nodland that the State Water Commission authorize the Secretary to the Commission to award Southwest Pipeline Project Contract 3-2C, New Dickinson Water Treatment Plant Ozone Systems Equipment Procurement, based on the Base Bid plus Bid Alternate 1, in the amount of \$1,693,338.46 to S. Roberts Co. (Pinnacle Ozone Solutions), Eden Prairie, MN. This action is contingent upon the satisfactory completion and submission of the contract documents by S. Roberts Co. (Pinnacle Ozone Solutions), and the review/approval by the Commission's legal counsel.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

***SOUTHWEST PIPELINE PROJECT -
APPROVAL TO PROVIDE MISSOURI
WEST WATER SYSTEM WITH A
SECOND CONNECTION FROM
SOUTHWEST PIPELINE PROJECT,
UNDER CONTRACT 7-9F
(SWC Project No. 1736-99)***

The Missouri West Water System has requested an additional connection from the Southwest Pipeline Project for capacity to serve approximately 20 rural users. Using the Southwest Pipeline Project's design criteria, 32 gallons per minute (gpm) capacity is required to provide service to 20 rural users.

The requested connection point is along North Dakota Highway 25 in eastern Oliver county. The rural distribution system is under construction by Eatherly Constructors under Southwest Pipeline Project Contract 7-9F. The requested capacity was not included in the design and to provide the system with the 32 gpm capacity, approximately 8 miles of pipeline would be required to be upsized. The estimated change order price for upsizing the pipeline is \$124,000.

It was the recommendation of Secretary Sando that the State Water Commission authorize the Southwest Pipeline Project Manager to execute a change order on Southwest Pipeline Project Contract 7-9F with Eatherly Constructors to provide Missouri West Water System with a second connection from the Southwest Pipeline Project.

It was moved by Commissioner Thompson and seconded by Commissioner Hanson that the State Water Commission authorize the Southwest Pipeline Project Manager to execute a change order on Southwest Pipeline Project Contract 7-9F with Eatherly Constructors to provide Missouri West Water System with a second connection from the Southwest Pipeline Project.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

***SOUTHWEST PIPELINE PROJECT -
APPROVAL OF EXPENDITURE
REIMBURSEMENT FROM RESERVE
FUND FOR REPLACEMENT AND EXTRA-
ORDINARY MAINTENANCE
(\$582,414.78)
(SWC Project No. 1736-99)***

The Southwest Water Authority collects and maintains a reserve fund for "replacement and extraordinary maintenance". This fund, which is required by authorizing legislation, exists to fund replacement and maintenance of items that exceed annual budgeted amounts. Expenditures from this fund are to be

authorized by the State Water Commission.

A request from the Southwest Water Authority was presented for the State Water Commission's consideration for reimbursement of expenditures from the replacement and extraordinary maintenance fund that include the Phase II replacement of telemetry units, water treatment plant rehabilitation project, October, 2013 storm-related damages not reimbursed by the Federal Emergency Management Agency or the North Dakota Department of Emergency Services, asphalt replacement north and south of the O&M building, motor replacements at the intake and the Dodge pump station, pipe relocation that was in the right-of-way, and repair of the raw water main transmission line between the intake and the raw water reservoir at the Oliver-Mercer-North Dunn water treatment plant. The total cost for all of the items requested for reimbursement from the replacement and extraordinary maintenance fund is \$582,414.78.

It was the recommendation of Secretary Sando that the State Water Commission concur with the determination that funds expended for the rehabilitation of the City of Dickinson's water treatment plant are eligible for reimbursement from the reserve fund for replacement and extraordinary maintenance; and that the State Water Commission approve reimbursement of expenditures from the reserve fund for replacement and extraordinary maintenance not to exceed \$582,414.78. The Southwest Water Authority adopted similar action at its August 4, 2014 meeting.

It was moved by Commissioner Nodland and seconded by Commissioner Swenson that the State Water Commission concur with the determination that funds expended for the rehabilitation of the City of Dickinson's water treatment plant are eligible for reimbursement from the reserve fund for replacement and extraordinary maintenance; and, that the State Water Commission approve the reimbursement of expenditures from the reserve fund for replacement and extraordinary maintenance not to exceed \$582,414.78.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

***NORTHWEST AREA WATER
SUPPLY (NAWS) PROJECT -
STATUS REPORTS
(SWC Project No. 237-04)***

The Northwest Area Water Supply (NAWS) project and construction status reports were provided, which are detailed in the staff memorandum dated September 4, 2014, and attached as ***APPENDIX "F"***.

***NORTHWEST AREA WATER
SUPPLY (NAWS) PROJECT -
APPROVAL OF INTERIM WATER
RATES FOR CITY OF MINOT AND
NAWS REGION CITIES FOR 2015
(SWC Project No. 237-04)***

operation and maintenance costs, and reserve for replacement and extraordinary maintenance (REM).

The Northwest Area Water Supply (NAWS) project water service contracts recognize an annual review and adjustment of water rates that are effective January 1st of the following year. The proposed water rates are based on capital costs, supply and treatment costs,

The following proposed NAWS project interim water rates for the City of Minot and the NAWS region cities for 2015 were presented for the State Water Commission's consideration:

<u>Capital Costs:</u>	\$0.00 per 1,000 gallons
<u>Supply and Treatment Costs:</u>	City of Minot: \$0.00 per 1,000 gallons
	NAWS region: \$1.40 per 1,000 gallons
<u>Operation and Maintenance Costs:</u>	City of Minot: \$0.26 per 1,000 gallons
	NAWS region: \$1.13 per 1,000 gallons
<u>Replacement and Extraordinary Maintenance:</u>	\$0.15 per 1,000 gallons

It was the recommendation of Secretary Sando that the State Water Commission approve the following NAWS interim water rates for the 2015 calendar year: City of Minot - \$0.41 per 1,000 gallons; NAWS region - \$2.68 per 1,000 gallons.

It was moved by Commissioner Foley and seconded by Commissioner Nodland that the State Water Commission approve the following Northwest Area Water Supply project interim water rates for the 2015 calendar year:

<i>City of Minot:</i>	<i>\$0.41 per 1,000 gallons</i>
<i>NAWS region:</i>	<i>\$2.68 per 1,000 gallons</i>

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

**WESTERN AREA WATER
SUPPLY PROJECT REPORT
(SWC Project No. 1973)**

report was provided, which is detailed in the staff memorandum dated September 9, 2014, and attached as **APPENDIX "G"**.

2011 House Bill 1206 created the Western Area Water Supply (WAWS) project, under chapter 61-40 of the North Dakota Century Code. The project

**WESTERN AREA WATER
SUPPLY PROJECT -
APPROVAL OF OVERALL PROJECT
PLAN FOR PHASE III/POTENTIAL
ALTERNATE PROJECTS; AND
APPROVAL OF ADDITIONAL \$39,000,000
(\$19,500,000-LOAN/\$19,500,000-GRANT)
(SWC Project No 1973)**

The North Dakota Legislature has allocated \$229,000,000 in funding from various sources for the Western Area Water Supply project to build water supply, treatment, transmission, and distribution infrastructure to provide the water supplies for western North Dakota. In addition to the Legislature providing this funding, Senate Bill 2233 requires the Western Area Water Supply

Authority to submit its overall project plan for the State Water Commission's approval. A request was presented for the State Water Commission's consideration for the overall plan approval for the Western Area Water Supply Project, Phase III, and potential alternate projects, which are the focus of additional transmission and distribution pipelines within the region.

The Western Area Water Supply Authority's July, 2014 capital accounting report indicated Phases I, II, and III cost estimates at \$242,100,000, contracted amounts to-date at \$177,300,000, and actual to-date expenses at \$152,300,000. The current approved funding for the Western Area Water Supply project is \$190,000,000 (\$170,000,000 in loans managed by the Bank of North Dakota; and a \$20,000,000 grant from the State Water Commission). A request from the Western Area Water Supply Authority was presented for the State Water Commission's consideration for an additional \$39,000,000, which would increase the total project funding to \$229,000,000.

It was the recommendation of Secretary Sando that the State Water Commission approve the Western Area Water Supply Project overall plan that would include Phase III projects and potential alternate projects; and approve an additional allocation not to exceed \$39,000,000 (a loan of \$19,500,000 managed by the Bank of North Dakota, and a grant of \$19,500,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020)). The Commission's affirmative action would increase the total approved funding for the Western Area Water Supply project to \$229,000,000.

***It was moved by Commissioner Hanson and seconded by
Commissioner Thompson that the State Water Commission:***

1) approve an additional allocation not to exceed \$39,000,000 (loan of \$19,500,000 managed by the Bank of North Dakota, and grant of \$19,500,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium (H.B. 1020)). This action is contingent upon the availability of funds; and

2) approve the Western Area Water Supply Project overall plan to include Phase III projects and potential alternate projects as submitted to issue contracts not to exceed \$229,000,000.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

This action increases the total approved funding for the Western Area Water Supply project to \$229,000,000.

**WESTERN AREA WATER
SUPPLY PROJECT -
APPROVAL OF CROSBY
FILL STATION RELOCATION
(SWC Project No. 1973)**

A request from the Western Area Water Supply Authority was presented for the State Water Commission's consideration to relocate the Crosby fill station.

The relocation of the Crosby fill station is required in order to continue selling water from the City of Crosby's permit and from the project's system. The current location of the fill station is within the city and inaccessible to truck traffic which limits the use of the station. A new two-lane fill station is proposed outside of the city near the current project line and the city's current well field. The estimated relocation cost is \$1,153,000 which would be funded as a capital expenditure from the industrial water sales funds as approved by the North Dakota Industrial Commission. 2013 Senate Bill 2233 requires the State Water Commission's approval of the planning, location, and water supply contracts of all Western Area Water Supply project depots.

It was the recommendation of Secretary Sando that the State Water Commission approve the request from the Western Area Water Supply Authority to relocate the Crosby fill station in the Western Area Water Supply project.

It was moved by Commissioner Nodland and seconded by Commissioner Hanson that the State Water Commission approve the request from the Western Area Water Supply Authority to relocate the Crosby fill station in the Western Area Water Supply project.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

PROPOSED AMENDMENTS TO ADMINISTRATIVE RULES

The North Dakota State Engineer and the North Dakota State Water Commission held a public hearing on September 9, 2014 to address proposed amendments to North Dakota Administrative Code Articles 89-02 (Drainage of Water), 89-03 (Water Appropriations), 89-04 (Water Management Plans for Surface Coal Mining Operations), 89-08 (Dikes, Dams, and Other Devices), 89-12 (Municipal, Rural and Industrial Water Supply Program), and 89-14 (Stream Crossings). The proposed changes can be viewed on the State Water Commission and Legislative Council websites. Comments will be accepted until September 19, 2014.

MOUSE RIVER ENHANCED FLOOD PROTECTION PROJECT - STATUS REPORT (SWC Project No. 1974-01)

The Mouse River Enhanced Flood Protection project status report was provided, which is detailed in the staff memorandum dated September 3, 2014 and attached as **APPENDIX "H"**.

MOUSE RIVER ENHANCED FLOOD PROTECTION PROJECT - DOWNTOWN INFRASTRUCTURE IMPROVEMENTS PROJECT - APPROVAL OF STATE COST PARTICIPATION (\$1,256,426) (SWC Project No. 1974-01)

A request from the City of Minot was presented for the State Water Commission's consideration for state cost participation in their downtown infrastructure improvements project.

The City of Minot is reconstructing the sewer, roadways, sidewalks, and street lights within the downtown area. The proposed project is confined to the portion of downtown that lies north of Burdick Expressway, east of Broadway, west of 3rd Street SE, and south of Frontage Rd/1st Avenue SE.

The City of Minot is reconstructing the water mains, sanitary sewer, storm

The project will reconstruct the storm sewer to the city's storm water design standards manual and upgrade the public infrastructure for compatibility with the planned flood protection projects as described in the Mouse River Enhanced Flood Protection, Preliminary Engineering Report.

The proposed storm sewer system is designed to function with no surcharging (all flow contained within pipe) during a 5-year, 24-hour design storm event. The City of Minot's design standards regarding minimum pipe cover, and manhole depths were also utilized into the design.

In addition to improving the capacity of the storm sewer networks, a significant alignment change is being recommended to meet the requirements of the Mouse River Enhanced Flood Protection plan.

The project engineer's estimated cost is \$2,830,014, of which \$2,094,043 is determined eligible for state cost participation as a flood control project at 60 percent of the eligible costs (\$1,256,426).

It was the recommendation of Secretary Sando that the State Water Commission approve a state cost participation grant as a flood control project at 60 percent of the eligible costs, not to exceed an allocation of \$1,256,426 from the funds appropriated to the State Water Commission in the 2013-2015 biennium, to the City of Minot to support the downtown infrastructure improvements project.

It was moved by Commissioner Foley and seconded by Commissioner Thompson that the State Water Commission approve a state cost participation grant as a flood control project at 60 percent of the eligible costs, not to exceed an allocation of \$1,256,426 from the funds appropriated to the State Water Commission in the 2013-2015 biennium, to the City of Minot to support the downtown infrastructure improvements project. This action is contingent upon the availability of funds, and satisfaction of the required permits.

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

**DEVILS LAKE HYDROLOGIC
AND PROJECTS UPDATES
(SWC Project No. 416-10)**

The Devils Lake hydrologic report, and project updates were provided, which are detailed in the staff memorandum, dated August 29, 2014, and attached as **APPENDIX "I"**.

**MISSOURI RIVER REPORT
(SWC Project No. 1392)**

The Missouri River report was provided, which is detailed in the staff memorandum dated September 3, 2014, attached hereto as **APPENDIX "J"**. The report also included a letter executed by Secretary Sando on September 11, 2014 to Ms. Jody Farhat, Missouri River Basin Water Management, Omaha, NE, relative to increasing releases from the Garrison Dam.

Ryan Norrell, executive director of the North Dakota Missouri River Stakeholders, was introduced. Mr. Norell alluded to the Stakeholder's mission to "create a grassroots unity, leadership and direction to advocate and promote North Dakota's Missouri River interests." The goals of this effort

include: 1) create unity and leadership for a North Dakota vision and voice on Missouri River issues; 2014 fall workshop (November 20, 2014) to build momentum, interest, commitment (ownership); and 3) 2015 spring conference to develop leadership and direction to advocate North Dakota's Missouri River interests. Refer to **APPENDIX "K"** for an outline regarding the efforts of the North Dakota Missouri River Stakeholders.

**STATE WATER COMMISSIONER-
HOSTED MEETINGS - SECOND ROUND
(2013 HOUSE BILL 1206)
(SWC Project No. 322)**

In the fall of 2013, the State Water Commission conducted a series of Commissioner-hosted meetings in six drainage basins across the state to improve local participation in the water

planning and budget development process as required by 2013 House Bill 1206 (NDCC § 61-02-01.3). The meetings also included presentations relating to the State Water Commission's modified cost share policy and project prioritization guidance concept.

The State Water Commission is hosting a second round of five meetings during September 22-25, 2014 to: 1) present the final cost share policy and project prioritization guidance concept; 2) provide a summary of the 2015-2017 water project inventory effort; and 3) encourage brief project summaries and updates from sponsors who submitted projects to the Commission as part of the 2015-2017 water planning process.

**GARRISON DIVERSION
CONSERVANCY DISTRICT
(SWC Project No. 237)**

Dave Koland, Garrison Diversion Conservancy District general manager, provided a status report relating to the District's current activities which included the Mile Marker 10 and 49 projects.

**APPROVAL OF DRAFT MODIFICATIONS
TO THE STATE WATER COMMISSION'S
COST SHARE POLICY, PROCEDURE,
AND GENERAL REQUIREMENTS,
EFFECTIVE OCTOBER 1, 2014
(SWC Project No 1753)**

The State Water Commission's cost share policy, procedure, and general requirements evolved over the years to respond to the challenges presented by drought, floods, and insufficient dependable water supplies. The Commission's mission is "to improve the quality of life

and strengthen the economy of North Dakota by managing the water resources of the state for the benefit of its people."

With the significant increase in state funding available for water development, the State Water Commission and the staff began drafting revisions in October, 2013 to ensure more consistency and direction where needed yet maintaining awareness to unique aspects across North Dakota. As a result of a significant amount of time and effort put forth by the State Water Commission members and the staff, comments were received from approximately 40 groups and individuals representing a broad spectrum of water interests across the state. These comments were taken into consideration when drafting the new cost share policy.

The Legislature's Interim Water Topics Overview Committee endorsed the draft modifications to the State Water Commission's Cost Share Policy, Procedure, and General Requirements at its June 24, 2014 meeting.

It was the recommendation of Secretary Sando that the State Water Commission approve the modifications to the State Water Commission's Cost Share Policy, Procedure, and General Requirements, with an effective date of October 1, 2014.

It was moved by Commissioner Nodland and seconded by Commissioner Foley that the State Water Commission approve the modifications to the State Water Commission's Cost Share Policy, Procedure, and General Requirements, effective October 1, 2014. SEE APPENDIX "L"

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

APPROVAL OF DRAFT STATE WATER COMMISSION WATER PROJECT PRIORITIZATION GUIDANCE CONCEPT, EFFECTIVE OCTOBER 1, 2014 (SWC Project No. 322)

North Dakota Century Code 54-35-021.7 requires the Legislature's Water Topics Overview Committee to develop a schedule of priorities with respect to water projects. The State Water Commission and the Office of the State Engineer are required to assist the

committee in developing that schedule of priorities.

In order to develop a more formal means of developing a schedule of priority projects as part of the agency's budgeting process, a State Water Commission Water Project Prioritization Guidance Concept has been developed to provide a foundation for that effort. The idea of the concept is to separate project types within priority categories including essential, high, moderate, and low priorities.

The draft State Water Commission Water Project Prioritization Guidance Concept was presented at the State Water Commissioner-hosted meetings held in November and December, 2013, the North Dakota Water Resource Districts Association annual meeting, and to the Legislature's Water Topics Overview Committee. Comments were invited on the draft concept and modifications were made where appropriate.

The Legislature's Interim Water Topics Overview Committee endorsed the State Water Commission Water Project Prioritization Guidance Concept at its June 24, 2014 meeting.

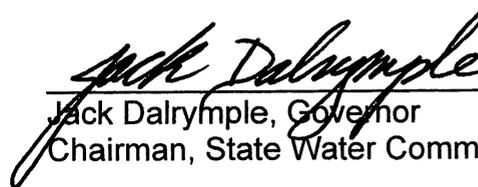
It was the recommendation of Secretary Sando that the State Water Commission approve the draft State Water Commission Water Project Prioritization Guidance Concept, with an effective date of October 1, 2014.

It was moved by Commissioner Foley and seconded by Commissioner Vosper that the State Water Commission approve the draft State Water Commission Water Project Prioritization Guidance Concept, effective October 1, 2014. SEE APPENDIX "M"

Commissioners Foley, Tom Bodine representing Commissioner Goehring, Hanson, Nodland, Swenson, Thompson, Vosper, and Governor Dalrymple voted aye. There were no nay votes. Governor Dalrymple announced the motion unanimously carried.

There being no further business to come before the State Water Commission, Governor Dalrymple adjourned the September 15, 2014 meeting at 4:50 p.m.





Jack Dalrymple, Governor
Chairman, State Water Commission



Todd Sando, P.E.
North Dakota State Engineer,
and Chief Engineer-Secretary
to the State Water Commission

STATE WATER COMMISSION
ALLOCATED PROGRAM EXPENDITURES
FOR THE PERIOD ENDED JULY 31, 2014
BIENNIUM COMPLETE: 54%

PROGRAM	SALARIES/ BENEFITS	OPERATING EXPENSES	GRANTS & CONTRACTS	4-Sep-14 PROGRAM TOTALS
ADMINISTRATION				
Allocated	2,492,011	2,323,966		4,815,977
Expended	1,312,221	1,076,410		2,388,631
Percent	53%	46%		50%
			Funding Source:	
			General Fund:	0
			Federal Fund:	32,591
			Special Fund:	2,356,039
PLANNING AND EDUCATION				
Allocated	1,334,304	301,110	107,000	1,742,414
Expended	647,522	78,021	21,322	746,864
Percent	49%	26%	20%	43%
			Funding Source:	
			General Fund:	0
			Federal Fund:	81,776
			Special Fund:	665,088
WATER APPROPRIATION				
Allocated	4,632,809	548,947	1,215,267	6,397,023
Expended	2,465,546	304,504	451,210	3,221,260
Percent	53%	55%	37%	50%
			Funding Source:	
			General Fund:	0
			Federal Fund:	15,630
			Special Fund:	3,205,630
WATER DEVELOPMENT				
Allocated	6,258,796	14,555,905	3,313,200	24,127,901
Expended	3,108,627	3,803,001	104,920	7,016,548
Percent	50%	26%	3%	29%
			Funding Source:	
			General Fund:	0
			Federal Fund:	788,529
			Special Fund:	6,228,019
STATEWIDE WATER PROJECTS				
Allocated			629,600,000	629,600,000
Expended			67,750,473	67,750,473
Percent			11%	11%
			Funding Source:	
			General Fund:	0
			Federal Fund:	0
			Special Fund:	67,750,473
ATMOSPHERIC RESOURCE				
Allocated	993,898	712,307	4,694,692	6,400,897
Expended	551,981	232,860	1,027,851	1,812,692
Percent	56%	33%	22%	28%
			Funding Source:	
			General Fund:	0
			Federal Fund:	0
			Special Fund:	1,812,692
SOUTHWEST PIPELINE				
Allocated	468,291	12,927,500	101,616,741	115,012,532
Expended	318,573	3,490,497	15,768,734	19,577,805
Percent	68%	27%	16%	17%
			Funding Source:	
			General Fund:	0
			Federal Fund:	741,378
			Special Fund:	18,836,427
NORTHWEST AREA WATER SUPPLY				
Allocated	650,021	16,498,500	53,800,540	70,949,061
Expended	278,633	1,027,910	719,133	2,025,676
Percent	43%	6%	1%	3%
			Funding Source:	
			General Fund:	0
			Federal Fund:	0
			Special Fund:	2,025,676
PROGRAM TOTALS				
Allocated	16,830,130	47,868,235	794,347,440	859,045,805
Expended	8,683,103	10,013,203	85,843,643	104,539,949
Percent	52%	21%	11%	12%
FUNDING SOURCE:	ALLOCATION	EXPENDITURES	REVENUE	
GENERAL FUND	0	0	GENERAL FUND:	348,122
FEDERAL FUND	37,310,283	1,659,904	FEDERAL FUND:	1,978,132
SPECIAL FUND	821,735,522	102,880,045	SPECIAL FUND:	107,305,777
TOTAL	859,045,805	104,539,949	TOTAL:	109,632,031

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND
2013-2015 BIENNIUM

	BUDGET	SWC/SE APPROVED	OBLIGATIONS EXPENDITURES	REMAINING UNOBLIGATED	REMAINING UNPAID
<i>Jul-14</i>					
FLOOD CONTROL					
FARGO	136,740,340	36,740,340	9,434,225	100,000,000	27,306,115
GRAFTON	7,175,000	7,175,000	0	0	7,175,000
MINOT	4,359,760	4,359,760	33,296	0	4,326,463
BURLEIGH COUNTY	1,282,400	1,282,400	0	0	1,282,400
VALLEY CITY	12,890,919	12,890,919	0	0	12,890,919
LISBON	2,475,650	2,475,650	0	0	2,475,650
FORT RANSOM	225,000	225,000	0	0	225,000
RICE LAKE RECREATION DISTRICT	2,842,200	2,842,200	0	0	2,842,200
RENWICK DAM	1,281,376	1,281,376	263,419	0	1,017,957
MOUSE RIVER FLOOD CONTROL	32,259,100			32,259,100	
SHEYENNE RIVER FLOOD CONTROL	7,826,411			7,826,411	
FLOODWAY PROPERTY ACQUISITIONS					
MINOT	33,684,329	33,684,329	2,005,094	0	31,679,235
WARD COUNTY	9,698,169	9,698,169	2,157,559	0	7,540,610
VALLEY CITY	1,822,598	1,822,598	1,089,502	0	733,096
BURLEIGH COUNTY	442,304	442,304	0	0	442,304
SAWYER	184,260	184,260	0	0	184,260
LISBON	888,750	888,750	529,722	0	359,028
WATER SUPPLY					
REGIONAL & LOCAL WATER SYSTEMS	100,464,291	100,393,373	16,532,753	70,918	83,860,621
FARGO WATER TREATMENT PLANT	27,864,069	27,864,069	1,981,866	0	25,882,203
SOUTHWEST PIPELINE PROJECT	86,033,956	86,033,956	18,836,427	0	67,197,529
NORTHWEST AREA WATER SUPPLY	21,241,433	7,241,433	940,425	14,000,000	6,301,008
COMMUNITY WATER LOAN FUND - BND	15,000,000	15,000,000	5,000,000	0	10,000,000
WESTERN AREA WATER SUPPLY	79,000,000	40,000,000	0	39,000,000	40,000,000
RED RIVER VALLEY WATER SUPPLY	11,000,000	3,295,000	375,034	7,705,000	2,919,966
IRRIGATION DEVELOPMENT	5,493,548	949,869	342,500	4,543,679	607,369
GENERAL WATER MANAGEMENT					
OBLIGATED	30,350,611	30,350,611	5,669,543	0	24,681,068
UNOBLIGATED	38,617,297			38,617,297	0
DEVILS LAKE					
BASIN DEVELOPMENT	68,085	68,085	7,107	0	60,978
OUTLET	872,403	872,403	1,601	0	870,802
OUTLET OPERATIONS	15,140,805	15,140,805	3,195,282	0	11,945,523
DL TOLNA COULEE DIVIDE	102,975	102,975	0	0	102,975
DL EAST END OUTLET	2,774,011	2,774,011	0	0	2,774,011
DL GRAVITY OUTFLOW CHANNEL	13,686,839	13,686,839	0	0	13,686,839
DL STANDPIPE REPAIR	1,300,000	1,300,000	342,595	0	957,405
WEATHER MODIFICATIONS	805,202	805,202	242,940	0	562,262
TOTALS	705,894,092	461,871,686	68,980,890	244,022,406	392,890,797

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND
2013-2015 Biennium**

PROGRAM OBLIGATION

Approved SWC By	No	Dept	Sponsor	Project	Initial Approved Date	Total Approved	Total Payments	Jul-14 Balance
Flood Control:								
SB 2020	1928	5000	City of Fargo	Fargo Flood Control Project	6/23/2009	36,740,340	9,434,225	27,306,115
	1771	5000	City of Grafton	Grafton Flood Control Project	3/11/2010	7,175,000	0	7,175,000
SB 2371	1974-06	5000	Souris River Joint WRC	Mouse River Enhanced Flood - pd to SRJWRB	12/9/2011	16,257	16,257	0
	1974-06	5000	Souris River Joint WRC	Mouse River Enhanced Flood - pd to SRJWRB	3/17/2014	200,000	7,246	192,754
SB 2371	1974-08	5000	Souris River Joint WRC	Mouse River Reconnaissance Study to Meet Fed Guid	2/15/2013	10,603	9,793	809
	1974-09	5000	33296.25	4th Ave NE & Napa Valley/Forest Rd Flood Improve	10/7/2013	3,830,400	0	3,830,400
	1974-10	5000	Souris River Joint WRC	International Joint Commission Study Board	5/29/2014	302,500	0	302,500
SB 2371	1992-01	5000	Burleigh Co. WRD	Burleigh County's Tavis Road Storm Water Pump Stati	6/13/2012	1,282,400	0	1,282,400
SB 2371	1344	5000	Valley City	Sheyenne River Valley Flood Control Project	6/19/2013	350,625	0	350,625
	1504-01	5000	Valley City	Permanent Flood Protection Project	5/29/2014	10,032,235	0	10,032,235
	1504-02	5000	Valley City	Permanent Flood Protection Project (LOAN)	5/29/2014	2,508,059	0	2,508,059
SB 2371	1344	5000	City of Lisbon	Sheyenne River Valley Flood Control Project	6/19/2013	700,650	0	700,650
	1991-01	5000	City of Lisbon	Permanent Flood Protection Project	5/29/2014	1,238,698	0	1,238,698
	1991-02	5000	City of Lisbon	Permanent Flood Protection Project (LOAN)	5/29/2014	536,302	0	536,302
SB 2371	1344	5000	Fort Ransom	Sheyenne River Valley Flood Control Project	6/19/2013	225,000	0	225,000
	1997	5000	Rice Lake Recreation C	Renwick Dam Rehabilitation	6/13/2012	2,842,200	0	2,842,200
	849	5000	Pembina Co. WRD	Renwick Dam Rehabilitation	6/26/2014	1,281,376	263,419	1,017,957
Subtotal Flood Control						69,272,645	9,730,941	59,541,704
Floodway Property Acquisitions:								
SB 2371	1993-05	5000	City of Minot	Minot Phase 1 - Floodway Acquisitions	1/27/2012	9,276,071	2,005,094	7,270,977
	1993-05	5000	City of Minot	Minot Phase 2 - Floodway Acquisitions	10/7/2013	24,408,258	0	24,408,258
SB 2371	1523-05	5000	Ward County	Ward County Phase 1, 2 & 3 - Floodway Acquisitions	1/27/2012	9,525,664	1,985,054	7,540,610
SB 2371	1523-02	5000	Ward County	Chaparelle Highwater Berm Project	2/27/2013	172,505	172,505	0
SB 2371	1504-05	5000	Valley City	Valley City Phase 1 - Floodway Acquisitions	7/23/2013	1,822,598	1,089,502	733,096
SB 2371	1992-05	5000	Burleigh Co. WRD	Burleigh Co. Phase 1 - Floodway Acquisitions	3/7/2012	442,304	0	442,304
SB 2371	2000-05	5000	City of Sawyer	Sawyer Phase 1 - Floodway Acquisitions	6/13/2012	184,260	0	184,260
	1991-05	5000	City of Lisbon	Lisbon - Floodway Acquisition	9/27/2013	888,750	529,722	359,028
Subtotal Floodway Property Acquisitions						46,720,410	5,781,877	40,938,533
MRI Water Supply Advances:								
SWC	2373-24	5000	Garrison Diversion	Traill Regional Rural Water (Phase III)	8/18/2009	1,368,000	1,205,019	162,981
MRI Water Supply Grants:								
	2373-32	5000	North Central Rural We	NCRW (Berthold-Carpio)	6/21/2011	2,807,902	2,807,902	0
	2373-33	5000	Stutsman Rural WRD	Stutsman Rural Water System - Phase II	3/17/2014	3,795,692	3,466,603	329,089
	2373-35	5000	Grand Forks - Traill WF	Grand Forks - Traill County WRD	6/13/2012	2,725,415	1,379,430	1,345,984
	2373-36	5000	Stutsman Rural WRD	Stutsman Rural Water System - Phase IIB, III	2/27/2013	10,000,000	3,685,854	6,314,146
	2373-37	5000	North Central Rural We	NCRW (Plaza)	2/27/2013	299,300	265,959	33,341
	1782-01	5000	McLean-Sheridan WRC	Blue & Brush Lakes Expansion Project	5/29/2014	0	0	0
	2373-38	5000	Stutsman Rural WRD	Kidder Co & Carrington Area Expansion	7/23/2013	1,207,000	0	1,207,000
	2373-39	5000	North Central Rural We	Carpio Berthold Phase 2	5/29/2014	3,050,000	58,697	2,991,303
	2373-40	5000	South Central Regional	Kidder County Expansion	5/29/2014	0	0	0
	2373-41	5000	North Central Rural We	Granville-Deering Area	5/29/2014	4,980,000	38,625	4,941,375
Subtotal MRI Water Supply						30,233,309	12,908,090	17,325,218
Water Supply Grants:								
	2050-01	5000	Missouri West Water S	South Mandan	3/17/2014	522,000	0	522,000
	2050-02	5000	Grand Forks Traill WRI	Improvements	10/7/2013	3,390,000	139,948	3,250,052
	2050-03	5000	Northeast Regional WC	Langdon RWD - ABM Pipeline Phase 1	10/7/2013	1,040,000	106,988	933,012
	2050-04	5000	Northeast Regional WC	Langdon RWD - North Valley Nekoma	10/7/2013	800,000	60,125	739,875
	2050-05	5000	Northeast Regional WC	North Valley WD - ABM Pipeline Phase 1	10/7/2013	565,000	108,282	456,718
	2050-06	5000	Northeast Regional WC	North Valley WD - 93 Street	10/7/2013	1,290,000	113,538	1,176,463
	2050-07	5000	Northeast Regional WC	North Valley WD - Rural Expansion	5/29/2014	1,800,000	63,750	1,736,250
	2050-08	5000	Walsh RWD	Ground Storage	10/7/2013	684,000	153,686	530,314
	2050-09	5000	City of Park River	Water Tower	10/7/2013	1,350,000	72,323	1,277,678
	2050-10	5000	City of Surrey	Water Supply Improvements	10/7/2013	1,500,000	176,074	1,323,926
	2050-11	5000	Cass RWD	Phase 2 Plant Improvements	10/7/2013	2,600,000	0	2,600,000
	2050-12	5000	Central Plains WD	Improvements	10/7/2013	1,450,000	0	1,450,000
	2050-13	5000	City of Mandan	New Raw Water Intake	10/7/2013	1,270,000	0	1,270,000
	2050-14	5000	City of Mandan	Water Treatment Plant Improvements	10/7/2013	726,000	180,435	545,565
	2050-15	5000	City of Washburn	New Raw Water Intake	10/7/2013	1,795,000	0	1,795,000
	2050-16	5000	Tri-County WRD	Improvements	10/7/2013	650,000	0	650,000
	2050-17	5000	Barnes Rural WRD	Improvements	10/7/2013	4,600,000	0	4,600,000
	2050-18	5000	City of Grafton	Water Treatment Plant Phase 3	10/7/2013	2,600,000	0	2,600,000
	2050-19	5000	City of Grand Forks	Water Treatment Plant Improvements	10/7/2013	4,990,000	215,543	4,774,457
	2050-20	5000	City of Dickinson	Capital Infrastructure	2/27/2014	18,338,065	0	18,338,065
	2050-21	5000	Watford City	Capital Infrastructure	2/27/2014	6,700,000	2,079,372	4,620,628
	2050-22	5000	City of Williston	Capital Infrastructure	2/27/2014	7,000,000	0	7,000,000
	2050-23	5000	Greater Ramsey WRD	SW Nelson County Expansion	3/17/2014	4,500,000	154,599	4,345,401
Subtotal State Water Supply						70,160,065	3,624,662	66,535,403
	1984-02	5000	City of Fargo	Fargo Water Treatment Plant	3/17/2014	27,864,069	1,981,866	25,882,203
	1736-05	8000	SWPP	Southwest Pipeline Project	7/1/2013	86,033,956	18,836,427	67,197,529
	2374	9000	NAWS	Northwest Area Water Supply	7/1/2013	7,241,433	940,425	6,301,008
	2044-01	5000	Bank of North Dakota	Community Water Facility Fund	10/7/2013	15,000,000	5,000,000	10,000,000
	1973-02	5000	Bank of North Dakota	Western Area Water Supply - (GRANT)	10/7/2013	20,000,000	0	20,000,000
	1973-03	5000	Bank of North Dakota	Western Area Water Supply - (LOAN)	10/7/2013	20,000,000	0	20,000,000
	325-101	5000	RRWSP	Red River Valley Water Supply - CH2M Hill	2/27/2014	375,000	375,000	0
	325-102	5000	RRWSP	Red River Valley Water Supply - Intake Design Study	5/29/2014	2,500,000	34	2,499,966
	325-103	5000	RRWSP	Garrison Diversion - Easements	5/29/2014	420,000	0	420,000
Subtotal Water Supply						179,434,458	27,133,762	152,300,706

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND
2013-2015 Biennium**

PROGRAM OBLIGATION

Approved SWC By	No	Dept	Sponsor	Project	Initial Approved Date	Total Approved	Total Payments	Jul-14 Balance
Irrigation Development:								
SWC	222	5000	Buford Trenton Irrigatio	Buford Trenton Irrigation Transmission Line Reroute	7/23/2013	350,000	297,500	52,500
SWC	1389	5000	Bank of ND	BND AgPace Program	10/23/2001	25,966	20,000	5,966
SWC	1389	5000	Bank of ND	BND AgPace Program	12/13/2013	200,000	0	200,000
SWC	AOC/IRA	5000	ND Irrigation Assoc	ND Irrigation Association	7/1/2013	100,000	25,000	75,000
SWC	1968	5000	Garrison Diversion	2009-11 McClusky Canal Mile Marker 7.5 Irrigation Pr	6/1/2010	17,582	0	17,582
SWC	1968	5000	Garrison Diversion	McClusky Canal Mile Marker 10 & 49 Irrigation Project	3/17/2014	256,321	0	256,321
Subtotal Irrigation Development						949,869	342,500	607,369
General Water Management								
Hydrologic Investigations:						900,000		
SWC	1400/13	3000	Houston Engineering	Houston Engineering Water Permit Application Review	11/7/2011	1,975	1,975	0
SWC	1400/14	3000	Houston Engineering	Houston Engineering Water Permit Application Review	11/29/2012	10,910	3,991	6,919
SWC	1400	3000	Gordon Sturgeon	Consultant Services	3/23/2013	39,200	39,200	0
SWC	1400	3000	Gordon Sturgeon	Consultant Services	4/16/2014	24,000	16,800	7,200
SE	XXX	3000	Manikowski Well Drillin	Manikowski Well Drilling Inc.	3/20/2014	12,850	12,850	0
	862/859	3000	Arietta Herman	Arietta Herman - Well Monitor	3/13/2014	2,008	2,008	0
	862	3000	Lori Bjorgen	Lori Bjorgen - Well Monitor	3/13/2014	224	224	0
	967	3000	Holly Messmer - McDai	Holly Messmer - McDaniel - Well Monitor	4/19/2012	0	0	0
	1690	3000	Holly Messmer - McDai	Holly Messmer - McDaniel - Well Monitor	4/19/2012	936	936	0
	1703	3000	Thor Brown	Thor Brown - Well Monitor	3/27/2012	2,645	2,645	0
	1707	3000	Thor Brown	Thor Brown - Well Monitor	4/26/2011	2,222	2,222	0
	1761	3000	Gloria Roth	Gloria Roth - Well Monitor	4/19/2013	690	690	0
	1761	3000	Fran Dobits	Fran Dobits - Well Monitor	6/1/2011	1,166	1,165	0
	2041	3000	U. S. Geological Surve	Conversion of 17 groundwater recorder wells to real-ti	7/16/2013	34,000	34,000	0
	1395	3000	U. S. Geological Surve	Investigations of Water Resources in North Dakota	9/25/2013	491,275	239,386	251,889
	1395D	3000	U. S. Geological Surve	Eaton Irrigation Project on the Souris River	7/13/2012	15,300	0	15,300
Hydrologic Investigations Obligations Subtotal						639,401	358,093	281,308
Remaining Hydrologic Investigations Authority						260,599		
Hydrologic Investigations Authority Less Payments								
General Projects Obligated						25,057,518	918,357	24,139,160
General Projects Completed						4,393,094	4,393,094	0
Subtotal General Water Management						30,350,611	5,669,543	24,681,068
Devils Lake Basin Development:								
SWC	416-01	5000	DLJWRB	DL Joint WRB Manager	7/1/2013	60,000	0	60,000
SWC	416-05	2000	Joe Belford	DL Downstream Acceptance	7/1/2013	8,085	7,107	978
SWC	416-07	5000	Multiple	Devils Lake Outlet	7/1/2013	872,403	1,601	870,802
SWC	416-10	4700	Operations	Devils Lake Outlet Operations	7/1/2013	15,140,805	3,195,282	11,945,523
SWC	416-13	5000	Multiple	DL Tolna Coulee Divide	7/1/2013	102,975	0	102,975
SWC	416-15	5000	Multiple	DL East End Outlet	7/1/2013	2,774,011	0	2,774,011
SWC	416-17	5000	Multiple	DL Emergency Gravity Outflow Channel	9/21/2013	13,686,839	0	13,686,839
SWC	416-19	5000	Multiple	DL Standpipe Repairs	12/13/2013	1,300,000	342,595	957,405
Devils Lake Subtotal						33,945,118	3,546,584	30,398,534
SWC		7600		Weather Modification	7/1/2013	805,202	242,940	562,262
TOTAL						461,871,686	68,980,890	392,890,797

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND
2013-2015 Biennium
Resources Trust Fund

GENERAL PROJECT OBLIGATIONS

Approved SWC By	No	Dept	Approved Biennium	Sponsor	Project	Initial Approved Date	Total Approved	Total Payments	Jul-14 Balance	
HB	1009	1986	5000	2013-15	USDA-APHIS,ND Dept Agric	USDA Wildlife	8/20/2013	250,000	120,829	129,171
HB	2305	1963	5000	2009-11	Emmons County WRD	Beaver Bay Embankment Feasibility Study	8/10/2009	53,644	35,566	18,078
SB	2020	1131	5000	2009-11	Nelson Co. WRD	Flood Related Water Projects	6/1/2011	55,455	0	55,455
SE	1967	5000	2009-11	Grand Forks Co. WRD	Grand Forks County Legal Drain No. 55 2010 Contru	11/30/2010	9,652	0	9,652	
SE	1301	5000	2009-11	City of Lidgerwood	City of Lidgerwood Engineering & Feasibility Study for	2/4/2011	15,850	0	15,850	
SE	1607	5000	2011-13	Ward Co. WRD	Flood Inundation Mapping of Areas Along Souris & D	6/15/2011	13,011	0	13,011	
SE	1301	5000	2011-13	City of Wahpeton	City of Wahpeton Water Reuse Feasibility Study/Rich	9/8/2011	2,500	0	2,500	
SE	391	5000	2011-13	Sargent Co WRD	Sargent Co WRD, Silver Lake Dam Emergency Repa	10/12/2011	2,800	0	2,800	
SE	1312	5000	2011-13	Walsh Co. WRD	Skyrud Dam 2011 EAP	12/15/2011	10,000	0	10,000	
SE	1312	5000	2011-13	Walsh Co. WRD	Union Dam 2011 EAP	12/15/2011	10,000	0	10,000	
SE	1998	5000	2011-13	Grand Forks Co. WRD	Upper Turtle River Dam #1 2012 EAP	6/28/2012	10,000	0	10,000	
SE	1303	5000	2011-13	Sargent Co WRD	Shortfoot Creek Preliminary Soils Analysis & Hydrauli	6/29/2012	24,861	0	24,861	
SE	2002	5000	2011-13	Grand Forks Co. WRD	Trutle River Dam #4 2012 EAP	6/29/2012	10,000	0	10,000	
SE	2005	5000	2011-13	Grand Forks Co. WRD	Turtle River Dam #8 2012 EAP	6/29/2012	10,000	0	10,000	
SE	2008	5000	2011-13	City of Mapleton	Mapleton Flood Control Levee Project	6/29/2012	24,410	0	24,410	
SE	AOC/RRBC	5000	2011-13	Red River Basin Commission	Stream Gaging & Precipitation Network Study in the F	9/14/2012	20,000	0	20,000	
SE	1991	5000	2011-13	City of Lisbon	Shyenne River Snagging & Clearing Project	2/12/2013	5,000	0	5,000	
SE	1461	5000	2011-13	Pembina Co. WRD	O'Hara Bridge Bank Stabilization	4/26/2013	24,633	0	24,633	
SE	1289	5000	2011-13	McKenzie Co. Weed Control I	Control of Noxious Weeds on Sovereign Lands	6/11/2013	24,810	0	24,810	
SE	1174	5000	2013-15	Richland Co. WRD	Drain No. 31 Reconstruction Project	8/30/2013	32,393	0	32,393	
SE	1640	5000	2013-15	U.S. Geological Survey	Maintenance of gaging station on Missouri River belo	9/25/2013	8,710	0	8,710	
SE	1296	5000	2013-15	Pembina Co. WRD	Bathgate-Hamilton & Carlisle Watershed Study	10/17/2013	38,500	0	38,500	
SE	1987	5000	2013-15	City of Burlington	Interim Levee Project	11/22/2013	49,000	0	49,000	
SE	1291	5000	2013-15	Mercer County WRD	Antelope Creek Snagging & Clearing Project	3/27/2014	21,714	0	21,714	
SE	867-01	5000	2013-15	NDSU	NDSU - Water sampling Dr. Xinhua Jia Dept of Ag	4/22/2014	5,000	0	5,000	
SE	507	5000	2013-15	Grant County WRD	Raleigh Dam Emergency Action Plan	7/1/2014	12,000	0	12,000	
SWC	620	5000	2007-09	Lower Heart WRD	Mandan Flood Control Protective Works (Levee)	9/29/2008	125,396	0	125,396	
SWC	1921	5000	2007-09	Morton Co. WRD	Square Butte Dam No. 6/(Harmon Lake) Recreation I	3/23/2009	821,058	32,616	788,442	
SWC	1638	5000	2009-11	Multiple	Red River Basin Non-NRCS Rural/Farmstead Ring D	6/23/2009	226,364	0	226,364	
SWC	1069	5000	2009-11	North Cass Co. WRD	Cass County Drain No. 13 Improvement Reconstructi	8/18/2009	122,224	0	122,224	
SWC	1088	5000	2009-11	Maple River WRD	Cass County Drain No. 37 Improvement Recon	8/18/2009	92,668	0	92,668	
SWC	1960	5000	2009-11	Ward Co. WRD	Puppy Dog Coulee Flood Control Diversion Ditch Con	8/18/2009	796,976	0	796,976	
SWC	322	5000	2009-11	ND Water Education Foundat	ND Water: A Century of Challenge	2/22/2010	36,800	0	36,800	
SWC	1244	5000	2009-11	Traill Co. WRD	Traill Co. Drain No. 27 (Moen) Reconstruction & Exte	3/11/2010	336,491	0	336,491	
SWC	1577	5000	2009-11	Mercer Co. WRD & City of Hz	Hazen Flood Control Levee (1517) & FEMA Accredit	3/11/2010	184,984	0	184,984	
SWC	281	5000	2009-11	Three Affiliated Tribes	Three Affiliated Tribes/Fort Berthold Irrigation Study	10/26/2010	37,500	0	37,500	
SWC	646	5000	2009-11	City of Fargo	Christine Dam Recreation Retrofit Project	10/26/2010	184,950	0	184,950	
SWC	646	5000	2009-11	City of Fargo	Hickson Dam Recreation Retrofit Project	10/26/2010	44,280	0	44,280	
SWC	347	5000	2009-11	City of Velva	City of Velva's Flood Control Levee System Certificat	3/28/2011	102,000	0	102,000	
SWC	1161	5000	2009-11	Pembina Co. WRD	Drain 55 Improvement Reconstruction	3/28/2011	13,846	0	13,846	
SWC	1245	5000	2009-11	Traill Co. WRD	Traill Co. Drain No. 28 Extension & Improvement Prc	3/28/2011	336,007	0	336,007	
SWC	1969	5000	2009-11	Walsh Co. WRD	Walsh Co. Construction of Legal Assessment Drain #	3/28/2011	38,154	0	38,154	
SWC	1970	5000	2009-11	Walsh Co. WRD	Walsh Co. Construction of Legal Assessment Drain #	3/28/2011	39,115	0	39,115	
SWC	1101	5000	2011-13	Dickey Co. WRD	Yorktown-Maple Drainage Improvement Dist No. 3	9/21/2011	354,500	0	354,500	
SWC	1101	5000	2011-13	Dickey-Sargent Co WRD	Riverdale Township Improvement District #2 - Dickey	9/21/2011	500,000	0	500,000	
SWC	1219	5000	2011-13	Sargent Co WRD	City of Forman Floodwater Outlet	9/21/2011	31,472	0	31,472	
SWC	1252	5000	2011-13	Walsh Co. WRD	Walsh Co. Reconstruction Drain No. 97	9/21/2011	24,933	0	24,933	
SWC	1705	5000	2011-13	Red River Joint Water Resou	Red River Joint WRD Watershed Feasibility Study - F	9/21/2011	60,000	0	60,000	
SWC	1975	5000	2011-13	Walsh Co. WRD	Walsh Co. Drain No. 31 Reconstruction Project	9/21/2011	37,742	0	37,742	
SWC	1977	5000	2011-13	Dickey-Sargent Co WRD	Jackson Township Improvement Dist. #1	9/21/2011	500,000	0	500,000	
SWC	829	5000	2011-13	Rush River WRD	Rush River WRD Berlin's Township Improvement Dis	10/19/2011	163,695	62,378	101,317	
SWC	1224	5000	2011-13	Traill Co. WRD	Preston Floodway Reconstruction Project	10/19/2011	208,570	0	208,570	
SWC	1978	5000	2011-13	Richland & Sargent Joint WRI	Richland & Sargent WRD RS Legal Drain No. 1 Exter	10/19/2011	245,250	0	245,250	
SWC	1918	5000	2001-13	Maple River WRD	Normanna Township Improvement District No. 71	12/9/2011	287,900	0	287,900	
SWC	1983	5000	2011-13	City of Harwood	City of Harwood Engineering Feasibility Study	12/9/2011	62,500	0	62,500	
SWC	1227	5000	2011-13	Traill Co. WRD	Mergenthal Drain No. 5 Reconstruction	3/7/2012	84,670	0	84,670	
SWC	1396	5000	2011-13	U.S. Geological Survey	(USGS) Missouri River Geomorphic Assessment	3/7/2012	90,000	30,000	60,000	
SWC	1989	5000	2011-13	Barnes Co WRD	Hobart Lake Outlet Project	3/7/2012	266,100	0	266,100	
SWC	1990	5000	2011-13	Mercer Co. WRD	Lake Shore Estates High Flow Diversion Project	3/7/2012	43,821	0	43,821	
SWC	227	5000	2011-13	Eaton Flood Irrigation District	District's Mouse River Riverbank Stabilization Project	6/13/2012	120,615	0	120,615	
SWC	1063	5000	2011-13	Rush River WRD	Amenia Township Improvement District Drain No. 74	6/13/2012	459,350	0	459,350	
SWC	1344	5000	2009-11	Southeast Cass WRD	Shyenne Diversion Exterior Pump Station	6/13/2012	3,751	0	3,751	
SWC	2007	5000	2011-13	Maple River WRD	Pontiac Township Improvement District No. 73 Projec	6/13/2012	500,000	0	500,000	
SWC	2010	5000	2011-13	Barnes Co WRD	Meadow Lake Outlet	6/13/2012	500,000	0	500,000	
SWC	1878-02	5000	2011-13	Maple River WRD	Upper Maple River Dam Environmental Assessment	6/13/2012	112,500	0	112,500	
SWC	1992	5000	2011-13	Burleigh Co. WRD	Bismarck Flood Control Channel Project	9/17/2012	187,500	0	187,500	
SWC	2009-02	5000	2011-13	Southeast Cass WRD	Recertification of the Horace to West Fargo Diversior	9/17/2012	72,600	42,835	29,765	
SWC	1401	5000	2009-11	Pembina Co. WRD	International Boundary Roadway Dike Pembina	9/27/2012	331,799	70,767	261,032	
SWC	240	5000	2011-13	Eddy County WRD	Warwick Dam Repair Project	12/7/2012	110,150	0	110,150	
SWC	1705	5000	2011-13	Red River Joint Water Resou	Red River Basin Distributed Plan Study	12/7/2012	560,000	0	560,000	
SWC	2019	5000	2011-13	Valley City	Shyenne River Snagging & Clearing Project	12/7/2012	75,000	0	75,000	
SWC	346	5000	2011-13	Williams County WRD	Epping Dam Evaluation Project	2/27/2013	66,200	0	66,200	
SWC	1135	5000	2011-13	Pembina Co. WRD	Drain #4 Reconstruction Project	6/19/2013	221,628	0	221,628	
SWC	1207	5000	2011-13	Richland Co. WRD	Drain #65 Extension Project	6/19/2013	123,200	99,063	24,137	
SWC	1312	5000	2011-13	Walsh Co. WRD	Forest River Flood Control Feasibility Study	6/19/2013	79,956	0	79,956	
SWC	1438	5000	2011-13	Cavalier County WRD	Mulberry Creek Phase IV Reconstruction Project	6/19/2013	324,010	0	324,010	
SWC	1992	5000	2011-13	Burleigh Co. WRD	Burnt Creek Flood Restoration Project	6/19/2013	87,805	0	87,805	
SWC	2022	5000	2011-13	Pembina Co. WRD	Drain #73 Project	6/19/2013	350,400	0	350,400	
SWC	AOC/RRBC	5000	2013-15	Red River Basin Commission	Red River Basin Commission Contractor	7/1/2013	200,000	100,000	100,000	
SWC	PS/WRD/MRJ	5000	2013-15	Missouri River Joint WRB	Missouri River Joint Water Board (MRRIC) T. FLECK	7/1/2013	40,000	19,266	20,734	
SWC	PS/WRD/MRJ	5000	2013-15	Missouri River Joint WRB	Missouri River Joint Water Board, (MRJWB) Start up	7/1/2013	20,000	0	20,000	
SWC	AOC/WEF	5000	2013-15	ND Water Education Foundat	ND Water Magazine	7/1/2013	36,000	9,000	27,000	
SWC	PS/WRD/USRJ	5000	2013-15	Upper Shyenne River Joint W	Upper Shyenne River WRB Administration (USRJW	7/1/2013	12,000	2,876	9,124	
SWC	1859	5000	2013-15	ND Dept of Health	NonPoint Source Pollution, Section 319	8/20/2013	200,000	143,287	56,713	
SWC	1270	5000	2013-15	Burleigh Co. WRD	Apple Creek Industrial Park Levee Feasibility Study	10/7/2013	65,180	0	65,180	

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND
2013-2015 Biennium
Resources Trust Fund**

COMPLETED GENERAL PROJECTS

Approver SWC By No	Dept	Approved Biennium	Sponsor	Project	Initial Approved Date	Total Approved	Total Payments	Jul-14 Balance
SE 1577	5000	2011-13	Burleigh Co. WRD	Fox Island 2012 Flood Hazard Mitigation Evaluation Str	5/22/2012	23,900	23,900	0
SE 2003	5000	2011-13	Southeast Cass WRD	Re-Certification of the Horace to West Fargo Diversion	6/29/2012	42,835	42,775	60
SE 1732	5000	2011-13	City of Beulah	Beulah Dam Emergency Action Plan	7/26/2012	20,440	10,440	10,000
SE 2003	5000	2011-13	Southeast Cass WRD	Re-Certification of the West Fargo Diversion Levee Sy:	7/26/2012	45,879	45,879	0
SE 1993	5000	2011-13	Houston Engineering	Minot 100-yr Floodplain Map and Profiles	10/9/2012	10,000	0	10,000
SE 2001	5000	2011-13	Traill Co. WRD	Elm River Diversion Project	10/31/2012	10,423	6,076	4,347
SE 1992	5000	2011-13	Burleigh Co. WRD	Burleigh Co Flood Control Alternatives Assessment	1/30/2013	25,175	16,168	9,007
SE 871	5000	2011-13	Pembina Co. WRD	Pembina Snagging & Clearing Project	6/14/2013	7,500	7,500	0
SE 1395	5000	2013-15	U.S. Geological Survey	Operation & maintenance of seven water level monitori	7/16/2013	17,500	17,500	0
SE 2045	5000	2013-15	NCRS & Corps St. Louis	Joint LiDAR Collection	9/12/2013	40,000	40,000	0
SE 1289	5000	2013-15	McKenzie Co. Weed Cor	Control of Noxious Weeds on Sovereign Lands	9/20/2013	10,496	9,779	717
SE 1244	5000	2013-15	Traill Co. WRD	Traill Co. Drain No. 27 (Moen) Lateral Channel Improv	9/27/2013	29,914	23,723	6,191
SE 1814	5000	2013-15	Richland Co. WRD	Wild Rice River Snagging & Clearing - Reach 3	10/17/2013	49,500	48,493	1,007
SE 1814	5000	2013-15	Richland Co. WRD	Wild Rice River Snagging & Clearing - Reach 2	10/17/2013	49,500	49,375	125
SE 1814	5000	2013-15	Richland Co. WRD	Wild Rice River Snagging & Clearing - Reach 4	12/13/2013	20,000	20,000	0
SE BSC	5000	2013-15	Bismarck State College	2014 ND Water Quality Monitoring Conference	2/24/2014	1,000	1,000	0
SE AOC/WEF	5000	2013-15	ND Water Education Fou	2014 Summer Water Tours Sponsorshi	3/5/2014	2,500	2,500	0
SE 1403	5000	2013-15	ND Water Resources Ins	Institute Fellowship Program 2014-15	3/20/2014	13,850	13,850	0
SE 1667	5000	2013-15	Traill Co. WRD	Goose River Snagging & Clearing Project	4/23/2014	46,750	46,750	0
SE 1311	5000	2013-15	Traill Co. WRD	Buffalo Coulee Snagging & Clearing Project	5/27/2014	25,000	23,363	1,637
SE NDAWN	5000	2013-15	NDSU	ND Agricultural Weather Network	4/15/214	1,550	1,550	0
SWC 928/988/1508	5000	2011-13	SE Cass WRD	Wild Rice, Bois de Sioux, Antelope Creek Retention Str	7/21/2008	60,000	30,415	29,585
SWC 1792	5000	2009-11	Southeast Cass WRD	SE Cass Wild Rice River Dam Study Phase II	12/11/2009	130,000	130,000	0
SWC 1966	5000	2009-11	City of Oxbow	City of Oxbow Emergency Flood Fighting Barrier Syste	6/1/2010	188,400	188,400	0
SWC 416-18	5000	2011-13	ND Game & Fish	DL Johnson Farms Water Storage Site	6/10/2011	125,000	4,316	120,685
SWC 1344	5000	2011-13	Southeast Cass WRD	Southeast Cass Sheyenne River Diversion Low-Flow C	6/14/2011	716,609	33,535	683,074
SWC 980	5000	2011-13	Maple River WRD	Maple River Watershed Food Water Retention Study/ I	9/21/2011	0	0	0
SWC 1219	5000	2011-13	Sargent Co WRD	District Drain No. 4 Reconstruction Project	9/21/2011	125,500	86,723	38,777
SWC CON/WILL-CA	5000	2011-13	Garrison Diversion	Will/Carlson Consultant	10/17/2011	26,174	0	26,174
SWC 1138	5000	2011-13	Pembina Co. WRD	Drain No. 8 Reconstruction Project	3/7/2012	12,215	5,157	7,058
SWC PS/WRD/JAM	5000	2011-13	James River Joint WRD	James River Engineering Feasibility Study Phase 1	3/7/2012	29,570	29,490	80
SWC 829	5000	2011-13	Rush River WRD	Rush River Watershed Retention Plan	6/13/2012	0	0	0
SWC 1344	5000	2011-13	Southeast Cass WRD	Sheyenne Diversion Phase VI - Weir Improvements	6/13/2012	225,050	224,192	858
SWC 1344	5000	2009-11	Southeast Cass WRD	Horace Diversion Channel Site A (Section 7 - Phase V)	6/13/2012	1,812,822	1,810,744	2,078
SWC 1806-02	5000	2011-13	City of Argusville	Re-Certification of the City of Argusville Flood Control L	6/13/2012	84,164	20,101	64,063
SWC 228	5000	2011-13	U.S. Geological Survey	Additional USGS gage Missouri River- ANNUAL	9/17/2012	8,500	8,500	0
SWC 2012	5000	2011-13	Southeast Cass WRD	Lower Sheyenne River Watershed Retention Plan	9/17/2012	80,000	80,000	0
SWC 2013	5000	2011-13	Richland-Cass Joint WRI	Wild Rice River Watershed Retention Plan	9/17/2012	90,000	90,000	0
SWC 2014	5000	2011-13	Traill Co. WRD	Elm River Watershed Retention Plan	9/17/2012	75,000	62,371	12,629
SWC 2003-02	5000	2011-13	Southeast Cass WRD	Re-Certification of the West Fargo Diversion Levee Sy:	9/17/2012	91,400	91,400	0
SWC 1996	5000	2011-13	Traill Co. WRD	Drain #62 - Wold Drain Project	9/17/2012	112,400	108,717	3,683
SWC 1069	5000	2011-13	North Cass - Rush River	Drain #13 Channel Improvements	9/27/2012	217,000	217,000	0
SWC 1303	5000	2011-13	Sargent Co WRD	Frenier Dam Improvement Project	12/7/2012	158,373	112,027	46,346
SWC 1523	5000	2011-13	Ward Co. WRD	Souris River Minot to Burlington Snagging & Clearing	12/7/2012	109,000	109,000	0
SWC 2020	5000	2011-13	Minot Park District	Souris Valley Golf Course Bank Stabilization	12/7/2012	335,937	205,404	130,533
SWC 1444	5000	2011-13	City of Pembina	US Army Corps of Eng Section 408 Review City Flood	9/19/2013	73,200	62,833	10,367
SWC 1523	5000	2011-13	Ward Co. WRD	Countryside Villas/Whispering Meadows Drainage Imp	2/21/2014	157,211	67,287	89,924
SWC 568	5000	2013-15	Southeast Cass WRD	Sheyenne River Snagging & Clearing Project Reaches	3/13/2014	165,000	164,861	139
TOTAL						5,702,237	4,393,094	1,309,143

RESOLUTION NO. 14-9-528

NORTH DAKOTA STATE WATER COMMISSION

**RESOLUTION AUTHORIZING DEFEASANCE OF
WATER DEVELOPMENT REVENUE REFUNDING BONDS
SOUTHWEST PIPELINE PROJECT
2007 SERIES B**

WHEREAS, the North Dakota State Water Commission (the "Commission") has issued its Water Development Revenue Refunding Bonds, 2007 Series B, dated June 27, 2007, in the original principal amount of \$13,670,000, of which \$11,085,000, maturing on July 1 in the years 2015 through 2032 (the "Defeased Bonds"), are subject to prepayment and redemption on July 1, 2017, at a price equal to 100% of par plus interest accrued to the redemption date; and

WHEREAS, Section 3.02 the General Bond Resolution adopted by the Commission May 22, 1997, as amended from time to time (the "General Bond Resolution"), provides that Bonds of any Series subject to redemption in whole or in part prior to maturity at the option of the Commission pursuant to the provision of a Series Resolution shall be redeemed by the Trustee at the direction of the Commission; and

WHEREAS, Section 10.01 the General Bond Resolution provides that the pledge and lien of the Trust Estate shall cease, determine and become void in regard to any Series of Bonds defeased by delivering to the Trustee a written instrument executed by the Commission under its official seal and expressed to be irrevocable, authorizing the Trustee to give notice of redemption of certain Bonds and depositing with the Trustee securities of the United States maturing as to principal and interest in such amounts and at such times as will ensure sufficient moneys to pay the interest on and principal of such Bonds and all necessary and proper fees and expenses of the Trustee; and

WHEREAS, in furtherance of the above stated objectives and pursuant to the General Bond Resolution, the Commission has caused to be prepared and filed in the office of the Commission an Escrow Agreement, providing for the payment and redemption of the Defeased Bonds,

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS:

1. The Commission hereby exercises its option to defease the Defeased Bonds by depositing in escrow with the Trustee sufficient funds to provide for the purchase of certain noncallable direct obligations of the United States of America maturing at such times and in such amounts to provide funds sufficient to pay principal of and interest on the Defeased Bonds to July 1, 2017, and redeem the outstanding principal of the Defeased Bonds on July 1, 2017.
2. The Chairman or Secretary is authorized and directed to execute and deliver the Escrow Agreement for and in the name of the Commission in substantially the form on file in the Commission office with such changes, insertions or omissions therein as are approved by the

officer executing the same upon the advice of counsel to the Commission, the execution and delivery thereof to constitute conclusive evidence of the approval of any such changes.

3. All acts of the officers, agents and employees of the Commission which are in conformity with the purpose and intent of the this Resolution and in furtherance of the discharge of the Defeased Bonds, shall be and the same hereby are in all respects approved, ratified and confirmed.

IN WITNESS WHEREOF, this Resolution has been signed this 15th day of September, 2014.

**NORTH DAKOTA STATE WATER
COMMISSION**



Jack Dalrymple, Governor
Chairman

ATTEST:



Todd Sando, State Engineer
Secretary

(S E A L)



CERTIFICATION

I hereby certify that the Resolution to which this Certification is affixed is a true copy of the original adopted by the North Dakota State Water Commission at a regular meeting or properly noticed special meeting thereof held in Bismarck, North Dakota, on September 15, 2014, with the motion for adoption of the foregoing made by Commissioner Swenson and seconded by Commissioner Hanson, and the roll call vote on the motion was as follows:

Jack Dalrymple	(“Aye”)	“Nay”	Absent	Abstained
Doug Goehring	(“Aye”)	“Nay”	Absent	Abstained
George Nodland	(“Aye”)	“Nay”	Absent	Abstained
Robert Thompson	(“Aye”)	“Nay”	Absent	Abstained
Douglas Vosper	(“Aye”)	“Nay”	Absent	Abstained
Harley Swenson	(“Aye”)	“Nay”	Absent	Abstained
Larry Hanson	(“Aye”)	“Nay”	Absent	Abstained
Arne Berg	“Aye”	“Nay”	(Absent)	Abstained
Maurice Foley	(“Aye”)	“Nay”	Absent	Abstained



Todd Sando, State Engineer
Secretary



FUNDING PLAN



ND LEGISLATIVE APPROPRIATIONS (\$450 MILLION)

- **2009: \$45 Million** (approved)
- **2011: \$30 Million** (approved)
- **2013: \$100 Million** (approved)
 - HB1020 included legislative intent for the remaining \$275 over four biennium
 - **2015: Request \$68.75** (tentative)
 - **2017: Request \$68.75** (tentative)
 - **2019: Request \$68.75** (tentative)
 - **2021: Request \$68.75** (tentative)

ND LOCAL FUNDING

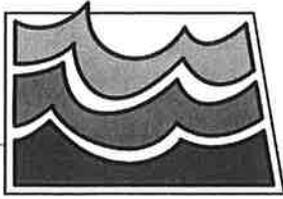
- Two voter-approved, 20-year, ½¢ sales taxes dedicated to flood protection
- Fargo sales tax in 2009 (90% approval) and County sales tax in 2010 (64% approval)
- Taxes jointly raised approximately \$27M in 2013
- Over the life of the taxes, projections estimate collections totaling \$700M (4% growth rate)

FEDERAL FUNDING

- Federally authorized for \$846 Million
- Approximately \$40 Million to date for Planning, Engineering, and Design (PED)

DIVERSION AUTHORITY FUNDING PRIORITIES 2015/17

- Intown Levees
- Oxbow/Bakke/Hickson Ring Levee
- Diversion preconstruction engineering, land acquisition, and construction once conditions are met



North Dakota State Water Commission

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MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM:  Todd S. Sando, P.E., Chief Engineer - Secretary
SUBJECT: SWPP Project Update
DATE: August 26, 2014

Oliver, Mercer, North Dunn (OMND) Regional Service Area

Zap Service Area (SA) Rural Distribution System 7-9C & 7-9D:

Contract 7-9D is closed out. The contract was delayed by 70 days, however no liquidated damages were assessed on this contract. The contractor was eligible for a time extension of 25 days because of weather. The contractor was also very efficient in their work and there was substantial cost savings on the construction management expense. So the liquidated damages for their 70-day delay were forgiven.

The final change order is being prepared for Contract 7-9C. The substantial completion date on this contract was October 1, 2012. The contractor completed the initial 308 contract users on August 29, 2013, which was 332 days late. Liquidated damages for 262 days totaling \$196,500 are being assessed on this contract. This contract work was occurring around the same time as Contract 7-9D and so the 70-day break provided to Contract 7-9D is being considered for Contract 7-9C as well.

Center SA Rural Distribution System 7-9E & 7-9F:

The State Water Commission (SWC), at its October 7, 2013, meeting, awarded Contract 7-9F to Eatherly Constructors, Inc. Executed contract documents have been received. This contract consists of 250 miles of 8" -1½" PVC pipe serving 330 rural water customers. The preconstruction conference for this contract was held on May 2, 2014, and the contractor started construction on June 16, 2014. This contract has an intermediate completion date of September 15, 2014 for a portion of the service area identified in the plans and has a substantial completion date of September 15, 2015, for the entire contract. So far, 20 users have been added through field orders and change orders in this contract. Eleven users have been turned over for service to Southwest Water Authority (SWA).

Contract 7-9E is the west Center SA rural distribution system. This contract includes furnishing and installing approximately 267 miles of 6"-1 ½ " ASTM D2241 gasketed joint pipe; 251 services; road crossings; connections to existing pipelines and other related appurtenances. The SWC at its May 29, 2014, meeting awarded this contract to Swanberg Construction, Valley City, North Dakota. This contract has an intermediate completion date of July 15, 2015 for a portion of the contract consisting of about 44 miles of pipe serving 54 rural customers. The substantial completion date for the remaining contract is November 15, 2015. The contractor has not requested a preconstruction conference yet.

Contract 2-8E/2-8F Dunn Center SA Main Transmission Line (MTL):

Contract 2-8E is the MTL from the OMND WTP to a combination reservoir and booster station north of Halliday (Dunn Center booster station). This contract was awarded on May 21, 2013, to Carstensen Contracting Inc., and the contractor started construction on July 24, 2013. This contract involves furnishing and installing approximately 25 miles of pipe, an above grade booster station with concrete reservoir, PRV/Control vault, road crossings and related appurtenances. All pipe on this contract has been installed. Testing, disinfection and startup of the Dunn Center Booster Pump Station remains to be completed on this contract.

Contract 2-8F is the MTL west of Halliday to west of Killdeer. This contract involves furnishing and installing approximately 40 miles of 16"-6" PVC pipe, connections to existing pipelines, 2 prefabricated steel meter vaults, road crossings and related appurtenances. This contract has two intermediate completion dates. The first intermediate completion date is August 15, 2014, for Bid Schedule 1, which is from north of Halliday to the Dunn Center Elevated tank. The second intermediate completion date is November 15, 2014, for Bid Schedule 2A which will provide connections to the Cities of Dunn Center and Killdeer. The Bid Schedule 2B and the entire project is to be substantially complete on or before August 1, 2015, which includes 2 prefabricated below grade booster pump stations and will enable the Killdeer Mountain, Grassy Butte and a portion of Fairfield service areas to be served from the OMND Water Treatment Plant (WTP).

The Commission awarded Contract 2-8F to Carstensen Contracting, Inc., at its February 27, 2014, conference call meeting. Contract documents have been executed. The preconstruction conference for this contract was held on June 3, 2014. Bid Schedule 1 consists of approximately 15.5 miles of pipeline and the contract has approximately 8 miles of pipeline to install in Bid Schedule 1. The intermediate completion date for Bid Schedule 1 was August 15, 2014.

Contract 4-6 Dunn Center SA Pumps inside OMND WTP:

Administrative items remain before this contract can be closed out.

Contract 5-17 Dunn Center Elevated Reservoir:

This contract includes furnishing and installing a 1,000,000 gallon elevated composite reservoir. The substantial completion date on this contract was August 15, 2014. The welding of the tank bowl was completed on ground and it was lifted into place on July 22, 2014. Painting of the tank remains to be completed. The contractor sent letter requesting 95 days extension because of abnormal 2013-2014 weather conditions. Bartlett and West/AECOM has responded to their extension request, indicating only 16 days in 2013-2014 winter season can be considered abnormal. Painting of the tank is expected to begin this week.

Contract 5-15B 2nd Zap Reservoir:

This contract includes furnishing and installing a 1,650,000 gallon ground storage reservoir. Contract documents have been executed and notice to proceed was issued on August 9, 2013. The substantial completion date was August 15, 2014. The tank foundation work and the inlet and outlet piping have been installed. The concrete tank floor was placed the last week of July

and first week of August. The contractor sent a letter requesting an extension of 6 days, which has been denied at this time.

Contract 8-3 Killdeer Mountain Elevated Reservoir:

This contract includes furnishing and installing a 250,000-gallon elevated reservoir. This contract was bid on October 18, 2013. The SWC awarded this contract to Maguire Iron, Inc. of Sioux Falls, South Dakota at its December 13, 2013, meeting. The substantial completion date is October 1, 2014. The preconstruction conference for this contract was held on April 16, 2014. Tank installation is complete. Painting of the tank remains to be completed.

OMND Water Treatment Plant (WTP) Phase II Expansion:

The SWC awarded Contract 3-1H, OMND WTP Phase II expansion to Northern Plains Contracting, Inc., and Edling Electric, Inc. at its December 13, 2013, meeting. The preconstruction conference for Contract 3-1H was held on January 29, 2014. The substantial completion date on this contract was August 1, 2014. The completion is delayed because of the coordination involved with keeping the WTP operational. Membrane equipment startup is planned for early September 2014 with ozone equipment startup expected to follow by two to four weeks.

Other Contracts

Contract 7-1C/7-8H Hydraulic Improvements in the Davis Buttes, New Hradec and South Fryburg SA:

The contractor for 7-1C/7-8H, Manitou Construction, Inc., has turned over the contract to its bonding company, Philadelphia Insurance Company. The contract is substantially complete. Pre-final inspection is complete. A final change order is being prepared. \$198,000 is withheld in liquidated damages from this contract. The bonding company has requested the SWC to waive all or some of the liquidated damages. We are estimating the actual damages on this contract.

Contract 8-1A New Hradec Reservoir:

This contract involves furnishing and installing a 296,000 gallon fusion powder coated bolted steel reservoir. The contract documents were executed on May 16, 2013, and the Notice to Proceed was issued on June 3, 2013. The substantial completion date on this contract was September 15, 2013. The tank was put into service on February 20, 2014. A partial pay estimate withholding \$207,750 was sent to the contractor. The contractor responded by informing that he does not agree with the liquidated damages that are being assessed and will not sign the partial pay estimate.

Contract 4-5 Finished Water Pumping Station (FWPS):

This contract consists of the construction of a 60' by 85' reinforced concrete and precast concrete building, and the installation of pumping, piping, mechanical, and electrical and instrumentation systems. The SWC at its May 29, 2014, meeting awarded this contract to John T. Jones Construction Company. The preconstruction conference for this contract was held on June 19, 2014. The contractor mobilized to the site on July 7, 2014. The contractor has completed the new sanitary line connection and the sanitary lift station. The new sanitary line is

the connection from the existing WTP to the City of Dickinson's sanitary main. The sanitary lift station pumps the sanitary waste from the existing WTP. The excavation for the reservoir under the FWPS has commenced but will accelerate after the bypass lines for the City of Dickinson's water supply are installed.

Contract 1-2A Supplemental Raw Water Intake:

The shaft collar construction is complete. The ground freezing operation was completed on August 22, 2014. The excavation operation should accelerate as the freezing pipe in the middle of the caisson for freezing the bottom of the caisson is removed. An application for a Corps of Engineers easement and construction license for the Supplemental Intake screen and micro-tunneling boring machine receiving pit in the lake bottom was submitted on July 23, 2014. The contract's substantial completion date is November 15, 2014.

The contractor has requested mediation for their claim of differing subsurface conditions.

Contract 3-2 Six (6) MGD Water Treatment Plant at Dickinson:

Contract 3-2A Membrane Equipment Procurement – The SWC awarded this contract to Tonka Water from Plymouth, Minnesota at its February 27, 2014, conference call meeting. BW/AECOM has received submittal drawings.

Contract 3-2B Softening Equipment Procurement – Contract documents have been executed with WesTech Engineering, Inc.

Contract 3-2C Ozone Equipment Procurement – Proposals for this contract were opened on July 31, 2014, and award of this contract is discussed in a separate memo.

Contract 3-2D Dickinson WTP Contract – We have received the 50 percent submittal set of drawings from BW/AECOM. We anticipate bidding this contract in Summer of 2015.

Contract 3-2E Residual Handling Building – We have received the Preliminary Design Report for this contract. The residual handling building will process the blow down waste from the lime softening basins and backwash waste from the filtration systems. We anticipate bidding this contract in March 2015.

Project Update

City of Rhame:

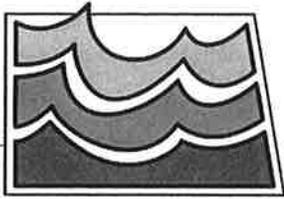
The City of Rhame voted at a special election in July, 2013, to connect to the SWPP. Rhame did not elect to connect to SWPP when the Bowman-Scranton Service Area was constructed in 2000-2003, so no capacity for them was included in the design. Service to Rhame requires paralleling 3 miles of pipeline on the suction side of the Rhame Booster, connection to the city's distribution system and upgrading the pumps in the Rhame booster from 15 HP to 20 HP. The City of Rhame is responsible for the parallel piping, connection to the city's distribution system

and 25 percent of the pump upgrades. The remaining 75 percent of the pump replacement cost will be requested from the Replacement and Extraordinary Maintenance funds. The contract was advertised for bids and the City awarded the contract to the low bidder, Lynn's Backhoe Service of Hettinger, North Dakota. The substantial completion date for this contract was August 1, 2014. The 3-mile pipeline upstream of the Rhame booster has been turned over to SWA for service. The City connection is installed. The meter vault for the City is expected to be delivered soon. The SWA has started the bidding process for replacing the pumps inside the booster.

Raw Water Line Capacity Upgrade Implementation Plan:

BW/AECOM completed a report detailing the plan for implementing the upgrades necessary to increase the capacity of the raw water MTL to deliver 18 MGD at Dickinson WTP. This plan includes pump station and surge protection facility upgrades along with parallel pipeline segments. This report is currently under review.

TSS:SSP:pdh/1736-99



North Dakota State Water Commission

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MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM:  Todd Sando, P.E., Chief Engineer-Secretary
SUBJECT: NAWS – Project Update
DATE: September 4, 2014

Supplemental EIS

Reclamation continues to work on the Supplemental Environmental Impact Statement (SEIS). The draft SEIS was released for public comment June 20, 2014 and the public comment period ends September 10, 2014. We are working with our legal counsel to provide comments for the agency.

Manitoba & Missouri Lawsuit

The Federal Court issued an order on March 5, 2010, requiring Reclamation to take a hard look at (1) the cumulative impacts of water withdrawal on the water levels of Lake Sakakawea and the Missouri River, and (2) the consequences of biota transfer into the Hudson Bay Basin, including Canada. The order dated October 25, 2010, allowed construction on the improvements in the Minot Water Treatment Plant and pipelines to the Minot Air Force Base and Glenburn to proceed. However, it did not allow design work to continue on the intake. The court ordered a conference call on November 15, 2012. The court expressed concerns about construction taking place under the previously approved and unopposed injunction modifications possibly affecting the outcome of the SEIS. A briefing explaining the additional construction on the northern tier, justifying the need and explaining the independence from supply or biota treatment alternatives was filed December 6, 2012. Missouri and Manitoba filed responses January 6, 2013, and our response was filed January 22, 2013. The Court issued an opinion on March 1, 2013, modifying the injunction to not permit 'new pipeline construction or new pipeline construction contracts'. We are working with our legal counsel to approach the Court to request permission to begin design work on replacement and upgrade of the softening facilities and associated equipment at the Minot water treatment facility.

Current Construction

All current construction contracts are substantially complete with only minor punch list items and finishing clean up and reclamation work remaining. Remaining obligations are primarily retainage on all contracts.

Design and Construction Update

Table 1 - NAWS Contracts under Construction				
Contract	Contract Award	Contractor	Contract Amount	Remaining Obligations
2-2D Mohall	7/24/09	American Infrastructure, CO In default – assumed by the surety - EMC	\$5,196,586.13	\$407,919.91
7-1A Minot WTP Filter Rehab and SCADA	11/30/11	PKG Contracting, Inc. Main Electric, Inc.	\$8,258,678.85	\$344,159.10
Total Remaining Construction Contract Obligations				\$752,079.01

TS:TF:ph/237-04



North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TTY 800-366-6888 • FAX 701-328-3696 • INTERNET: <http://swc.nd.gov>

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM:  Todd Sando, P.E., Chief Engineer-Secretary
SUBJECT: Western Area Water Supply
DATE: September 9, 2014

Update

The Western Area Water Supply Authority (Authority) reported to the Industrial Commission January through July industrial water sales of \$19.4 million.

The State Water Commission is required to review and approve the planning, location, and water supply contracts of Authority depots. Since August 2013, the Chief Engineer has reviewed and approved twenty-two industrial sales applications with sixteen having completed their withdrawals. The Authority is requesting approval to relocate the existing Crosby fill station which is being presented to the State Water Commission and is the subject of a separate memo.

Overall Plan Approval

The Authority's July capital accounting report shows Phases I, II, and III cost estimate at \$242.1 million, contracted amounts to-date at \$177.3 million, and actual to-date expenses at \$152.3 million. The Authority provided the attached overall plan for approval of additional Phase III projects and potential alternates as shown in the request. The focus of these projects is additional transmission and distribution pipeline within the region.

Funding Approval

The current approved funding is \$190 million and the Authority is requesting an additional \$39 million to bring total funding to \$229 million. The \$190 million includes \$170 million in loans managed by the Bank of North Dakota and a \$20 million grant from the State Water Commission. The recommendation to the State Water Commission is to approve \$39 million in the form of a \$19.5 million grant for eligible costs and a \$19.5 million loan through Bank of North Dakota.

I recommend the State Water Commission approve the overall plan and additional cost-share, not to exceed \$39,000,000 in the form of a \$19,500,000 loan and \$19,500,000 grant, for the Western Area Water Supply Project to the Western Area Water Supply Authority from the funds appropriated to the State Water Commission in the 2013 - 2015 biennium. This approval is subject to the entire contents of the recommendation contained herein, and availability of funds.

TS:JM:ph/1973
Attachments

Memorandum

To: Todd Sando, PE, State Engineer, North Dakota State Water Commission (SWC)
 From: Jaret Wirtz, Executive Director, Western Area Water Supply Authority (WAWSA)
 Date: September 5, 2014
 Re: **WAWSA Project Approval for 2013-2015 Biennium**

Wirtz
9-5-14

As you are aware, WAWSA has been allocated \$229 million in funding from various sources from the North Dakota State Legislative Assembly to build water supply, treatment, transmission, and distribution infrastructure to provide the water supplies for the exploding population in northwest North Dakota. In addition to the Legislature providing this funding, SB2233 requires WAWSA to submit its overall project plan to the SWC for approval. Please accept this Memo as an update to WAWSA's project plan for approval to issue contracts up to \$229 million.

The Phase III projects WAWSA has prioritized to move forward through at least the design phase and stay within the \$229 million in available funding based on current cost estimates are summarized in Table 1. Please note that Phase I and II projects are not shown individually for clarity as the funding for these phases has already been approved by the SWC.

Project		Best Estimate To Date
1	Phase I Projects (2011-2013 Funding)	\$31,629,529
2	Phase II Projects (2011-2013 Funding)	\$86,161,427
3	Program Management & Operations Plan	\$283,404
4	Right Of Way & Permitting Services	\$2,000,000
5*	Williston WTP Expansion	\$28,202,505
6*	Williston West By-Pass Transmission Line	\$17,000,000
7*	Williston WTP Intake Improvements – Preliminary Engineering	\$414,800
8*	Williston WTP Pretreatment Evaluation	\$130,000
9*	Williston WTP Pretreatment Improvements	\$5,000,000
10	BDW Rural Distribution – Part 1 (Base Bid)	\$7,370,000
11*	MCWRD – System II Regional Service (Keene)	\$8,404,488
12	MCWRD – System I Improvements – Part 1 (Base Bid)	\$4,836,777
13*	MCWRD – System IV – Part 3a	\$3,491,213
14*	WRWD – West Expansion – Part 2	\$5,521,600
15*	R&TWSCA Well Field and WTP Improvements	\$2,472,292
16	R&TWSCA – Rural Distribution – Part 2	\$273,500
17	R&TWSCA – Stanley Distribution Part 1 Engineering	\$442,000
18	WRWD – East Williston Transmission – Facilities	\$5,500,000
19*	WRWD – Blacktail Dam Area Distribution – Part 1 Base Bid	\$8,640,000
20	WRWD – County Hwy 9 Transmission – Part 1 Engineering	\$5,000,000
21*	WRWD – Epping Transmission – Part 1	\$4,540,000
22	WRWD – Epping Distribution – Part 1	\$260,000
TOTAL ESTIMATED COST - PHASES I, II, & III		\$227,573,535

*Phase III Projects bid and under construction

Table 1: Summary of WAWSA Phase III Projects for SWC Approval

Memorandum

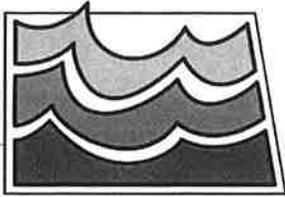
Re: **WAWSA Project Approval for 2013-2015 Biennium**

Date: September 5, 2014

In addition to the prioritized Phase III projects summarized in Table 1, Table 2 summarizes additional projects and alternates to various projects listed in Table 1. Due to added water requests resulting in project expansions and a changing bidding environment, WAWSA will bid alternates for several of our prioritized projects and/or delay the bidding of projects to ensure we manage our available project funds to stay below the authorized \$229 million. If WAWSA receives favorable bids, alternates will be awarded as project funding allows. Projects and alternates provided in Table 2 that cannot be awarded with 2013-2015 biennium funding will be delayed until 2015-2017 biennium funding is available.

	Project	Best Estimate To Date
1	BDW Rural Distribution – Part 1a (Alternate)	\$6,010,000
2	MCWRD – System I Expansion – Part 1a (Alternate)	\$4,715,000
3	R&TWSCA – Rural North Distribution – Part 1	\$4,490,000
4	R&TWSCA – Epping Rural Distribution – Part 1a (Alternate)	\$1,900,000
5	R&TWSCA – Stanley Distribution – Part 1	\$6,720,000
6	WRWD – East Williston Transmission – Pipeline	\$10,000,000
7	WRWD – Epping Distribution – Part 1a (Alternate)	\$3,570,000
8	WRWD – Epping Distribution – Part 2	\$5,240,000
9	WRWD – Blacktail Dam Distribution – Part 1a (Alternate)	\$3,540,000
	TOTAL ESTIMATED COST – PHASE III ALTERNATES/CARRYOVER	\$46,185,000

Table 2: Summary of WAWSA Phase III Project Alternates/Carryover



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MEMORANDUM

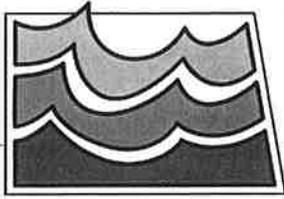
TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *TSS* Todd S. Sando, P.E., Chief Engineer - Secretary
SUBJECT: Mouse River Enhanced Flood Protection Plan Status Report
DATE: September 3, 2014

The Souris River Joint Board is currently working through the various steps to bring the project to construction. Contract negotiations for engineering services are near completion for the embankment dike and floodwall features.

Construction of these features will require modification of the existing federal levees. This will involve the St. Paul District Corps of Engineers under the Section 408 process. In addition, the project will require Section 404 permitting (involving the Omaha District through the Bismarck office) and perhaps other permits and an environmental process. While we attempted to raise awareness of the interested federal agencies early on in the project's first year, the features were not clearly defined enough at that time for any of these activities to begin. Discussions have been under way for several months now, resulting in a meeting on September 5. The ultimate goal of these efforts is to define a strategy and a detailed plan to work through these issues and maintain progress.

The review of the operating plan for Rafferty, Alameda, and Boundary Dams (Annex 'A' of the International Agreement) is under way. A Core Group has been formed, which has met by conference call. Members are now compiling comments on the text of Annex A, and a face-to-face meeting will be held this fall. After the text has been amended, the Core Group may take up the matter of operations during summer rainfall events, if authorized by the International Souris River Board.

TSS:JTF:pdh/1974



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MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: Todd Sando, P.E., Chief Engineer – Secretary
SUBJECT: Devils Lake Hydrologic Update
Devils Lake Outlet Update
DATE: August 29, 2014

The current water surface elevation of Devils Lake and Stump Lake is 1452.8 ft-msl. This is approximately a 0.7 foot reduction from the apparent peak on June 29, 2014. The table below is the precipitation in Devils Lake during 2014. The average precipitation is from the years 1991 thru 2013.

Month 2014	Precipitation Measured	Average Precipitation
----	(Inch)	(Inch)
January	0.44	0.52
February	0.07	0.45
March	0.28	0.80
April	2.78	1.11
May	2.13	2.72
June	5.59	3.93
July	2.17	3.70
August	1.93	2.56
TOTAL	15.39	15.79

Following is from the National Weather Service Long Range Outlook for Devils Lake forecast elevations, including Stump Lake. The table shows the probability for non-exceeding lake levels (falling level) from the period from August 25th to November 30th. There is no exceeding of values at this time due to hydrologic conditions according to the National Weather Service.

Probability	90%	50%	10%
Lake Elevation ft-msl	1452.1	1451.8	1451.7

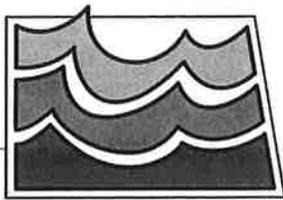
JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
CHIEF ENGINEER AND SECRETARY

West and East Outlets:

On July 16th the East End Outlet pumps were increased to full capacity of 350 cfs to add to the West End Outlet that had been at full capacity of 250 cfs since July 7th. Since startup in May to August 31st, the West End Outlet has pumped 35,870 acre-feet and the East End Outlet has pumped 51,977 acre-feet for a total from both outlets of 87,847 acre-feet. For the area of the current lake level of 190,883 acres, the reduction in lake level from pumping this year is 5.5 inches.

TS:JK:EC:ph/416-10



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MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM:  Todd Sando, P.E., Chief Engineer/Secretary
SUBJECT: Missouri River Update
DATE: September 3, 2014

System/Reservoir Status

System volume on September second in the six mainstem reservoirs was 61.3 million acre-feet (MAF), 5.2 MAF above the base of flood control. This is 4.3 MAF above the average system volume for the end of August, and 9.2 MAF more than last year. The volume of water in the system on September 2, 2011, was 63.5 MAF.

On September second, Lake Sakakawea was at an elevation of 1845.0 feet msl, 7.5 feet above the base of flood control. This is 10.4 feet higher than a year ago and 7 feet above its average end of August elevation. The minimum end of August elevation was 1812.1 feet msl in 2006 and the maximum end of August elevation was 1851.2 feet msl in 1975. The elevation of Lake Sakakawea on September 2, 2011, was 1844.3 ft msl.

The elevation of Lake Oahe was 1615.4 feet msl on September second, 7.9 feet above the base of flood control. This is 14.1 feet higher than last year and 13.2 feet higher than the average end of August elevation. The minimum end of August elevation was 1570.3 feet msl in 2006, and the maximum end of August elevation was 1617.1 feet msl in 1997. The elevation of Lake Oahe on September 2, 2011, was 1613.5 feet msl.

The elevation of Fort Peck was 2232.3 feet msl on September second, 1.7 feet below the base of flood control. This is 7.3 feet higher than a year ago and 0.7 feet higher than the average end of August elevation. The minimum end of August elevation was 2200.9 feet msl in 2007, and the maximum end of August elevation was 2248.5 feet msl in 1975. The elevation of Fort Peck on September 2, 2011, was 2241.8 feet msl.

The Master Manual provides for a system volume check on September first of every year to determine the winter release rate from Gavins Point Dam. If the volume of water in the system is more than 58.0 MAF on September first, the average winter release rate is 17,000 cfs. System volume on September 1, 2014, was 61.3 MAF, which would specify a release rate of 17,000 cfs from Gavins Point Dam this winter (December through February).

Missouri River Recovery Implementation Committee (MRRIC)

In Section 5018 of the 2007 Water Resources Development Act (WRDA) Congress authorized the Missouri River Recovery Implementation Committee (MRRIC). The Committee is to make recommendations and provide guidance on activities resulting from the Missouri River Recovery

JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
CHIEF ENGINEER AND SECRETARY

Program. The Committee was established in 2008. MRRIC has nearly 70 members representing local, state, tribal, and federal interests throughout the Missouri River basin.

MRRIC is providing support to the Corps in the development of the Missouri River Recovery Management Plan (MRRMP) and Environmental Impact Statement (EIS). The MRRMP and EIS is a three-year effort that will evaluate the effectiveness of actions taken by the Corps to recover the least tern, piping plover, and pallid sturgeon. The evaluation will determine modifications to current recovery efforts, if necessary, and will result in an adaptive management plan for recovery actions. The MRRMP and EIS are scheduled to be complete in May 2016.

Alternatives are currently being investigated for the recovery of the least tern, piping plover, and pallid sturgeon. For example, the lowering of Lake Sakakawea to allow more drift distance for the free-floating pallid sturgeon embryo is being investigated. Potential recovery alternatives will be weighed against impacts to humans. MRRIC is assisting the Corps in developing a set of human considerations objectives and performance metrics that will assist the Corps in measuring the effect of alternatives on human uses and needs of the Missouri River.

Surplus Water/Reallocation

The Reallocation Study has been put on hold until the five remaining Surplus Water Reports are finalized and the associated Rulemaking has been released to the public. A timeline of these events has not been provided. We continue the effort to educate the Corps that storage contracts are inappropriate as the natural flow of the Missouri River provides for the water use in North Dakota and stored water is not necessary.

TSS:LCA:pdh/1392



North Dakota State Water Commission

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September 11, 2014

Ms. Jody Farhat, Chief
USACE Missouri River Basin Water Management
CENWD-PDR
Edward Zorinsky Federal Building
1616 Capitol Avenue, Suite 3300
Omaha, NE 68102

Dear Ms. Farhat,

According to the September Main Stem Reservoir and Release Forecast (Reservoir Forecast) the releases from the four lower main stem dams will increase significantly over the next few months compared to the August Reservoir Forecast. This is due to above normal runoff for the month of August, which equated to approximately 3.2 million acre-feet or 241 percent of normal. The winter releases in January and February for the four lower main stem dams do not change between the August and September Reservoir Forecasts. However, comparison of the same Reservoir Forecasts indicates that Garrison Dam releases in January and February will increase.

The January and February releases from Garrison are now forecasted to be 24,000 cubic feet per second (cfs). Under ice conditions, a flow of 24,000 cfs will cause a stage between nine and ten feet on the Missouri River at Bismarck. A flow of 24,000 cfs in open water conditions on the Missouri River at Bismarck produces a stage of about five feet. Open water conditions allow for greater discharges at lower stages compared to ice covered conditions, and therefore, provide more flexibility in evacuating the Annual Flood Control Zones of the main stem dams.

The common theme this year has been above normal. The mountain snowpack peaked in April at 132 and 140 percent of normal for the "Above Fort Peck" and "Fort Peck to Garrison" reaches, respectively. The runoff in May, June, and July ranged from 130 to 153 percent of normal. According to your September 4, 2014, press release, the runoff in August was the third highest since 1898 at 241 percent of normal. The volume of runoff that occurred in August was not anticipated as the August 1st runoff forecast predicted it to be 121 percent of normal for that month. The runoff for the remainder of the year is predicted to be above normal and there is no reason to not anticipate even higher than expected runoff.

If the trend of above normal runoff continues, even more water will need to be evacuated before next spring, resulting in increased winter releases above 24,000 cfs. The longer you delay responding to the conditions in the basin the less flexibility you have to manage the reservoirs without increasing the risk of flooding.

JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
CHIEF ENGINEER AND SECRETARY

Ms. Jody Farhat
Page 2
September 11, 2014

Given the trend of above normal runoff and the increased flexibility provided by open water conditions, I strongly urge increasing releases now from Garrison Dam to avoid a situation where higher releases are necessary to evacuate flood waters during the freeze-up to ice-out period.

Sincerely,

A handwritten signature in black ink, appearing to read "Todd Sando". The signature is fluid and cursive, with a long horizontal stroke at the beginning.

Todd Sando, P.E.
State Engineer

TSS:LCA:pdh/1392

North Dakota Missouri River Stakeholders

North Dakota Missouri River Stakeholders (NDMRS)

Mission: Creating grassroots unity, leadership and direction to advocate and promote North Dakota's Missouri River interests.

Goals of this effort

- To create unity and leadership for a North Dakota vision and voice on Missouri River issues.
- 2014 Fall Workshop: to build momentum, interest, commitment (ownership).
- 2015 Spring Conference: to develop leadership and direction to advocate North Dakota's Missouri River interests.

How we got here!

- 2005 - Missouri River Joint Board (MRJB) formed to address local issues along the river.
- 2012 - Workshop attended by 65 North Dakota stakeholders resulted in the formation of a Leadership Committee to create a North Dakota Missouri River organizational strategy.
- Funding provided by State Water Commission and Garrison Diversion Conservancy District to the MRJB to implement the 2012 workshop outcomes.
- The Leadership Committee established a path forward, a conceptual framework, and hired a project team to assist.

The challenge:

- To foster understanding among North Dakota's Missouri River interests – including views and needs of those stakeholders.
- To develop agreement on key issues and work together to maximize the Missouri River's potential in North Dakota.
- To convey stakeholders' goals within and outside the state's borders, and then work to achieve them.

Why is this needed?

- To enable North Dakota's Missouri River interests to collectively meet about, educate, advocate, understand, or respond to Missouri River issues and challenges.
- North Dakota needs greater unity and advocacy for what lies ahead - we need to start working together today to be ready for tomorrow!



What is needed?

- We need to develop a strong regional grassroots structure to listen, discuss, learn, educate, communicate, involve, advocate, and promote Missouri River issues.
- Agreement by North Dakotans on the key issues whenever possible.
- Commitment by North Dakotans to work together to realize North Dakota's interests on the Missouri River.
- A vision we all support and will help achieve.

What are some of the issues?

- Access to water within reservoir boundaries
- Flood control
- Wildlife habitat
- Annual Missouri River operating plan
- Adequate water supplies
- Sovereign land management
- Recreational access (boat ramps)
- Bank stabilization
- Floodplain management
- Sedimentation and delta formation
- Noxious weed control
- Land management
- Missouri River Recovery Program
- Irrigation
- Fishery health
- Water quality
- Endangered species
- Hunting access

What can you do to help?

- GET INVOLVED!
- STAY INVOLVED!
- SHARE YOUR VIEWS!
- LEAD!

ATTEND THE FALL WORKSHOP:
November 20, 2014
Bismarck State College
Bismarck, ND

ATTEND THE SPRING CONFERENCE:
June 3-4, 2015
Ramkota Hotel
Bismarck, ND

Contact:
Ryan Norrell
Executive Director
rmnorrell@ndwaterlaw.com
701-223-4615



NORTH DAKOTA STATE WATER COMMISSION

COST-SHARE 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 cost-share funding from the agency's appropriated funds are consistent with the public interest. The State Water Commission values and relies on local sponsors and their participation to 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 AND ELIGIBILITY

- A. **CONSTRUCTION COSTS** include earthwork, concrete, mobilization and demobilization, dewatering, materials, seeding, rip-rap, 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, 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** is grant or loan funds provided through the State Water Commission.
- C. **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 project inspection. Administrative services and support services performed and charged by engineering companies are not engineering services. Engineering services are eligible costs if incurred after State Water Commission approval. If cost-share is expected to be greater than \$25,000, the local sponsor must follow the engineering selection process 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 this 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.

- D. **IMPROVEMENTS** are construction related projects that upgrade a facility to provide increased efficiency or capacity. Improvements do not include any activities that are maintenance, replacement, or reconstruction.
- E. **INELIGIBLE ITEMS** excluded from cost-share include:
 - 1 Administrative, easement, and permit related costs;
 - 2 Property acquisitions, property surveys, and legal expenses 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, maintenance, replacement, and reconstruction 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.
- F. **EXPANSIONS** are construction related projects that increase the project area or users served. Expansions do not include maintenance, replacement, or reconstruction activities.
- G. **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.
- H. **MAINTENANCE COSTS** include repairs, deferred repairs, and general upkeep of facilities to allow facilities to continue proper operation and function.
- I. **PROGRAM** is a subcategory of cost-share that is typically associated with a federal initiative and may cover all phases of a study or implementation of a project.
- J. **PROJECT** is the water-related construction activity.
- K. **REPLACEMENT AND RECONSTRUCTION COSTS** include the removal of portions of facilities or components that have completed their useful life and substitution with different components to obtain the same or similar function of the original facilities or components.

- 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.

II. COST-SHARE APPLICATION AND APPROVAL PROCEDURES. The State Water Commission will not consider any cost-share applications for water related projects or studies 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 30 days before a State Water Commission meeting will not be considered at that meeting and will be held for consideration at a future meeting. The application form is maintained and updated by the Chief Engineer and must include the following:

- 1 Category of cost-share activity
- 2 Location of the proposed project or study area
- 3 Description, purpose, goal, objective, narrative of the proposed activities
- 4 Delineation of costs
- 5 Potential federal, other state, or other North Dakota state entity participation
- 6 Engineering plans, if applicable
- 7 Status of required permitting
- 8 Potential territorial service area conflicts or service area agreements, if applicable
- 9 Sustainable operation, maintenance, and replacement plan for projects
- 10 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. All local sponsors are encouraged to submit project and study financial needs during the budgeting process. Projects and studies 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.

- 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 Chief Engineer will present the application along with 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. For cost-share applications over \$100 million, additional information requested by the State Water Commission will be used to determine cost-share.
- 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 and budget priorities.

The Chief Engineer is authorized to approve cost-share up to \$75,000 in state funds and also approve cost overruns up to \$75,000 in state funds without State Water Commission action.

- D. **NOTICE.** The Chief Engineer will give 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 will be entered 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.

- 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.

III. COST-SHARE CATEGORIES. The State Water Commission supports the following categories of projects and studies for cost-share. Generally, engineering expenses are cost-shared as follows: Pre-construction expenses and pre-construction engineering approved by the State Water Commission are cost-shared up to 35 percent. 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 including:

- 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 **WATER SUPPLY PROJECT.** The State Water Commission supports water supply efforts and will use a grant and loan program. The local sponsor may apply for water supply funding, and the application will be reviewed to

determine project priority. Projects will be prioritized within categories (1) thru (5) below. Projects within category (1) may be considered for grant funding up to 60 percent cost-share or in special cases up to 75 percent of cost-share and projects in category (2) may be considered for grant funding up to 60 percent of cost-share. Grant funding within category (3) will be on a case-by-case basis. Projects within categories (1) through (5) may be considered for loan funding. After cost-share for grant funding has been determined, the local sponsor may be considered for loan funding in addition to the grant funding. The combination of grant and loan funding will not exceed 80 percent from the State Water Commission.

(1) Addresses upgrades to meet primary drinking water standards or expansion into new service areas. If the expansion into a new service area requires at least ten miles of new transmission pipeline, grant funding up to 75 percent may be considered. Factors considered for water system expansions are:

(a) Connection of communities to the regional system as part of this expansion as determined by the Chief Engineer.

(b) Willingness of water users at far reaches of the system to pay additional costs for water service as an indicator of greater need for access to water and local commitment in the project as determined by the Chief Engineer.

(c) Affordable and sustainable water rate as determined by the Chief Engineer.

(2) Supports improvements and connection of new customers within the existing service area of a water system that has a 3-year average population growth in excess of 3% per year, as determined by the Chief Engineer

(3) Water treatment improvements that address impacts from other State Water Commission projects. Grant funding to be determined based on level of impact by State Water Commission project.

(4) Assists with improvements in service areas where the anticipated cost per user each year (based on 5,000 gallons per month) divided by the average annual median income per user is in the top quartile or other ranking as determined by the Commission of its peer group (large city, small city, and regional) water systems that submitted planning information forms for the biennium. The Chief Engineer will rank the projects.

(5) Addresses extraordinary repairs or replacement needs of a water supply system due to damages from a recent natural disaster.

Debt per capita, either actual or anticipated, may be used as an additional determinant of financial need.

The State Water Commission will periodically set the interest rate on the loan program, taking into consideration other loan programs. If ability to pay for the local share is a concern, the Chief Engineer may provide a recommendation for public finance options or loan funding.

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 water service will be contracted, public notice of availability of water service contracts is required when the depot becomes operational.
- c) A portion of the water supply at any depot must be available on a non-contracted basis for public access.

2 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 GRANT 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 grants for up to 60 percent of eligible costs. For projects with federal participation, the cost-share may be up to 50 percent of eligible costs.

Engineering design suitable for permitting by the State Engineer must be completed before any construction cost-share is approved. The cost-share application must include the return interval or design flow for which the structure will provide protection. 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.

- 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-matched 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 non-desirable. 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 flood 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 the operation plan, quantifying the flood reduction benefits for 25, 50, and 100-year events must be submitted with the cost-share application.

- 6 **SNAGGING AND CLEARING PROJECTS.** Snagging and clearing projects consist of the removal and disposal of fallen trees and associated debris encountered within or along the channel. Snagging and clearing projects are intended to prevent damage to structures such as bridges, and maintain the hydraulic capacity of the channel during flood flows. The State Water Commission may provide cost-share for up to 50 percent of the eligible items for snagging and clearing as well as any sediment that has accumulated in the immediate vicinity of snags and any trees in imminent danger of falling in the channel on watercourses as defined in N.D.C.C. § 61-01-06. Items that are not eligible include snagging and clearing of man-made channels; the dredging of watercourses for sediment removal; the clearing and grubbing of cattails and other plant vegetation; or the removal of any other unwanted materials.

D. RURAL FLOOD CONTROL. The primary purpose of rural flood control projects is to manage runoff or drainage from agricultural sources or to provide flood control in a rural setting. Typically, rural flood control projects consist of drains, channels, diversion ditches, or ring dikes. Items that are not eligible include projects that are managing runoff or drainage from residential or urban sources.

- 1 **DRAINS, CHANNELS, OR DIVERSION PROJECTS.** 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. Expansions and improvements may be cost-shared on the basis of increased drainage capacity achieved or increased area served. 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.

- 2 **RING DIKE PROGRAM.** This program is intended to protect individual rural homes and farmsteads. All ring dikes within the program are subject to the Commission's Individual Rural and Farmstead Ring Dike Criteria provided in Attachment A. Cost-share is limited to \$40,000 per ring dike. 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.

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 eligible project costs.

- 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 new central supply works, including water storage facilities, intake structures, wells, pumps, power units, primary water conveyance facilities, and electrical transmission and control facilities.
- G. 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.

ATTACHMENT A
INDIVIDUAL RURAL AND FARMSTEAD RING DIKE CRITERIA

MINIMUM DESIGN CRITERIA

- HEIGHT: The dike must be built to an elevation 2 ft above either the 100-year flood or the documented high water mark of a flood event of greater magnitude, whichever is greater.
- TOP WIDTH: If dike height is 5 ft or less: 4 ft top width
If dike height is between 5 ft and 14 ft: 6 ft top width
If dike height is greater than 14 ft: 8 ft top width
- SIDE SLOPES: 3 horizontal to 1 vertical
- STRIP TOPSOIL AND VEGETATION: 1 ft
- ADEQUATE EMBANKMENT COMPACTION: Fill in 6-8 inch layers, compact with passes of equipment
- SPREAD TOPSOIL AND SEED ON RING DIKE

LANDOWNER RESPONSIBILITY

Landowners are responsible to address internal drainage on ring dikes. If culverts and flap gates are installed, these costs are eligible for cost-share. The landowner has the option of completing the work himself or hiring a contractor to complete the work.

If contractor does the work, payment is for actual costs with documented receipts.

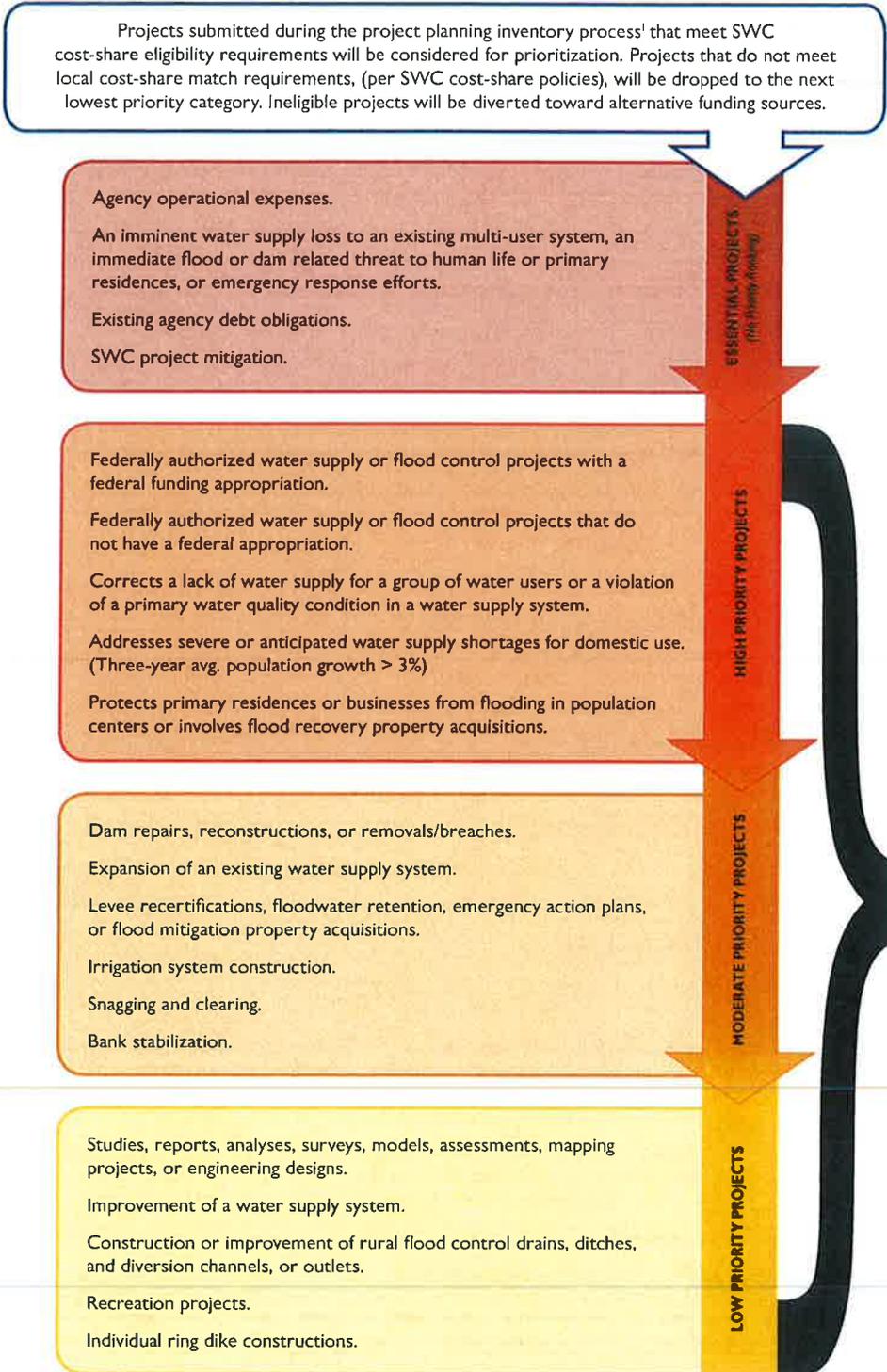
If landowner does the work, payment is based on the following unit prices:

- STRIPPING, SPREADING TOPSOIL, AND EMBANKMENT FILL: Chief Engineer will determine rate schedule based on current local rates
- SEEDING: Cost of seed times 200%
- CULVERTS: Cost of culverts times 150%
- FLAP GATES: Cost of flap gates times 150%

OTHER FACTS AND CRITERIA

- The topsoil and embankment quantities will be estimated based on dike dimensions. Construction costs in excess of the 3:1 side slope standard will be the responsibility of the landowner. Invoices will be used for the cost of seed, culverts, and flap gates.
- Height can be determined by existing FIRM data or known elevations available at county floodplain management offices. Engineers or surveyors may also assist in establishing height elevations.
- The projects will not require extensive engineering design or extensive cross sections.
- A dike permit is required if the interior volume of the dike consists of 50 acre-feet, or more.

DRAFT SWC WATER PROJECT PRIORITIZATION GUIDANCE CONCEPT



Footnotes

1. All local sponsors are encouraged to submit project and study financial needs during the budgeting process. Projects and studies 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.

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.



North Dakota State Water Commission

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Agenda

MEMORANDUM

TO: Governor Jack Dalrymple
North Dakota Water Commission Members
FROM: *Todd* Todd Sando P.E., Chief Engineer-Secretary
SUBJECT: Financial Updates
DATE: November 24, 2014

1. Agency Program Budget Expenditures

Attached is an expenditure spreadsheet for the biennium through October 31, 2014. With only two special line items, Administrative and Support Services and Water and Atmospheric Resources Expenditures our legislatively approved budget does not contain specific amounts for Salaries, Operations, and Grants and Contracts. In order to manage the Division's budgets we have allocated dollar amounts to each of these categories, however, division managers have the ability to shift dollars from one category to another (see page 2.)

The Contract Fund spreadsheet summarizes information on the committed and uncommitted funds from the Resources Trust Fund and the Water Development Trust Fund (see page 3.) A detailed breakdown of the individual projects follows on pages 4 through 8. The current Contract Fund spreadsheet shows approved projects totaling \$623,408,699 leaving a balance of \$82,485,393 available to commit to projects in the 2013-2015 biennium.

2. 2013 – 2015 Resources Trust Fund and Water Development Trust Fund Revenues

Oil extraction tax deposits into the Resources Trust Fund total \$424,729,765 through November 2014 and are currently \$66,359,615 or 18.5 percent above budgeted revenues.

Deposits into the Water Development Trust Fund total \$10,240,371 through August 2014 and are currently \$1,240,371 or 13.8 percent above budgeted revenues.

- 1 -

**STATE WATER COMMISSION
ALLOCATED PROGRAM EXPENDITURES
FOR THE PERIOD ENDED OCTOBER 31, 2014
BIENNIUM COMPLETE: 67%**

PROGRAM	SALARIES/ BENEFITS	OPERATING EXPENSES	GRANTS & CONTRACTS	21-Nov-14 PROGRAM TOTALS
ADMINISTRATION				
Allocated	2,492,011	2,323,966		4,815,977
Expended	1,630,345	1,278,047		2,908,392
Percent	65%	55%		60%
			Funding Source:	
			General Fund:	0
			Federal Fund:	41,505
			Special Fund:	2,866,887
PLANNING AND EDUCATION				
Allocated	1,334,304	301,110	107,000	1,742,414
Expended	816,805	104,346	21,322	942,473
Percent	61%	35%	20%	54%
			Funding Source:	
			General Fund:	0
			Federal Fund:	105,937
			Special Fund:	836,536
WATER APPROPRIATION				
Allocated	5,151,915	560,947	1,230,267	6,943,129
Expended	3,101,674	434,087	703,099	4,238,860
Percent	60%	77%	57%	61%
			Funding Source:	
			General Fund:	0
			Federal Fund:	15,630
			Special Fund:	4,223,230
WATER DEVELOPMENT				
Allocated	6,258,796	14,555,905	3,313,200	24,127,901
Expended	3,858,537	5,580,843	171,590	9,610,971
Percent	62%	38%	5%	40%
			Funding Source:	
			General Fund:	0
			Federal Fund:	992,909
			Special Fund:	8,618,062
STATEWIDE WATER PROJECTS				
Allocated			629,600,000	629,600,000
Expended			97,702,746	97,702,746
Percent			16%	16%
			Funding Source:	
			General Fund:	0
			Federal Fund:	0
			Special Fund:	97,702,746
ATMOSPHERIC RESOURCE				
Allocated	993,898	712,307	4,694,692	6,400,897
Expended	675,384	283,332	1,458,729	2,417,444
Percent	68%	40%	31%	38%
			Funding Source:	
			General Fund:	0
			Federal Fund:	0
			Special Fund:	2,417,444
SOUTHWEST PIPELINE				
Allocated	468,291	12,927,500	101,616,741	115,012,532
Expended	392,853	4,369,449	26,500,010	31,262,312
Percent	84%	34%	26%	27%
			Funding Source:	
			General Fund:	0
			Federal Fund:	741,378
			Special Fund:	30,520,934
NORTHWEST AREA WATER SUPPLY				
Allocated	650,021	16,498,500	53,800,540	70,949,061
Expended	348,364	1,284,602	730,534	2,363,500
Percent	54%	8%	1%	3%
			Funding Source:	
			General Fund:	0
			Federal Fund:	0
			Special Fund:	2,363,500
PROGRAM TOTALS				
Allocated	17,349,236	47,880,235	794,362,440	859,591,911
Expended	10,823,963	13,334,706	127,288,029	151,446,698
Percent	62%	28%	16%	18%
FUNDING SOURCE:				
GENERAL FUND	0	0	GENERAL FUND:	622,825
FEDERAL FUND	37,310,283	1,897,358	FEDERAL FUND:	2,082,856
SPECIAL FUND	822,281,628	149,549,340	SPECIAL FUND:	161,756,881
TOTAL	859,591,911	151,446,698	TOTAL:	164,462,562

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND
2013-2015 BIENNIUM**

Oct-14

	BUDGET	SWC/SE APPROVED	OBLIGATIONS EXPENDITURES	REMAINING UNOBLIGATED	REMAINING UNPAID
FLOOD CONTROL					
FARGO	136,740,340	136,740,340	10,033,402	0	126,706,938
GRAFTON	7,175,000	7,175,000	0	0	7,175,000
MOUSE RIVER FLOOD CONTROL	36,618,860	5,616,186	33,296	31,002,674	5,582,889
BURLEIGH COUNTY	1,469,900	1,469,900	859,112	0	610,788
VALLEY CITY	12,890,919	12,890,919	0	0	12,890,919
LISBON	3,325,650	3,325,650	0	0	3,325,650
FORT RANSOM	225,000	225,000	0	0	225,000
RICE LAKE RECREATION DISTRICT	2,842,200	2,842,200	0	0	2,842,200
RENWICK DAM	1,281,376	1,281,376	263,419	0	1,017,957
SHEYENNE RIVER FLOOD CONTROL	6,976,411			6,976,411	
FLOODWAY PROPERTY ACQUISITIONS					
MINOT	33,684,329	33,684,329	5,250,816	0	28,433,513
WARD COUNTY	9,698,169	9,698,169	2,157,559	0	7,540,610
VALLEY CITY	1,822,598	1,822,598	1,089,502	0	733,096
BURLEIGH COUNTY	442,304	442,304	209,655	0	232,649
SAWYER	184,260	184,260	0	0	184,260
LISBON	888,750	888,750	529,722	0	359,028
STATE WATER SUPPLY					
REGIONAL & LOCAL WATER SYSTEMS	103,165,741	103,165,741	26,640,910	0	76,524,831
FARGO WATER TREATMENT PLANT	27,864,069	27,864,069	1,981,866	0	25,882,203
SOUTHWEST PIPELINE PROJECT	102,106,673	102,106,673	30,520,934	0	71,585,739
NORTHWEST AREA WATER SUPPLY	21,241,433	7,241,433	1,031,096	14,000,000	6,210,337
COMMUNITY WATER LOAN FUND - BND	15,000,000	15,000,000	5,000,000	0	10,000,000
WESTERN AREA WATER SUPPLY AUTHORITY	79,000,000	79,000,000	12,802,990	0	66,197,010
RED RIVER VALLEY WATER SUPPLY	11,000,000	3,295,000	375,034	7,705,000	2,919,966
IRRIGATION DEVELOPMENT	5,493,548	949,869	427,261	4,543,679	522,608
GENERAL WATER MANAGEMENT					
OBLIGATED	31,748,613	31,748,613	7,964,141	0	23,784,472
UNOBLIGATED	18,257,627			18,257,627	0
DEVILS LAKE					
BASIN DEVELOPMENT	68,085	68,085	7,107	0	60,978
OUTLET	872,403	872,403	1,601	0	870,802
OUTLET OPERATIONS	15,140,805	15,140,805	4,866,583	0	10,274,222
DL TOLNA COULEE DIVIDE	102,975	102,975	0	0	102,975
DL EAST END OUTLET	2,774,011	2,774,011	0	0	2,774,011
DL GRAVITY OUTFLOW CHANNEL	13,686,839	13,686,839	0	0	13,686,839
DL STANDPIPE REPAIR	1,300,000	1,300,000	342,595	0	957,405
WEATHER MODIFICATIONS	805,202	805,202	391,437	0	413,765
TOTALS	705,894,092	623,408,699	112,780,040	82,485,393	510,628,660

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND
2013-2015 Biennium**

PROGRAM OBLIGATION

Approved SWC		Dept	Sponsor	Project	Initial	Total	Total	Oct-14
By	No				Approved	Approved	Payments	Balance
Flood Control:								
SB 2020	1928-01	5000	City of Fargo	Fargo Flood Control Project	6/23/2009	136,740,340	10,033,402	126,706,938
	1771	5000	City of Grafton	Grafton Flood Control Project	3/11/2010	7,175,000	0	7,175,000
SB 2371	1974-06	5000	Souris River Joint WRD	Mouse River Enhanced Flood - pd to SRJWRB	12/9/2011	16,257	16,257	0
	1974-06	5000	Souris River Joint WRD	Mouse River Enhanced Flood - pd to SRJWRB	3/17/2014	200,000	7,246	192,754
SB 2371	1974-08	5000	Souris River Joint WRD	Mouse River Reconnaissance Study to Meet Fed Guid	2/15/2013	10,603	9,793	809
	1974-09	5000	Souris River Joint WRD	4th Ave NE & Napa Valley/Forest Rd Flood Improve	10/7/2013	3,830,400	0	3,830,400
	1974-10	5000	Souris River Joint WRD	International Joint Commission Study Board	5/29/2014	302,500	0	302,500
	1993-01	5000	City of Minot	Downtown Infrastructure Improvements	9/15/2014	1,256,426	0	1,256,426
SB 2371	1992-01	5000	Burleigh Co. WRD	Burleigh County's Tavis Road Storm Water Pump Stati	6/13/2012	1,469,900	859,112	610,788
SB 2371	1344-01	5000	Valley City	Sheyenne River Valley Flood Control Project	6/19/2013	350,625	0	350,625
	1504-01	5000	Valley City	Permanent Flood Protection Project	5/29/2014	10,032,235	0	10,032,235
	1504-02	5000	Valley City	Permanent Flood Protection Project (LOAN)	5/29/2014	2,508,059	0	2,508,059
SB 2371	1344	5000	City of Lisbon	Sheyenne River Valley Flood Control Project	6/19/2013	700,650	0	700,650
	1991-01	5000	City of Lisbon	Permanent Flood Protection Project	5/29/2014	1,918,698	0	1,918,698
	1991-02	5000	City of Lisbon	Permanent Flood Protection Project (LOAN)	5/29/2014	706,302	0	706,302
SB 2371	1344	5000	Fort Ransom	Sheyenne River Valley Flood Control Project	6/19/2013	225,000	0	225,000
	1997	5000	Rice Lake Recreation District	Renwick Dam Rehabilitation	6/13/2012	2,842,200	0	2,842,200
	849	5000	Pembina Co. WRD	Renwick Dam Rehabilitation	6/26/2014	1,281,376	263,419	1,017,957
Subtotal Flood Control						171,566,571	11,189,230	160,377,341
Floodway Property Acquisitions:								
SB 2371	1993-05	5000	City of Minot	Minot Phase 1 - Floodway Acquisitions	1/27/2012	9,276,071	5,250,816	4,025,255
	1993-05	5000	City of Minot	Minot Phase 2 - Floodway Acquisitions	10/7/2013	24,408,258	0	24,408,258
SB 2371	1523-05	5000	Ward County	Ward County Phase 1, 2 & 3 - Floodway Acquisitions	1/27/2012	9,525,664	1,985,054	7,540,610
SB 2371	1523-02	5000	Ward County	Chapareille Highwater Berm Project	2/27/2013	172,505	172,505	0
SB 2371	1504-05	5000	Valley City	Valley City Phase 1 - Floodway Acquisitions	7/23/2013	1,822,598	1,089,502	733,096
SB 2371	1992-05	5000	Burleigh Co. WRD	Burleigh Co. Phase 1 - Floodway Acquisitions	3/7/2012	442,304	209,655	232,649
SB 2371	2000-05	5000	City of Sawyer	Sawyer Phase 1 - Floodway Acquisitions	6/13/2012	184,260	0	184,260
	1991-05	5000	City of Lisbon	Lisbon - Floodway Acquisition	9/27/2013	888,750	529,722	359,028
Subtotal Floodway Property Acquisitions						46,720,410	9,237,254	37,483,156
Water Supply Advances:								
SWC	2373-24	5000	Garrison Diversion	Traill Regional Rural Water (Phase III)	8/18/2009	1,368,000	1,205,019	162,981
State Water Supply Grants:								
	2373-32	5000	North Central Rural Water Consortium	NCRW (Berthold-Carpio)	6/21/2011	2,807,902	2,807,902	0
	2373-33	5000	Stutsman Rural RWD	Stutsman Rural Water System - Phase II	3/17/2014	3,795,692	3,755,312	40,380
	2373-35	5000	Grand Forks - Traill RWD	Grand Forks - Traill County WRD	6/13/2012	2,725,415	1,782,624	942,790
	2373-36	5000	Stutsman Rural RWD	Stutsman Rural Water System - Phase IIB, III	2/27/2013	12,155,000	6,145,861	6,009,139
	2373-37	5000	North Central Rural Water Consortium	NCRW (Plaza)	2/27/2013	299,300	267,748	31,552
	1782-01	5000	McLean-Sheridan RWD	Blue & Brush Lakes Expansion Project	5/29/2014	0	0	0
	2373-38	5000	Stutsman Rural RWD	Kidder Co & Carrington Area Expansion	7/23/2013	1,207,000	0	1,207,000
	2373-39	5000	North Central Rural Water Consortium	Carpio Berthold Phase 2	5/29/2014	3,050,000	71,295	2,978,705
	2373-40	5000	South Central Regional Water System	Kidder County Expansion	5/29/2014	0	0	0
	2373-41	5000	North Central Rural Water Consortium	Granville-Deering Area	5/29/2014	4,980,000	58,786	4,921,214
	2050-01	5000	Missouri West Water System	South Mandan	3/17/2014	776,000	363,191	412,809
	2050-02	5000	Grand Forks Traill RWD	Improvements	10/7/2013	3,390,000	197,654	3,192,346
	2050-03	5000	Northeast Regional WD	Langdon RWD - ABM Pipeline Phase 1	10/7/2013	1,040,000	661,559	378,441
	2050-04	5000	Northeast Regional WD	Langdon RWD - North Valley Nekoma	10/7/2013	800,000	78,125	721,875
	2050-05	5000	Northeast Regional WD	North Valley WD - ABM Pipeline Phase 1	10/7/2013	565,000	111,916	453,084
	2050-06	5000	Northeast Regional WD	North Valley WD - 93 Street	10/7/2013	1,290,000	289,556	1,000,444
	2050-07	5000	Northeast Regional WD	North Valley WD - Rural Expansion	5/29/2014	1,800,000	169,916	1,630,084
	2050-08	5000	Walsh RWD	Ground Storage	10/7/2013	684,000	465,162	218,838
	2050-09	5000	City of Park River	Water Tower	10/7/2013	1,350,000	72,323	1,277,678
	2050-10	5000	City of Surrey	Water Supply Improvements	10/7/2013	1,500,000	584,923	915,077
	2050-11	5000	Cass RWD	Phase 2 Plant Improvements	10/7/2013	2,600,000	4,552	2,595,448
	2050-12	5000	Central Plains WD	Improvements	10/7/2013	1,450,000	5,438	1,444,563
	2050-13	5000	City of Mandan	New Raw Water Intake	10/7/2013	1,270,000	0	1,270,000
	2050-14	5000	City of Mandan	Water Treatment Plant Improvements	10/7/2013	726,000	180,435	545,565
	2050-15	5000	City of Washburn	New Raw Water Intake	10/7/2013	1,795,000	0	1,795,000
	2050-16	5000	Tri-County RWD	Improvements	10/7/2013	650,000	0	650,000
	2050-17	5000	Barnes Rural RWD	Improvements	10/7/2013	5,243,585	211,353	5,032,232
	2050-18	5000	City of Grafton	Water Treatment Plant Phase 3	10/7/2013	2,600,000	0	2,600,000
	2050-19	5000	City of Grand Forks	Water Treatment Plant Improvements	10/7/2013	4,990,000	291,787	4,698,213
	2050-20	5000	City of Dickinson	Capital Infrastructure	2/27/2014	17,765,348	0	17,765,348
	2050-21	5000	Watford City	Capital Infrastructure	2/27/2014	6,700,000	4,211,966	2,488,034
	2050-22	5000	City of Williston	Capital Infrastructure	2/27/2014	7,000,000	2,133,651	4,866,349
	2050-23	5000	Greater Ramsey RWD	SW Nelson County Expansion	3/17/2014	4,500,000	512,857	3,987,143
	2050-24	5000	All Seasons Water District	System 1 Well Field Expansion	9/15/2014	292,500	0	292,500
Subtotal State Water Supply						103,165,741	26,640,910	76,524,831
	1984-02	5000	City of Fargo	Fargo Water Treatment Plant	3/17/2014	27,864,069	1,981,866	25,882,203
	1736-05	8000	SWPP	Southwest Pipeline Project	7/1/2013	102,106,673	30,520,934	71,585,739
	2374	9000	NAWS	Northwest Area Water Supply	7/1/2013	7,241,433	1,031,096	6,210,337
	2044-01	5000	Bank of North Dakota	Community Water Facility Fund	10/7/2013	15,000,000	5,000,000	10,000,000
	1973-02	5000	WAWSA	WAWSA - (GRANT)	10/7/2013	39,500,000	6,162,136	33,337,864
	1973-03	5000	Bank of North Dakota	WAWSA - (LOAN)	10/7/2013	39,500,000	6,640,854	32,859,146
	325-101	5000	RRVWSP	Red River Valley Water Supply - CH2Mhill	2/27/2014	375,000	375,000	0
	325-102	5000	RRVWSP	Red River Valley Water Supply - Intake Design Study	5/29/2014	2,500,000	34	2,499,966
	325-103	5000	RRVWSP	Garrison Diversion - Easements	5/29/2014	420,000	0	420,000
Subtotal State Water Supply						234,507,175	51,711,921	182,795,254

STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND
2013-2015 Biennium

PROGRAM OBLIGATION

Approved SWC		Dept	Sponsor	Project	Initial Approved Date	Total Approved	Total Payments	Oct-14 Balance
By	No							
Irrigation Development:								
SWC	222	5000	Buford Trenton Irrigation	Buford Trenton Irrigation Transmission Line Reroute	7/23/2013	350,000	350,000	0
SWC	1389	5000	Bank of ND	BND AgPace Program	10/23/2001	25,966	25,966	0
SWC	1389	5000	Bank of ND	BND AgPace Program	12/13/2013	200,000	1,295	198,705
SWC	AOC/IRA	5000	ND Irrigation Assoc	ND Irrigation Association	7/1/2013	100,000	50,000	50,000
SWC	1968	5000	Garrison Diversion	2009-11 McClusky Canal Mile Marker 7.5 Irrigation Pro	6/1/2010	17,582	0	17,582
SWC	1968	5000	Garrison Diversion	McClusky Canal Mile Marker 10 & 49 Irrigation Project	3/17/2014	256,321	0	256,321
Subtotal Irrigation Development						949,869	427,261	522,608
General Water Management								
Hydrologic Investigations:								
						900,000		
SWC	1400/13	3000	Houston Engineering	Houston Engineering Water Permit Application Review	11/7/2011	1,975	1,975	0
SWC	1400/14	3000	Houston Engineering	Houston Engineering Water Permit Application Review	11/29/2012	10,910	3,991	6,919
SWC	1400	3000	Gordon Sturgeon	Consultant Services	3/23/2013	39,200	39,200	0
SWC	1400	3000	Gordon Sturgeon	Consultant Services	4/16/2014	24,800	24,800	0
SE	XXX	3000	Manikowski Well Drilling	Manikowski Well Drilling Inc.	3/20/2014	12,850	12,850	0
	862/859	3000	Arletta Herman	Arletta Herman- Well Monitor	3/13/2013	2,668	2,668	0
	862	3000	Lori Bjorgen	Lori Bjorgen - Well Monitor	3/13/2014	224	224	0
	967	3000	Holly Messmer - McDaniel	Holly Messmer - McDaniel - Well Monitor	4/19/2012	0	0	0
	1690	3000	Holly Messmer - McDaniel	Holly Messmer - McDaniel - Well Monitor	4/19/2012	936	936	0
	1703	3000	Thor Brown	Thor Brown- Well Monitor	3/27/2012	3,827	3,827	0
	1707	3000	Thor Brown	Thor Brown- Well Monitor	4/26/2011	2,947	2,947	0
	1761	3000	Gloria Roth	Gloria Roth - Well Monitor	4/19/2013	1,036	1,036	0
	1761	3000	Fran Dobits	Fran Dobits - Well Monitor	6/1/2011	1,764	1,763	0
	2041	3000	U. S. Geological Survey	Conversion of 17 groundwater recorder wells to real-tin	7/16/2013	34,000	34,000	0
	1395	3000	U. S. Geological Survey	Investigations of Water Resources in North Dakota	9/25/2013	491,275	491,275	0
	1395D	3000	U. S. Geological Survey	Eaton Irrigation Project on the Souris River	7/13/2012	15,300	0	15,300
Hydrologic Investigations Obligations Subtotal						643,711	621,492	22,220
Remaining Hydrologic Investigations Authority						256,289		
Hydrologic Investigations Authority Less Payments								
General Projects Obligated						26,321,820	2,815,856	23,505,964
General Projects Completed						4,526,794	4,526,794	0
Subtotal General Water Management						31,748,613	7,964,141	23,784,472
Devils Lake Basin Development:								
SWC	416-01	5000	DLJWRB	DL Joint WRB Manager	7/1/2013	60,000	0	60,000
SWC	416-05	2000	Joe Belford	DL Downstream Acceptance	7/1/2013	8,085	7,107	978
SWC	416-07	5000	Multiple	Devils Lake Outlet	7/1/2013	872,403	1,601	870,802
SWC	416-10	4700	Operations	Devils Lake Outlet Operations	7/1/2013	15,140,805	4,866,583	10,274,222
SWC	416-13	5000	Multiple	DL Tolna Coulee Divide	7/1/2013	102,975	0	102,975
SWC	416-15	5000	Multiple	DL East End Outlet	7/1/2013	2,774,011	0	2,774,011
SWC	416-17	5000	Multiple	DL Emergency Gravity Outflow Channel	9/21/2013	13,686,839	0	13,686,839
SWC	416-19	5000	Multiple	DL Standpipe Repairs	12/13/2013	1,300,000	342,595	957,405
Devils Lake Subtotal						33,945,118	5,217,885	28,727,233
SWC		7600		Weather Modification	7/1/2013	805,202	391,437	413,765
TOTAL						623,408,699	112,780,040	510,628,660

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND
2013-2015 Biennium
Resources Trust Fund**

GENERAL PROJECT OBLIGATIONS

Approved SWC By	No	Dept	Approved Biennium	Sponsor	Project	Initial Approved Date	Total Approved	Total Payments	Oct-14 Balance
HB 1009	1986	5000	2013-15	USDA-APHIS,ND Dept Agric	USDA Wildlife	8/20/2013	250,000	120,829	129,171
HB 2305	1963	5000	2009-11	Emmons County WRD	Beaver Bay Embankment Feasibility Study	8/10/2009	53,644	35,566	18,078
SB 2020	1131	5000	2009-11	Nelson Co. WRD	Flood Related Water Projects	6/1/2011	55,455	0	55,455
SE	1967	5000	2009-11	Grand Forks Co. WRD	Grand Forks County Legal Drain No. 55 2010 Contru	11/30/2010	9,652	0	9,652
SE	1301	5000	2009-11	City of Lidgerwood	City of Lidgerwood Engineering & Feasibility Study for	2/4/2011	15,850	0	15,850
SE	1607	5000	2011-13	Ward Co. WRD	Flood Inundation Mapping of Areas Along Souris & Dr	6/15/2011	13,011	0	13,011
SE	1301	5000	2011-13	City of Wahpeton	City of Wahpeton Water Reuse Feasibility Study/Rich	9/8/2011	2,500	0	2,500
SE	391	5000	2011-13	Sargent Co WRD	Sargent Co WRD, Silver Lake Dam Emergency Repa	10/12/2011	2,800	0	2,800
SE	1312	5000	2011-13	Walsh Co. WRD	Skyrud Dam 2011 EAP	12/15/2011	10,000	0	10,000
SE	1312	5000	2011-13	Walsh Co. WRD	Union Dam 2011 EAP	12/15/2011	10,000	0	10,000
SE	1998	5000	2011-13	Grand Forks Co. WRD	Upper Turtle River Dam #1 2012 EAP	6/28/2012	10,000	0	10,000
SE	1303	5000	2011-13	Sargent Co WRD	Shortfoot Creek Preliminary Soils Analysis & Hydrauli	6/29/2012	24,861	0	24,861
SE	2002	5000	2011-13	Grand Forks Co. WRD	Trutle River Dam #4 2012 EAP	6/29/2012	10,000	0	10,000
SE	2005	5000	2011-13	Grand Forks Co. WRD	Turtle River Dam #8 2012 EAP	6/29/2012	10,000	0	10,000
SE	2008	5000	2011-13	City of Mapleton	Mapleton Flood Control Levee Project	6/29/2012	24,410	0	24,410
SE	AOC/RRBC	5000	2011-13	Red River Basin Commission	Stream Gaging & Precipitation Network Study in the F	9/14/2012	20,000	0	20,000
SE	1991	5000	2011-13	City of Lisbon	Sheyenne River Snagging & Clearing Project	2/12/2013	5,000	0	5,000
SE	1461	5000	2011-13	Pembina Co. WRD	O'Hara Bridge Bank Stabilization	4/26/2013	24,633	0	24,633
SE	1289	5000	2011-13	McKenzie Co. Weed Control I	Control of Noxious Weeds on Sovereign Lands	6/11/2013	24,810	0	24,810
SE	1174	5000	2013-15	Richland Co. WRD	Drain No. 31 Reconstruction Project	8/30/2013	32,393	0	32,393
SE	1640	5000	2013-15	U.S. Geological Survey	Maintenance of gaging station on Missouri River belo	9/25/2013	8,710	0	8,710
SE	1296	5000	2013-15	Pembina Co. WRD	Bathgate-Hamilton & Carlisle Watershed Study	10/17/2013	38,500	0	38,500
SE	1291	5000	2013-15	Mercer County WRD	Antelope Creek Snagging & Clearing Project	3/27/2014	21,714	0	21,714
SE	867-01	5000	2013-15	NDSU	NDSU - Water sampling Dr. Xinhua Jia Dept of Ag	4/22/2014	5,000	0	5,000
SE	507	5000	2013-15	Grant County WRD	Raleigh Dam Emergency Action Plan	7/1/2014	12,000	0	12,000
SE	399	5000	2013-15	Barnes Co WRD	Kathryn Dam Feasibility Study	9/19/2014	21,250	0	21,250
SE	1814	5000	2013-15	Richland Co. WRD	Wild Rice River Snagging & Clearing - Bridge Locatio	10/16/2014	34,500	0	34,500
SE	274	5000	2013-15	City of Neche	FEMA Levee Certification Feasibility Study	10/17/2014	37,500	0	37,500
SWC	620	5000	2007-09	Lower Heart WRD	Mandan Flood Control Protective Works (Levee)	9/29/2008	125,396	0	125,396
SWC	1921	5000	2007-09	Morton Co. WRD	Square Butte Dam No. 6/(Harmon Lake) Recreation I	3/23/2009	821,058	32,616	788,442
SWC	1638	5000	2009-11	Mutiple	Red River Basin Non-NRCS Rural/Farmstead Ring D	6/23/2009	226,364	8,500	217,864
SWC	1069	5000	2009-11	North Cass Co. WRD	Cass County Drain No. 13 Improvement Reconstructi	8/18/2009	122,224	0	122,224
SWC	1088	5000	2009-11	Maple River WRD	Cass County Drain No. 37 Improvement Recon	8/18/2009	92,668	0	92,668
SWC	1960	5000	2009-11	Ward Co. WRD	Puppy Dog Coulee Flood Control Diversion Ditch Con	8/18/2009	796,976	0	796,976
SWC	322	5000	2009-11	ND Water Education Foundat	ND Water: A Century of Challenge	2/22/2010	36,800	0	36,800
SWC	1244	5000	2009-11	Trail Co. WRD	Trail Co. Drain No. 27 (Moen) Reconstruction & Exte	3/11/2010	336,491	0	336,491
SWC	1577	5000	2009-11	Mercer Co. WRD & City of He	Hazen Flood Control Levee (1517) & FEMA Accredite	3/11/2010	184,984	0	184,984
SWC	281	5000	2009-11	Three Affiliated Tribes	Three Affiliated Tribes/Fort Berthold Irrigation Study	10/26/2010	37,500	0	37,500
SWC	646	5000	2009-11	City of Fargo	Christine Dam Recreation Retrofit Project	10/26/2010	184,950	0	184,950
SWC	646	5000	2009-11	City of Fargo	Hickson Dam Recreation Retrofit Project	10/26/2010	44,280	0	44,280
SWC	347	5000	2009-11	City of Velva	City of Velva's Flood Control Levee System Certificat	3/28/2011	102,000	0	102,000
SWC	1161	5000	2009-11	Pembina Co. WRD	Drain 55 Improvement Reconstruction	3/28/2011	13,846	0	13,846
SWC	1245	5000	2009-11	Trail Co. WRD	Trail Co. Drain No. 28 Extension & Improvement Prc	3/28/2011	336,007	0	336,007
SWC	1969	5000	2009-11	Walsh Co. WRD	Walsh Co. Construction of Legal Assessment Drain #	3/28/2011	38,154	0	38,154
SWC	1970	5000	2009-11	Walsh Co. WRD	Walsh Co. Construction of Legal Assessment Drain #	3/28/2011	39,115	0	39,115
SWC	1101	5000	2011-13	Dickey Co. WRD	Yorktown-Maple Drainage Improvement Dist No. 3	9/21/2011	354,500	0	354,500
SWC	1101	5000	2011-13	Dickey-Sargent Co WRD	Riverdale Township Improvement District #2 - Dickey	9/21/2011	500,000	0	500,000
SWC	1219	5000	2011-13	Sargent Co WRD	City of Forman Floodwater Outlet	9/21/2011	31,472	0	31,472
SWC	1252	5000	2011-13	Walsh Co. WRD	Walsh Co. Reconstruction Drain No. 97	9/21/2011	24,933	0	24,933
SWC	1705	5000	2011-13	Red River Joint Water Resou	Red River Joint WRD Watershed Feasibility Study - F	9/21/2011	60,000	0	60,000
SWC	1975	5000	2011-13	Walsh Co. WRD	Walsh Co. Drain No. 31 Reconstruction Project	9/21/2011	37,742	0	37,742
SWC	1977	5000	2011-13	Dickey-Sargent Co WRD	Jackson Township Improvement Dist. #1	9/21/2011	500,000	0	500,000
SWC	829	5000	2011-13	Rush River WRD	Rush River WRD Berlin's Township Improvement Dis	10/19/2011	163,695	62,378	101,317
SWC	1224	5000	2011-13	Trail Co. WRD	Preston Floodway Reconstruction Project	10/19/2011	208,570	0	208,570
SWC	1978	5000	2011-13	Richland & Sargent Joint WRI	Richland & Sargent WRD RS Legal Drain No. 1 Exter	10/19/2011	245,250	0	245,250
SWC	1918	5000	2001-13	Maple River WRD	Normanna Township Improvement District No. 71	12/9/2011	287,900	0	287,900
SWC	1983	5000	2011-13	City of Harwood	City of Harwood Engineering Feasibility Study	12/9/2011	62,500	0	62,500
SWC	1396	5000	2011-13	U.S. Geological Survey	(USGS) Missouri River Geomorphic Assessment	3/7/2012	90,000	50,000	40,000
SWC	1989	5000	2011-13	Barnes Co WRD	Hobart Lake Outlet Project	3/7/2012	266,100	0	266,100
SWC	1990	5000	2011-13	Mercer Co. WRD	Lake Shore Estates High Flow Diverstion Project	3/7/2012	43,821	0	43,821
SWC	227	5000	2011-13	Eaton Flood Irrigation District	District's Mouse River Riverbank Stabilization Project	6/13/2012	120,615	0	120,615
SWC	1063	5000	2011-13	Rush River WRD	Amenia Township Improvement District Drain No. 74	6/13/2012	459,350	0	459,350
SWC	1344	5000	2009-11	Southeast Cass WRD	Sheyenne Diversion Exterior Pump Station	6/13/2012	3,751	0	3,751
SWC	2007	5000	2011-13	Maple River WRD	Ponliac Township Improvement District No. 73 Projec	6/13/2012	500,000	0	500,000
SWC	2010	5000	2011-13	Barnes Co WRD	Meadow Lake Outlet	6/13/2012	500,000	0	500,000
SWC	1878-02	5000	2011-13	Maple River WRD	Upper Maple River Dam Environmental Assessment	6/13/2012	112,500	0	112,500
SWC	2009-02	5000	2011-13	Southeast Cass WRD	Recertification of the Horace to West Fargo Diversior	9/17/2012	72,600	42,835	29,765
SWC	1401	5000	2009-11	Pembina Co. WRD	International Boundary Roadway Dike Pembina	9/27/2012	331,799	70,767	261,032
SWC	240	5000	2011-13	Eddy County WRD	Warwick Dam Repair Project	12/7/2012	110,150	0	110,150
SWC	1705	5000	2011-13	Red River Joint Water Resou	Red River Basin Distributed Plan Study	12/7/2012	560,000	0	560,000
SWC	2019	5000	2011-13	Valley City	Sheyenne River Snagging & Clearing Project	12/7/2012	75,000	0	75,000
SWC	346	5000	2011-13	Williams County WRD	Epping Dam Evaluation Project	2/27/2013	66,200	0	66,200
SWC	1135	5000	2011-13	Pembina Co. WRD	Drain #4 Reconstruction Project	6/19/2013	221,628	0	221,628
SWC	1207	5000	2011-13	Richland Co. WRD	Drain #65 Extension Project	6/19/2013	123,200	99,063	24,137
SWC	1312	5000	2011-13	Walsh Co. WRD	Forest River Flood Control Feasibility Study	6/19/2013	79,956	0	79,956
SWC	1438	5000	2011-13	Cavalier County WRD	Mulberry Creek Phase IV Reconstruction Project	6/19/2013	324,010	0	324,010
SWC	1992	5000	2011-13	Burleigh Co. WRD	Burnt Creek Flood Restoration Project	6/19/2013	87,805	0	87,805
SWC	2022	5000	2011-13	Pembina Co. WRD	Drain #73 Project	6/19/2013	350,400	0	350,400
SWC	AOC/RRBC	5000	2013-15	Red River Basin Commission	Red River Basin Commission Contractor	7/1/2013	200,000	100,000	100,000
SWC	PS/WRD/MRJ	5000	2013-15	Missouri River Joint WRB	Missouri River Joint Water Board (MRRIC) T. FLECK	7/1/2013	40,000	19,266	20,734
SWC	PS/WRD/MRJ	5000	2013-15	Missouri River Joint WRB	Missouri River Joint Water Board, (MRJWB) Start up	7/1/2013	20,000	0	20,000
SWC	AOC/WEF	5000	2013-15	ND Water Education Foundat	ND Water Magazine	7/1/2013	36,000	18,000	18,000
SWC	PS/WRD/USRJW	5000	2013-15	Upper Sheyenne River Joint V	Upper Sheyenne River WRB Administration (USRJW)	7/1/2013	12,000	2,876	9,124
SWC	1859	5000	2013-15	ND Dept of Health	NonPoint Source Pollution, Section 319	8/20/2013	200,000	143,287	56,713
SWC	1270	5000	2013-15	Burleigh Co. WRD	Apple Creek Industrial Park Levee Feasibility Study	10/7/2013	65,180	0	65,180

**STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND
2013-2015 Biennium
Resources Trust Fund**

GENERAL PROJECT OBLIGATIONS

Approved SWC		Dept	Approved		Project	Initial	Total	Total	Oct-14
By	No		Biennium	Sponsor		Approved			Approved
						Date			
SWC	2004	5000	2013-15	Grand Forks Co. WRD	Drain No. 57 Project	10/7/2013	413,576	0	413,576
SWC	2040	5000	2013-15	Walsh Co. WRD	Drain #74 Project	10/7/2013	317,852	0	317,852
SWC	PS/WRD/MRJ	5000	2013-15	Missouri River Joint WRB	Missouri River Coordinator	10/7/2013	175,000	62,269	112,731
SWC	1056	5000	2013-15	Bottineau Co. WRD	Scandia/Scotia Drain Project	12/13/2013	140,634	0	140,634
SWC	1242	5000	2013-15	Traill Co. WRD	Rust Drain No. 24 Project	12/13/2013	187,736	0	187,736
SWC	1554/2046?	5000	2013-15	McLean Co. WRD	City of Underwood Floodwater Outlet Project	12/13/2013	1,100,727	0	1,100,727
SWC	1758	5000	2013-15	USGS	Stochastic Model for the Mouse River Basin	12/13/2013	200,000	120,000	80,000
SWC	2043	5000	2013-15	Pembina Co. WRD	District's Drain 78 Outlet Extension Project	12/13/2013	287,778	0	287,778
SWC	2046	5000	2013-15	Walsch Co. WRD	North Branch Park River Comprehensive Flood Dam	12/13/2013	134,400	0	134,400
SWC	1878-02	5000	2011-13	Maple-Steele WRD	Upper Maple River Dam Construction Phase	12/13/2013	3,991,500	0	3,991,500
SWC	CON/WIL/CARL	5000	2013-15	Garrison Diversion Conserva	Will and Carlson Consulting Contract	12/13/2013	70,000	27,179	42,821
SWC	1082	5000	2013-15	Rush River WRD	Cass Co. Drain No. 30 Channel Improvement Project	3/17/2014	142,818	0	142,818
SWC	2008	5000	2013-15	City of Mapleton	Recertification of Flood Control Levee System Projec	3/17/2014	718,941	0	718,941
SWC	1140	5000	2013-15	Pembina Co. WRD	Drain No. 11 Outlet Extension Project	5/29/2014	125,760	0	125,760
SWC	1418	5000	2013-15	City of Bisbee	Big Coulee Dam Feasibility Study	5/29/2014	65,000	0	65,000
SWC	1444	5000	2013-15	City of Pembina	2014 Flood Protection System Modification Project	5/29/2014	1,031,981	178,982	852,999
SWC	1577	5000	2013-15	City of Killdeer & Dunn Co.	Floodplain Mapping Project	5/29/2014	55,000	0	55,000
SWC	1753/1523?	5000	2013-15	Ward Co. Hwy Dept	County Road 18 Flood Control Project	5/29/2014	325,208	0	325,208
SWC	2045	5000	2013-15	Mercer Co. WRD	LiDAR Collection Project	5/29/2014	117,000	106,575	10,425
SWC	2048	5000	2013-15	City of Marion	Marion Flood Mitigation & Lagoon Drainage Project	5/29/2014	188,366	0	188,366
SWC	1932	5000	2005-07	Nelson Co. WRD	Michigan Spillway Rural Flood Assessment	8/15/2014	2,588,924	1,419,796	1,169,128
SWC	1625	5000	2013-15	Houston Engineering	(OHWM) Ordinary High Water Mark Delineations	8/20/2014	134,418	86,362	48,056
SWC	1227	5000	2011-13	Traill Co. WRD	Mergenthal Drain No. 5 Reconstruction	9/15/2014	155,780	0	155,780
SWC	1285	5000	2016-15	Lamoure Co. Soil Conservati	Lamoure Co Memorial Park Streambank Restoration	9/15/2014	91,042	0	91,042
SWC	1314	5000	2013-15	Wells Co. WRD	Oak Creek Drain Lateral E Reconstruction Project	9/15/2014	73,057	0	73,057
SWC	1613	5000	2013-15	North Cass Co. WRD	Cass County Drain No. 55 Channel Improvements Pr	9/15/2014	99,923	0	99,923
SWC	1613	5000	2013-15	Richland Co. WRD	Drain No. 15 Reconstruction Project	9/15/2014	60,300	0	60,300
SWC	1991	5000	2013-15	City of Lisbon	Sheyenne Riverbank Stabilization Project	9/15/2014	409,300	0	409,300
SWC	2042	5000	2013-15	Bottineau Co. WRD	Haas Coulee Drain Project	9/15/2014	500,000	0	500,000
SWC	2045	5000	2013-15	McKenzie Co WRD	LIDAR Collection Project	9/15/2014	262,308	0	262,308
SWC	2045	5000	2013-15	Federal Coalition Agencies	Federal/State LiDAR Collection Project	9/15/2014	75,000	0	75,000
SWC	PSWRDELM	5000	2013-15	Elm River Joint WRD	Dam #3 Safety Improvements Project	9/15/2014	65,208	0	65,208
SWC	228	5000	2013-15	USGS	Operation & Maint of Gaging Station on the Missouri I	10/2/2014	8,970	8,710	260
SWC	1296	5000	2013-15	Pembina Co. WRD	Bourbanis/Olson Dam Safety Project	10/29/2014	132,680	0	132,680
TOTAL							26,321,820	2,815,856	23,505,964

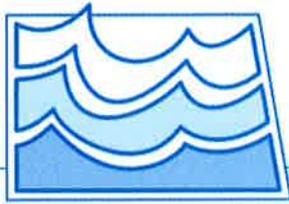
STATE WATER COMMISSION
PROJECTS/GRANTS/CONTRACT FUND
2013-2015 Biennium
Resources Trust Fund

COMPLETED GENERAL PROJECTS

Approver By	SWC No	Dept	Approved Biennium	Sponsor	Project	Initial Approved Date	Total Approved	Total Payments	Oct-14 Balance
SE	1577	5000	2011-13	Burleigh Co. WRD	Fox Island 2012 Flood Hazard Mitigation Evaluation St	5/22/2012	23,900	23,900	0
SE	2003	5000	2011-13	Southeast Cass WRD	Re-Certification of the Horace to West Fargo Diversion	6/29/2012	42,835	42,775	60
SE	1732	5000	2011-13	City of Beulah	Beulah Dam Emergency Action Plan	7/26/2012	20,440	10,440	10,000
SE	2003	5000	2011-13	Southeast Cass WRD	Re-Certification of the West Fargo Diversion Levee Sy:	7/26/2012	45,879	45,879	0
SE	1993	5000	2011-13	Houston Engineering	Minot 100-yr Floodplain Map and Profiles	10/9/2012	10,000	0	10,000
SE	2001	5000	2011-13	Trails Co. WRD	Elm River Diversion Project	10/31/2012	10,423	6,076	4,347
SE	1992	5000	2011-13	Burleigh Co. WRD	Burleigh Co Flood Control Alternatives Assessment	1/30/2013	25,175	16,168	9,007
SE	871	5000	2011-13	Pembina Co. WRD	Pembina Snagging & Clearing Project	6/14/2013	7,500	7,500	0
SE	1395	5000	2013-15	U.S. Geological Survey	Operation & maintenance of seven water level monito	7/16/2013	17,500	17,500	0
SE	2045	5000	2013-15	NCRS & Corps St. Louis	Joint LiDAR Collection	9/12/2013	40,000	40,000	0
SE	1289	5000	2013-15	McKenzie Co. Weed Cor	Control of Noxious Weeds on Sovereign Lands	9/20/2013	10,496	9,779	717
SE	1244	5000	2013-15	Trails Co. WRD	Trails Co. Drain No. 27 (Moon) Lateral Channel Improv	9/27/2013	29,914	23,723	6,191
SE	1814	5000	2013-15	Richland Co. WRD	Wild Rice River Snagging & Clearing - Reach 3	10/17/2013	49,500	48,493	1,007
SE	1814	5000	2013-15	Richland Co. WRD	Wild Rice River Snagging & Clearing - Reach 2	10/17/2013	49,500	49,375	125
SE	1987	5000	2013-15	City of Burlington	Interim Levee Project	11/22/2013	49,000	49,000	0
SE	1814	5000	2013-15	Richland Co. WRD	Wild Rice River Snagging & Clearing - Reach 4	12/13/2013	20,000	20,000	0
SE	BSC	5000	2013-15	Bismarck State College	2014 ND Water Quality Monitoring Conference	2/24/2014	1,000	1,000	0
SE	AOC/WEF	5000	2013-15	ND Water Education Fou	2014 Summer Water Tours Sponsorshi	3/5/2014	2,500	2,500	0
SE	1403	5000	2013-15	ND Water Resources Ins	Institute Fellowship Program 2014-15	3/20/2014	13,850	13,850	0
SE	1667	5000	2013-15	Trails Co. WRD	Goose River Snagging & Clearing Project	4/23/2014	46,750	46,750	0
SE	1311	5000	2013-15	Trails Co. WRD	Buffalo Coulee Snagging & Clearing Project	5/27/2014	25,000	23,363	1,637
SE	NDAWN	5000	2013-15	NDSU	ND Agricultural Weather Network	4/15/214	1,550	1,550	0
SWC	928/988/1508	5000	2011-13	SE Cass WRD	Wild Rice, Bois de Sioux, Antelope Creek Retention St	7/21/2008	60,000	30,415	29,585
SWC	1792	5000	2009-11	Southeast Cass WRD	SE Cass Wild Rice River Dam Study Phase II	12/11/2009	130,000	130,000	0
SWC	1966	5000	2009-11	City of Oxbow	City of Oxbow Emergency Flood Fighting Barrier Syste	6/1/2010	188,400	188,400	0
SWC	416-18	5000	2011-13	ND Game & Fish	DL Johnson Farms Water Storage Site	6/10/2011	125,000	4,316	120,685
SWC	1344	5000	2011-13	Southeast Cass WRD	Southeast Cass Sheyenne River Diversion Low-Flow C	6/14/2011	716,609	33,535	683,074
SWC	980	5000	2011-13	Maple River WRD	Maple River Watershed Food Water Retention Study/ f	9/21/2011	0	0	0
SWC	1219	5000	2011-13	Sargent Co WRD	District Drain No. 4 Reconstruction Project	9/21/2011	125,500	86,723	38,777
SWC	CON/WILL-CA	5000	2011-13	Garrison Diversion	Will/Carlson Consultant	10/17/2011	26,174	0	26,174
SWC	1138	5000	2011-13	Pembina Co. WRD	Drain No. 8 Reconstruction Project	3/7/2012	12,215	5,157	7,058
SWC	PS/WRD/JAM	5000	2011-13	James River Joint WRD	James River Engineering Feasibility Study Phase 1	3/7/2012	29,570	29,490	80
SWC	829	5000	2011-13	Rush River WRD	Rush River Watershed Retention Plan	6/13/2012	0	0	0
SWC	1344	5000	2011-13	Southeast Cass WRD	Sheyenne Diversion Phase VI - Weir Improvements	6/13/2012	225,050	224,192	858
SWC	1344	5000	2009-11	Southeast Cass WRD	Horace Diversion Channel Site A (Section 7 - Phase V	6/13/2012	1,812,822	1,810,744	2,078
SWC	1806-02	5000	2011-13	City of Argusville	Re-Certification of the City of Argusville Flood Control L	6/13/2012	84,164	20,101	64,063
SWC	228	5000	2011-13	U.S. Geological Survey	Additional USGS gage Missouri River- ANNUAL	9/17/2012	8,500	8,500	0
SWC	1996	5000	2011-13	Trails Co. WRD	Drain #62 - Wold Drain Project	9/17/2012	112,400	108,717	3,683
SWC	2012	5000	2011-13	Southeast Cass WRD	Lower Sheyenne River Watershed Retention Plan	9/17/2012	80,000	80,000	0
SWC	2013	5000	2011-13	Richland-Cass Joint WRI	Wild Rice River Watershed Retention Plan	9/17/2012	90,000	90,000	0
SWC	2014	5000	2011-13	Trails Co. WRD	Elm River Watershed Retention Plan	9/17/2012	75,000	62,371	12,629
SWC	2003-02	5000	2011-13	Southeast Cass WRD	Re-Certification of the West Fargo Diversion Levee Sy:	9/17/2012	91,400	91,400	0
SWC	1069	5000	2011-13	North Cass - Rush River	Drain #13 Channel Improvements	9/27/2012	217,000	217,000	0
SWC	1303	5000	2011-13	Sargent Co WRD	Frenier Dam Improvement Project	12/7/2012	158,373	112,027	46,346
SWC	1523	5000	2011-13	Ward Co. WRD	Souris River Minot to Burlington Snagging & Clearing	12/7/2012	109,000	109,000	0
SWC	2020	5000	2011-13	Minot Park District	Souris Valley Golf Course Bank Stabilization	12/7/2012	335,937	205,404	130,533
SWC	1444	5000	2011-13	City of Pembina	US Army Corps of Eng Section 408 Review City Flood	9/19/2013	73,200	62,833	10,367
SWC	1523	5000	2013-15	Ward Co. WRD	Mouse River Snagging & Clearing Project	12/13/2013	347,466	84,700	262,766
SWC	1523	5000	2011-13	Ward Co. WRD	Countryside Villas/Whispering Meadows Drainage Imp	2/21/2014	157,211	67,287	89,924
SWC	568	5000	2013-15	Southeast Cass WRD	Sheyenne River Snagging & Clearing Project Reaches	3/13/2014	165,000	164,861	139

TOTAL

6,098,703 4,526,794 1,571,909



North Dakota State Water Commission

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Agenda E

TO: Governor Jack Dalrymple
State Water Commission Members

FROM: *TSD* Todd Sando, P.E., Chief Engineer-Secretary

DATE: November 25, 2014

SUBJECT: 2015 North Dakota State Water Management Plan

Attached to this memorandum is a final draft of the 2015 North Dakota State Water Management Plan for your review and consideration. I respectfully request that you review the draft Water Plan, and provide any comments or changes that you may have to Patrick Fridgen, the Director of our Planning and Education Division, by December 5, 2014. When finalized, the plan will be submitted for final layout and design, and an executive summary will be developed including information from the water development sections. Printed copies of both will be available for distribution during the Legislative Assembly in January.

Authority

By virtue of North Dakota Century Code, Section 61-02-14, Powers and Duties of the Commission; Section 61-02-26, Duties of State Agencies Concerned with Intrastate Use or Disposition of Waters; and Section 61-02-01.3, Comprehensive Water Development Plan - the Commission is required to develop and maintain a comprehensive water development plan.

Purpose

The purpose of the 2015 Water Plan is to:

- Outline the planning process;
- Provide an overview of North Dakota's water resources – including characteristics and extent, and factors affecting availability for beneficial uses;
- Provide an overview of water appropriation responsibilities and evolving challenges associated with increasing demand for water;
- Provide a progress report on the state's priority water management and development efforts;
- Provide information regarding North Dakota's current and future water development project funding needs and priorities;
- Provide information regarding North Dakota's revenue sources for water development;
- Serve as a formal request for funding from the Resources Trust Fund;
- Provide information regarding water management and development special topics; and
- Identify goals and objectives to meet water management and development challenges.

2015 Water Planning Process

To promote and encourage more 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 six major drainage basins. The meetings were to be held in the Red, James, Mouse, lower and upper Missouri River, and Devils Lake basins.

As a result, the 2015 water planning process began when water management and development stakeholders and project sponsors were invited and encouraged to attend a series of Water Commissioner-hosted meetings in November and December 2013.

At those meetings, local stakeholders and project sponsors were asked to identify and submit potential water projects that should be considered for inclusion into the 2015 State Water Management Plan. In addition, modifications to the Water Commission's cost-share policy and a draft water project prioritization guidance concept were presented, and comments regarding these documents were requested. Comments were then incorporated into the Water Commission's cost-share policy and the prioritization guidance concept, and following further consultation with the state's interim Legislative Water Topics Overview Committee, the Cost-Share Policy, Procedures, and General Requirements, and the Water Project Prioritization Guidance Concept were both formally adopted by the Commission in September 2014, and became effective October 1, 2014.

A second series of Water Commissioner-hosted meetings was held in September 2014. The purpose of these meetings was to review potential projects identified by stakeholders and project sponsors that were proposed for implementation in the next biennium and beyond. The revised Water Commission cost-share policy and prioritization guidance concept were also outlined at the meetings.

I recommend that the State Water Commission approve the 2015 North Dakota State Water Management Plan – including changes that Commission members have provided.

TS:pf:dm/322

Attachment

NORTH DAKOTA
2015 PLAN
State Water Management



DRAFT



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GOVERNOR

Jack Dalrymple

COMMISSIONER OF AGRICULTURE

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STATE ENGINEER & CHIEF ENGINEER - SECRETARY

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January 2015

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A MESSAGE FROM THE STATE ENGINEER:

I am pleased to present you with the 2015 North Dakota State Water Management Plan.

This new plan documents many of North Dakota's historic, current, and anticipated water management and development challenges. From flooding and drought, to inadequate or insufficient water supplies, and inappropriate federal policies – the challenges are most certainly great, and they are many. But what is even more important to draw our focus, is that there are also sound solutions; many of which are well underway, or are planned to improve the lives of North Dakotans well into the future.

A key statement in this plan that stands out is “the state recognizes that many of the best solutions are forged at the local level.” I firmly believe this. And, I also believe that the long history of cooperation between local and state water managers, and the general public must continue. For it is that culture of cooperation in North Dakota's water community that has enabled our state to make the progress we've seen over the past several decades to better manage and develop our water resources.

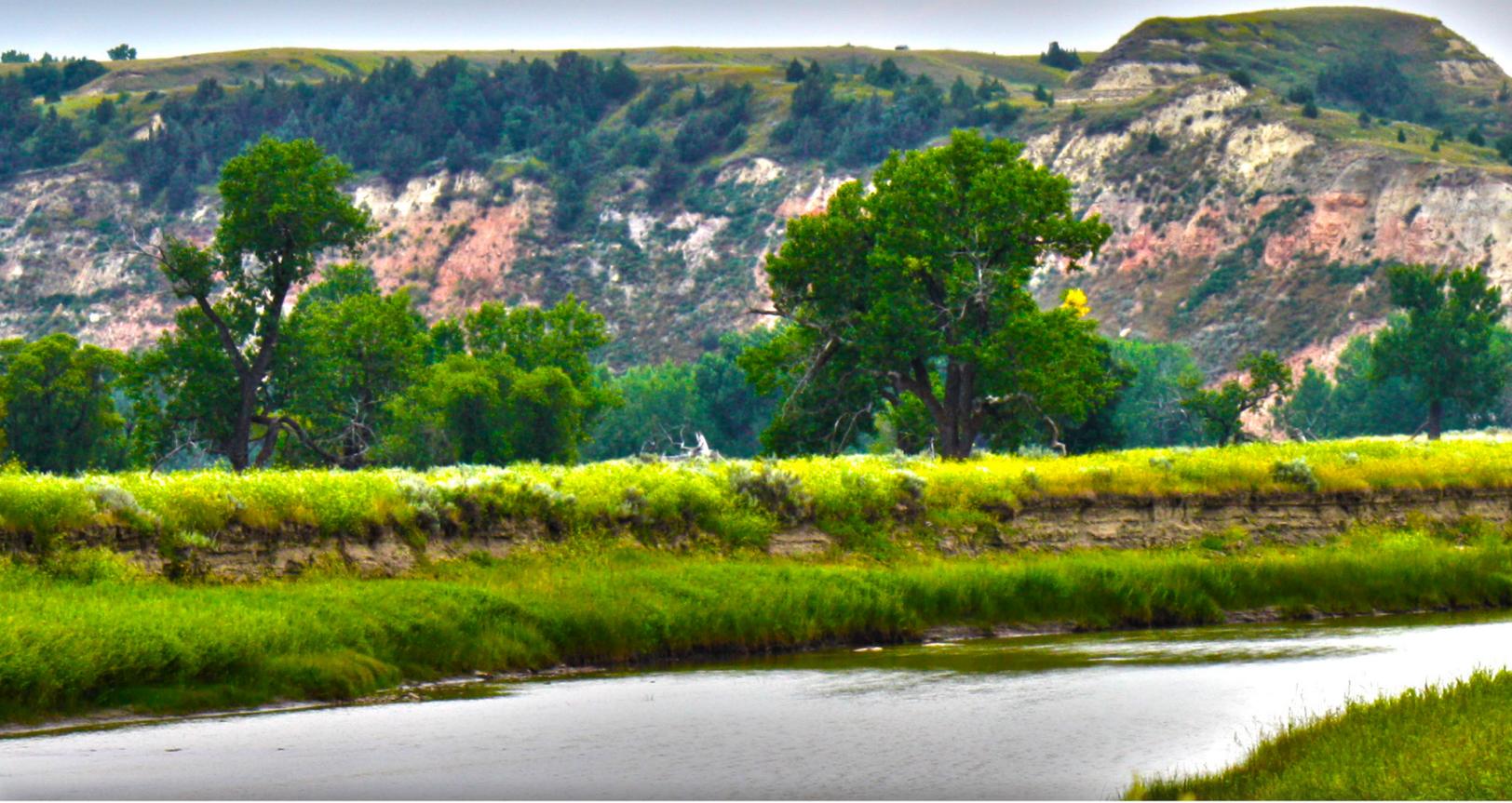
What is also very positive, is revenue available for water projects through the state's Resources Trust Fund (oil extraction tax) remains strong. Therefore, the state is poised financially to assist with moving critical water development projects forward in all of our major drainage basins.

With that, I hope you find the 2015 North Dakota Water Management Plan to be informative. And 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,

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

To improve the quality of life and strengthen the economy of North Dakota by managing the water resources of the state for the benefit of its people.



Introduction

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

The 2015 State Water Management Plan has been developed to serve as a pathway to achieve this vision.



ORGANIZATION AND BACKGROUND

The 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. The Water Commission is comprised of the Governor, the State Agriculture Commissioner, and seven members appointed by the Governor, that regionally represent the state. The Water Commission appoints the State Engineer. The State Engineer hires staff that provides technical assistance and essential decision-making information to support wise management of North Dakota's water resources by both the State Engineer and State Water Commission. Overall, both entities are responsible for the wise management and development of North Dakota's most precious resource – water.

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.

PURPOSE

The purpose of the 2015 State Water Management Plan is to:

- Outline the planning process;
- Provide an overview of North Dakota's water resources – including characteristics and extent, and factors affecting availability for beneficial uses;
- Provide an overview of water appropriation responsibilities and evolving challenges associated with increasing demand for water;
- Provide a progress report on the state's priority water management and development efforts;
- Provide information regarding North Dakota's current and future water development project funding needs and priorities;
- Provide information regarding North Dakota's revenue sources for water development;
- Serve as a formal request for funding from the Resources Trust Fund;
- Provide information regarding water management and development special topics; and
- Identify goals and objectives to meet water management and development challenges.

2015 Water Planning Process

To promote and encourage more 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 six major drainage basins. The meetings were to be held in the Red, James, Mouse, lower and upper Missouri River, and Devils Lake basins (Figure 1).

As a result, the 2015 water planning process began when water management and development stakeholders and project sponsors were invited and encouraged to attend a series of Water Commissioner-hosted meetings in November and December 2013.

At those meetings, local stakeholders and project sponsors were asked to identify and submit potential water projects that should be considered for inclusion into the 2015 State Water Management Plan. In addition, modifications to the Water Commission's cost-share policy and a

draft water project prioritization guidance concept were presented, and comments regarding these documents were requested. Comments were then incorporated into the Water Commission's cost-share policy and the prioritization guidance concept, and following further consultation with the state's interim Legislative Water Topics Overview Committee, the Cost-Share Policy, Procedures, and General Requirements, and the Water Project Prioritization Guidance Concept (See Appendix) were both formally adopted by the Commission in September 2014, and became effective October 1, 2014.

A second series of Water Commissioner-hosted meetings was held in September 2014. The purpose of these meetings was to review potential projects identified by stakeholders and project sponsors that were proposed for implementation in the next biennium and beyond. The revised Water Commission cost-share policy and prioritization guidance concept were also outlined at the meetings.

North Dakota State Water Commissioner Hosted Meetings

ROUND ONE: 2013

November 18 - Dickinson (Lower Missouri River Basin)
November 20 - Jamestown (James River Basin)
November 20 - Fargo (Red River Basin)
November 21 - Devils Lake (Devils Lake Basin)
November 25 - Minot (Mouse River Basin)
December 17 - Williston (Upper Missouri River Basin)

ROUND TWO: 2014

September 22 - Bismarck (Lower Missouri River Basin)
September 23 - Garrison (Upper Missouri River Basin)
September 23 - Minot (Mouse River Basin)
September 24 - Grand Forks (Red River Basin)
September 25 - Carrington (Devils Lake & James River Basins)



Figure 1. State Water Commission basin meeting schedule.



“...The state recognizes that many of the best solutions are forged at the local level.”

Partnerships

The 2015 State Water Management Plan process involved collaboration with 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 close relationships between the private sector and many of the state’s local government officials 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.

North Dakota's Water Resources

Like most states in the northern Great Plains, North Dakota faces a variety of water quantity and quality issues, which is why the ability to provide an adequate quantity of high quality water for all beneficial uses is vital in securing the economic, social, and environmental future of North Dakota.

The following section outlines the state's water resources and climatic conditions affecting them, it addresses surface and ground water quality issues, and present and future water use trends.

CLIMATE

Since settlement days, North Dakota has experienced extreme weather patterns such as the "Dirty Thirties," and the extended wet cycle that led to the rise of Devils Lake, beginning in 1993. In the last five years, the state has experienced record floods in 2009 and 2011, and an exceedingly dry year in 2012.

North Dakota spans a region that often swings from "too wet" to "too dry" (Figure 2). This range of climate varies not only geographically, east to west, but over time as well. It is not uncommon for the state to experience extreme drought in one place, and severe flooding in another, sometimes at the same time (Figure 3).

30 Year (1983 - 2012) Average Rainfall (April - September)

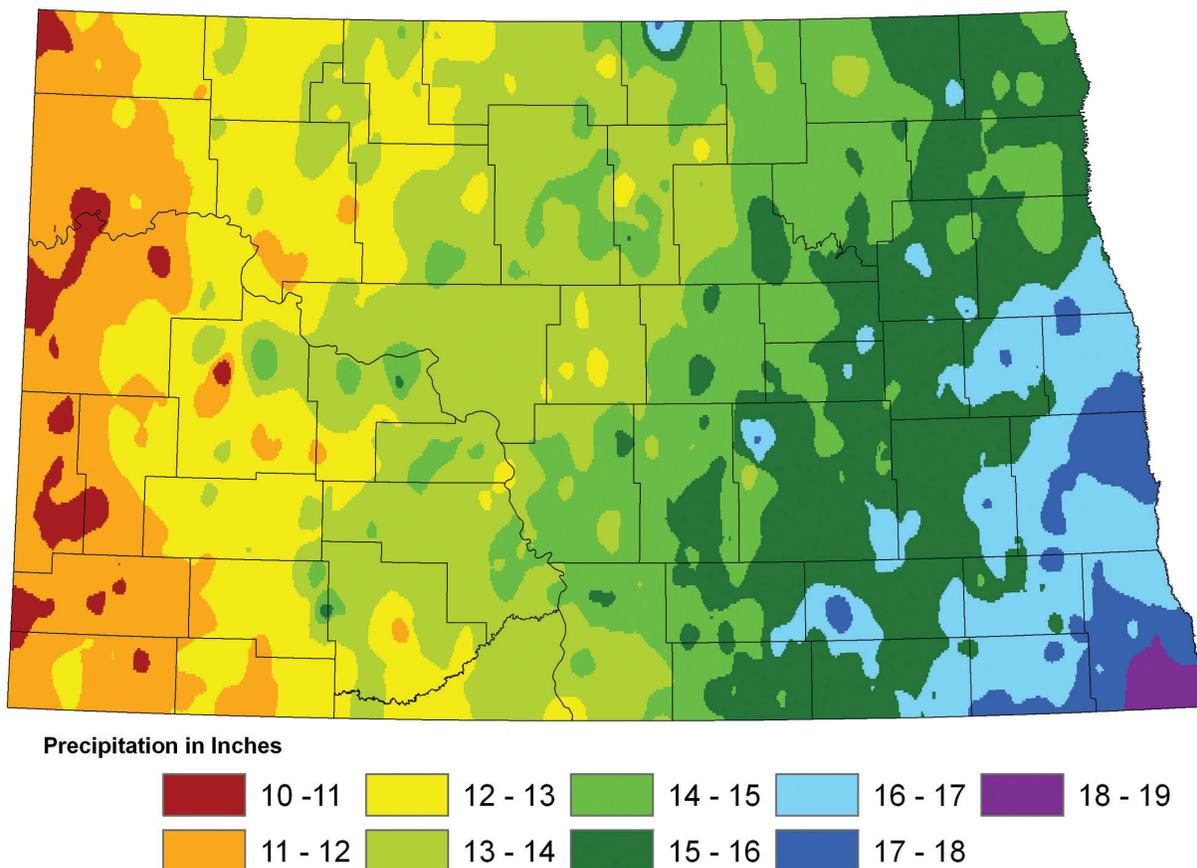
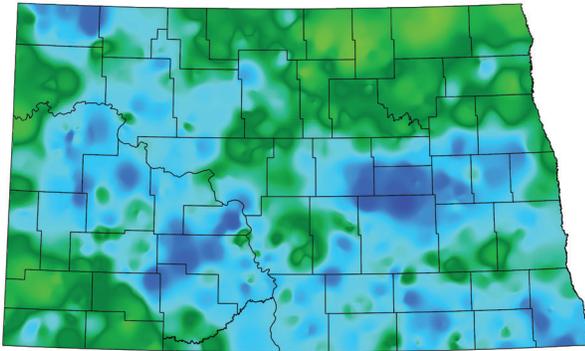


Figure 2. The state has experienced an extended wet cycle beginning in 1993 that has increased average annual precipitation statewide. (Courtesy NDARB)

January-December 2011 Precipitation

Source: NDARB Cooperative Observer Network

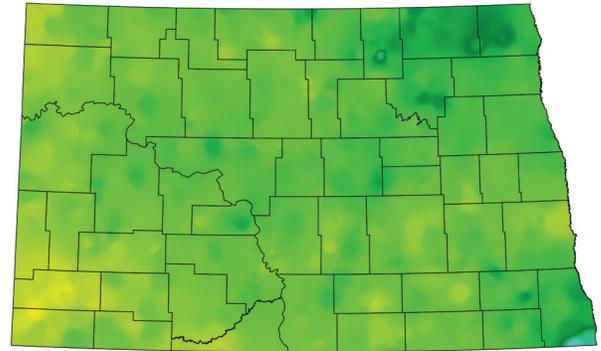


Precipitation in Inches



January-December 2012 Precipitation

Source: NDARB Cooperative Observer Network



Precipitation in Inches



Figure 3. North Dakota experiences extremes in precipitation, as shown in these annual precipitation maps for 2011 (a very wet year) and 2012 (a very dry year).

North Dakota Climate Quick Facts

- Highest temperature: 121 degrees, Steele, July 6, 1936.
- Lowest temperature: 60 degrees below zero, Parshall, February 15, 1936.
- Largest rainfall event in 24-hour period: 10.05 inches, Gilby, June 2000.
- Largest snowfall event in 24-hour period: 24.0 inches, Amidon, February 1998.
- The average first day of frost occurs in mid-September in northern parts of the state.
- The average last day of frost occurs in mid to late May.
- North Dakota receives a higher percentage of possible sunshine and more hours of sunshine annually than any other state along the Canadian border. On an annual basis, the state receives 58 to 62 percent of total possible sunshine.
- July is the sunniest month, when approximately three-quarters of possible sunshine is recorded.
- July and August will record about twice as many sunshine days than during any other month of the year.
- Average yearly rainfall ranges from 24 inches in the southeastern portion of the state, to 14 inches in the far west.
- When compared to the period from 1907-1992, average annual precipitation has increased during the “wet cycle” period (1993-2011) by approximately 29% in Fargo, 28% in Bismarck, and 11% in Dickinson.
- North Dakota’s greatest source of atmospheric moisture is the Gulf of Mexico - not the Pacific Ocean.



Figure 4. North Dakota climate quick facts.



The 100th Meridian line of longitude roughly splits the state in half. East of this line, there is generally more precipitation in the form of snow and rain than there is the uptake of water by plants and evaporation.

West of the 100th Meridian, water loss generally exceeds precipitation. Recent fluctuations in climate have shown that this artificial boundary between wet and dry shifts slightly east or west depending upon larger climatic patterns. Geological evidence indicates that this boundary can shift even more dramatically.

Drought

Drought has often been a defining aspect of climate in North Dakota since settlement days, from the many problems caused by drought in the 1930s, through several shorter dry cycles experienced as recently as 2012. Drought can cause crops to fail, stress municipal water supplies, impact recreation, and make life generally miserable for anyone who makes their living from the land.

Drought certainly is not new to the region since settlement, with the most severe dry periods recorded in the 1930s, and more recently, the 1980s. Studies of isolated lakebeds in several places in North Dakota show that extreme fluctuations in the pattern of excessive precipitation and drought are normal. Studies found that in the case of lakes, a variation between wet cycles and dry cycles have existed for thousands of years. Lakebed records indicate that since the glaciers receded, droughts and wet cycles lasting more than 100 years have occurred.

While in an “average” year, there is often sufficient precipitation for the various uses that rely upon it, historical and paleoclimatological records indicate that there will be periods of time when there is not nearly enough moisture.

Flooding

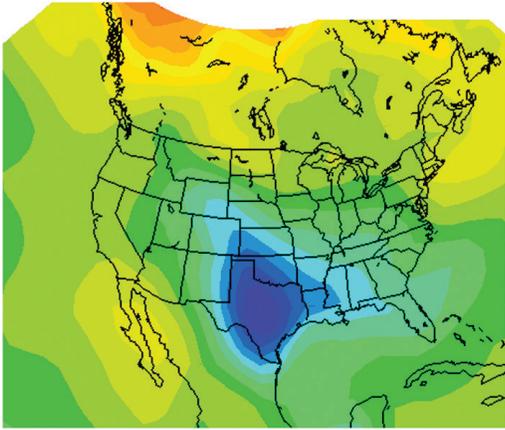
While droughts are common in the northern Great Plains it is also true that this region experiences wet cycles. Climatologists believe that North Dakota is currently in a wet cycle that began in 1993, which has led to flooding throughout the state. It is useful to note that although we are believed to be in a long-term wet cycle on the eastern half of the state, mini-droughts can be experienced within that cycle. This has been the case in recent years, with drought afflicting western, and increasingly, eastern North Dakota.

Flooding in the Red River Valley in 1997 was one of the most severe in recorded history, when parts of the Red River Valley experienced a record-breaking 12 feet of snow, followed by a severe ice storm in the spring, and rapid spring melt. These factors, along with ice jams in several key areas led to the catastrophic flooding that most visibly impacted the city of Grand Forks. Partial records indicate a flood more severe than the 1997 event occurred prior to European settlement.

With regard to the Devils Lake basin, in 1992, many in the state were concerned that the fishery was in imminent danger of dying off due to high salinity related to low lake levels caused by the late 1980s drought. In 1993, all of that changed, and with significant rainfall and snow runoff, the lake began to rise. The flooding of Devils Lake has been relentless, rising over 30 feet in a little over 20 years, with only the drought of 2012 and the operations of the Devils Lake outlets causing appreciable reductions in lake levels.

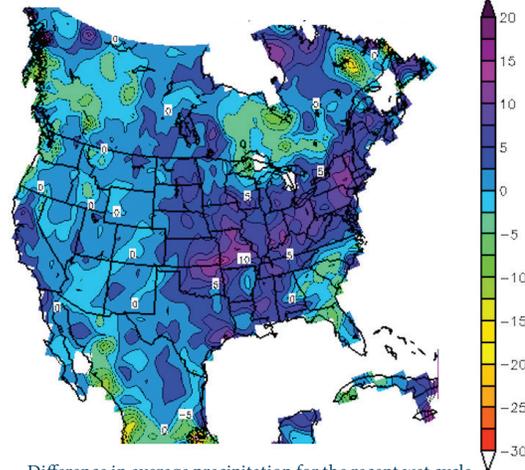
More recently, two significant and very damaging floods impacted most of the state in 2009, and 2011. Most of the major cities in the state were affected, with Minot, Bismarck, and Fargo being especially impacted. Additional discussion of the flooding events experienced in the Mouse, Missouri, Red River, and Devils Lake watersheds is included in the “Special Topics” section.

Air Temperature Composite Mean (Kelvins)



Difference in average temperature for the recent wet cycle, compared to the beginning of the 20th century.

Precipitation Composite Mean (mm)



Difference in average precipitation for the recent wet cycle, compared to the beginning of the 20th century.

Figure 5. A comparison of the average yearly temperature and total precipitation in North America. Numbers reflect the wet cycle (1993-2012), when subtracting the averages for the “normal” climate of North America (1952-1972). In general, North Dakota got slightly warmer and wetter. (Courtesy Mark Ewens, NOAA)

Climate Trends

Several studies of lake sediment in North Dakota have demonstrated that the state is subject to long-term climatic variation, alternating between extended wet and dry cycles. Evidence has shown that the state does not really have a “normal” climate.

In recent years, climate change and global warming have gained greater attention (Figure 4 & Figure 5). While the root causes of climate change, be they natural or human-induced, are still very much under debate, recent data does indicate that global

temperatures have increased slightly. If warming trends continue, it is uncertain what effects North Dakota will experience. Climatological data inferred from lake core samples that provide a picture of climate in the region since the termination of the last ice age indicate that when global temperatures are warmer, North Dakota’s climate may not react in a predictable manner. With a wet cycle that has lasted for two decades, and models indicating a likelihood that current patterns could persist for decades more, regular flooding may become the new normal for much of the state.



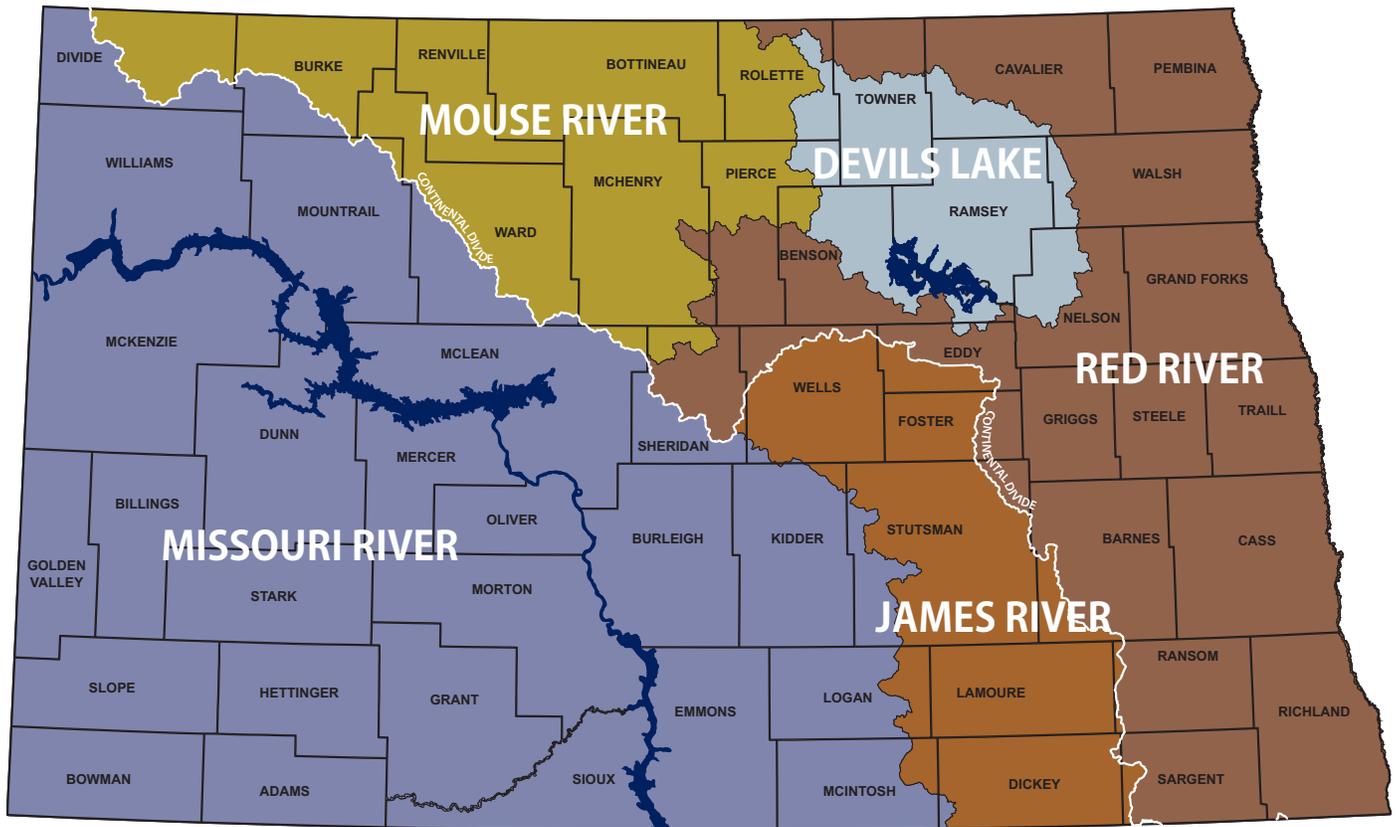


Figure 6. The major watersheds of North Dakota. The Mouse River, Devils Lake, and Red River basins are part of the Hudson Bay drainage, while the Missouri and James River basins are part of the Gulf of Mexico drainage.

SURFACE WATER RESOURCES

There are two major drainage basins in North Dakota, separated by a continental divide running from the northwest to the southeast corners of the state (Figure 6). The northeastern portion of the state drains into Hudson Bay, while the southwestern part is drained by the Missouri River to the Gulf of Mexico.

Flow in all North Dakota streams and rivers is seasonably and annually variable. Runoff is generally greatest in early spring, as a result of snowmelt water and spring rainfall. Many smaller streams experience little or no flow for extended periods during summer months. However, dramatic flow variations in river discharges can be caused by changes in weather patterns, isolated storm events, evaporation rates, and snow pack conditions.

In 2012, the total recorded waterbodies in North Dakota covered approximately 1,331,840 acres. According to the North Dakota State Water Commission MapService and North Dakota’s Assessment Database (ADB), provided by North

Dakota’s Department of Health to the U.S. Environmental Protection Agency, there are 3,297 man-made reservoirs and 988 waterbodies greater than 10 acres in area in the state.

The state’s four largest reservoirs (Sakakawea, Oahe, Audubon, and Ashtabula) comprise about 30 percent of North Dakota’s total waterbody surface acres, accounting for a surface area of 397,467 acres. Of these, 375,669 acres, or 28 percent of the state’s entire waterbody acres are contained within the two mainstem Missouri River reservoirs (Lake Sakakawea and Lake Oahe) at their normal operating pool elevations.

Missouri River Basin



The Missouri River drainage system includes the major sub-basins of the Missouri and James Rivers. The tributaries on the south and west sides of the Missouri River typically occupy small but sharply defined valleys. This area is naturally well drained with few lakes. The topography is characterized by rolling, hilly plains, with numerous flat-topped, steep-sided buttes. The most prominent are located in the Badlands along the Little Missouri River. Areas east of the Missouri River include glaciated areas that are characterized by many small lakes and wetlands.

James River Basin



The James River, which is a major tributary of the Missouri River, begins in the drift prairie of central North Dakota, but does not join the Missouri until it reaches Yankton, South Dakota. The James River basin is naturally poorly to moderately drained, with a large number of wetlands.

Mouse River Basin



The Hudson Bay drainage includes the Mouse River, Red River, and Devils Lake basins. The Mouse River originates in Saskatchewan and then loops through North Dakota before it reenters Canada west of the Turtle Mountains. The topography is varied within the basin, with hilly terrain in the southwest, a flat glacial lake plain in the east, and forested hills of the Turtle Mountains in the northeast.

Red River Basin



The Red River winds northward for almost 400 miles, forming the border between North Dakota and Minnesota. From the Canadian border, the Red flows another 155 river miles to Lake Winnipeg in Manitoba. The valley through which the river flows is the former bed of glacial Lake Agassiz. The ancient lakebed is extremely flat with less than a foot of drop per mile downstream, and is home to some of the most productive farmland in the world.

Devils Lake Basin



The Devils Lake basin is a sub-basin of the Red River basin. Chains of waterways and connecting lakes form the drainage system; many of which ultimately terminate in Devils Lake. At its current elevation, the lake itself does not naturally connect to the Sheyenne River. However, two state outlets pump water to the Sheyenne River when they are being operated. In addition, small natural connections between the Devils Lake and Red River basins do exist along the eastern and northern borders of the basin.

GROUND WATER RESOURCES

Ground water underlies the land surface throughout the state. Ground water generally occurs in two major types of rock – unconsolidated deposits and bedrock.

Unconsolidated deposits are loose beds of gravel, sand, silt, or clay of glacial origin. Bedrock aquifers consist primarily of shale, sandstone and lignite.

Aquifers of glacial origin are generally more productive than aquifers in the underlying bedrock. Bedrock aquifers underlie the entire state and tend to be more continuous and widespread than aquifers in the unconsolidated deposits.

It is estimated that 60 million acre-feet of water are stored in major unconsolidated aquifers in the state. The amount of water available in the major bedrock aquifers is estimated to be approximately 435 million acre-feet.

In recent years, the development of technologies such as horizontal drilling, and aquifer recharge and recovery (previously called artificial recharge) could also prove to be a vital tool in mitigating the boom-bust nature of precipitation that the state frequently experiences. (Please see pages 88 and 89 for more information on horizontal well drilling and artificial aquifer recharge.)

ATMOSPHERIC WATER RESOURCES

Mean annual precipitation ranges from a maximum of nearly 24 inches in the southeast corner of the state to just over 14 inches in the extreme west. It is worth noting that the maximum mean annual rainfall in southeast North Dakota has increased from just over 21 inches, to 24 inches due to the extended wet cycle, which started in 1993 and continues through 2014.

During North Dakota's growing season (April-September), precipitation ranges from about 18 inches in the southeast part of the state, to about 10 inches in the far west. This distribution results in generally adequate moisture for dry land farming in the east, but less reliable supplies in the semi-arid west.

Precipitation is largely dependent upon an adequate supply of airborne moisture, both visible (clouds) and invisible (water vapor). The primary

atmospheric water source for North Dakota is the warm, humid air originating from the Gulf of Mexico.

While westerly flow from the Pacific Ocean does initially move atmospheric moisture towards the state, the repeated lifting and cooling of the air as it passes over the Rocky Mountains causes much of the moisture to precipitate from the air before it reaches the plains. Moisture from the Gulf of Mexico faces no such impediments.

The capacity of the atmosphere to hold moisture is largely governed by its temperature. Warm summer air can hold enough moisture to allow a thunderstorm to generate several inches of rainfall in a short period of time, whereas cold arctic air from the Canadian prairies can scarcely support any precipitation. As such, the warm season accounts for more than three-quarters of the state's total annual precipitation.

Depending on the season, the total water contained in the atmosphere above North Dakota ranges from about 350,000 acre-feet in the winter, to 5.5 million acre-feet in the summer. Most of the water passes through the state, borne by winds aloft. On any given day, nature converts a small fraction of the available water to clouds, and sometimes precipitation.

WATER QUALITY

In North Dakota, water quality monitoring is primarily the responsibility of the Department of Health. The Water Commission and other natural resource agencies work cooperatively with the Department of Health to maintain, monitor, and plan for adequate supplies of high quality water.

Since the 1980s, North Dakota has been mirroring a national trend towards quantifying and improving water quality in natural systems throughout the state. A large portion of the early work focused on gathering information to determine the conditions of the waterbodies. In the last two decades, an increasing amount of work has been done to address non-point source water pollution.

Surface Water Quality

Under the federal Clean Water Act (CWA), states are required to report on water quality, and develop a list of those waters needing total maximum daily loads (TMDLs) due to their being water quality-limited, and submit an assessment report every two years. This list has become known as the “TMDL list” or “Section 303(d) list.”

When a waterbody is water quality limited, the state is required to determine its beneficial uses, and the reduction in pollutant loading necessary for that waterbody to meet water quality standards. The process is called TMDL.

When a state prepares its list of water quality-limited waterbodies, it is required to prioritize waterbodies for TMDL development and to identify those waterbodies that will be targeted for TMDL development within two years.

Waterbodies are categorized from 1, where all designated uses are met, to 5, where a pollutant impairs a waterbody and a TMDL is required.

Eighty-three percent of the rivers and streams assessed fully support the beneficial use designated as aquatic life. The remaining 17 percent assessed for this report were classified as not supporting aquatic life, and will be the focus of improvement strategies.

Of North Dakota’s approximately 1.3 million acres of surface water, 766,337 are contained within lakes and reservoirs, with the remainder in smaller wetlands and other temporary waterbodies. A total of 192 lakes and reservoirs (691,769 acres) were assessed for this report, with the state’s remaining lakes and reservoirs making up only 10 percent (74,568) of total acreage. Eighty-one percent were assessed as fully supporting aquatic life use. Of this total, 15 percent were considered threatened, while four lakes did not support aquatic life.

The primary sources of pollutants affecting aquatic life use in the state were cropland erosion and runoff; animal feeding operations and poor grazing

management; and point source discharges, such as urban runoff, and hydrologic modifications (e.g., upstream impoundments, low-head dams, channelization, flow regulation and diversion, riparian vegetation removal, and wetland drainage).

Recreational use was assessed on 159 waterbodies in the state, and was classified as fully supporting, or not supporting on 97 and 3 percent, respectively. The primary cause of recreational use impairment was nutrient loading.

About 2,160 miles of rivers and streams were assessed for drinking water supplies for this report; with only 5 percent threatened for drinking water supply use, primarily through taste and odor problems that are not regulated in drinking water.

A total of 4,097 miles of rivers and streams were assessed for fish consumption. Of those, 4,093 miles of rivers and streams were identified as capable of supporting a sport fishery from which fish could be used for consumption. Based on the recommended EPA fish tissue criterion of 0.3 µg methyl-mercury/gram of fish tissue, only the Red River of the North was assessed as not supporting fish consumption. While there are many potential sources of methyl-mercury, both anthropogenic and natural, to date there have been no specific causes or sources identified for the mercury present in North Dakota fish.

There are five reservoirs: Lake Sakakawea, Lake Ashtabula, Homme Dam, Bisbee Dam and Mt. Carmel Reservoir that are currently being used either directly or indirectly as municipal drinking water supplies, with two others (Patterson Lake and Renwick Dam) serving as back-up water supplies in the event the primary water supplies should fail. Homme Dam, Mt. Carmel Reservoir and Lake Sakakawea were assessed as fully supporting drinking water supply use. Drinking water supply use was not assessed for the remaining lakes and reservoirs.

Ground water Quality

In North Dakota, most of the incorporated communities in the state rely on ground water from private wells, municipal distribution systems, or rural water systems. Ground water is virtually the sole source of all water used by farm families and residents of small communities having no public water distribution system. Ground water is also a significant supply for agriculture and industry.

Water quality in the state’s aquifers varies greatly and is marginal for drinking purposes in many areas. Unconsolidated aquifers generally have water that is less mineralized than water in deeper bedrock aquifers, which are typically more saline.

For the last 30 years North Dakota’s principle aquifers have been extensively monitored for nutrients and organic compound contamination. North Dakota has not identified widespread ground water contamination, although some naturally occurring compounds, such as arsenic, and uranium may make the quality of ground

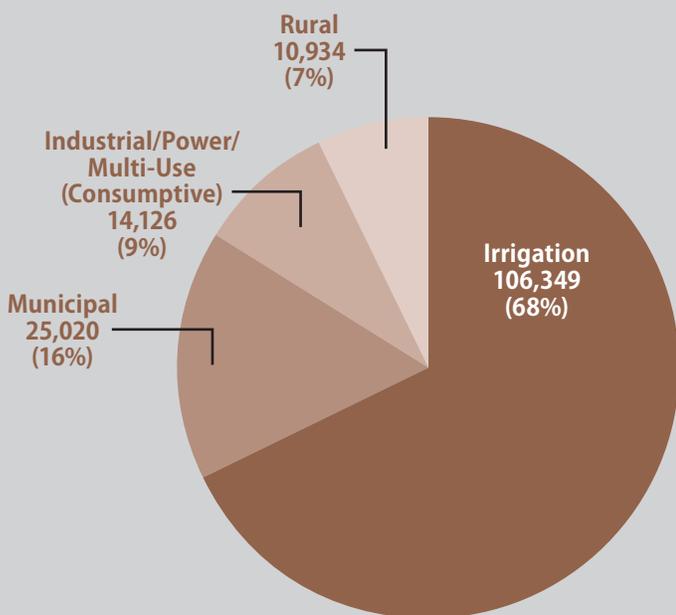
water undesirable in a small number of aquifers. Those areas where human-related ground water contamination has occurred have usually been associated with petroleum storage facilities, agricultural storage facilities, feedlots, poorly designed wells, abandoned wells, wastewater treatment lagoons, landfills, septic systems, and the underground injection of waste.

Monitoring and protection of the state’s ground water resources continues through a wide variety of state and federal programs. State Engineer monitoring efforts are outlined in greater detail in the “Managing Resources” section.

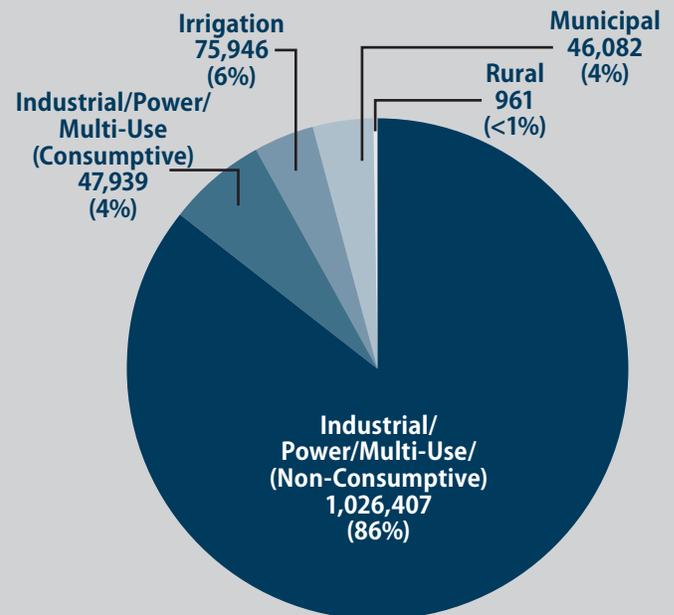
CURRENT AND HISTORIC WATER USE

Water in North Dakota is used in a variety of ways (Figure 7 & Figure 8). While the traditional uses of “mining, irrigating, and manufacturing” found in the North Dakota Constitution in Article XI, Section 3 still remain prevalent, new diverse uses and needs are continually being created.

North Dakota’s 2003-2013 Average Combined Consumptive & Non-Consumptive Water Use



2003-2013 Ground Water Average Use (In Acre-Feet)
Total: 156,429



2003-2013 Surface Water Average Use (In Acre-Feet)
Total: 1,197,335

2003-2013 Average Annual Total Water Use = 1,353,764 Acre-Feet

Figure 7. North Dakota’s 2003-2013 average combined consumptive & non-consumptive water use.

Public and Domestic Water Use

In 2013, rural water use accounted for 13,249 acre-feet from ground water, and 1,680 acre-feet from surface water. Municipal water use was 23,482 acre-feet from ground water, and 48,838 acre-feet from surface water (Figure 8). In 2013, rural and municipal water use from both sources accounted for 24% of all consumptive water use in the state, and 7% of combined consumptive and non-consumptive water use.

Industrial Water Use

In 2007, oil hydrofracturing started to become a widespread technology, which in turn led to an increase in industrial water usage. Water use increased by an average of 43% for the period of 2008-2013, when compared to the period between 2003 and 2007. Hydrofracturing water use has appeared to stabilize, however related water use to maintain well production is likely to increase for a while, and then stabilize.

In 2013, industrial water use was 17,039 acre-feet from ground water, and 48,176 acre-feet from

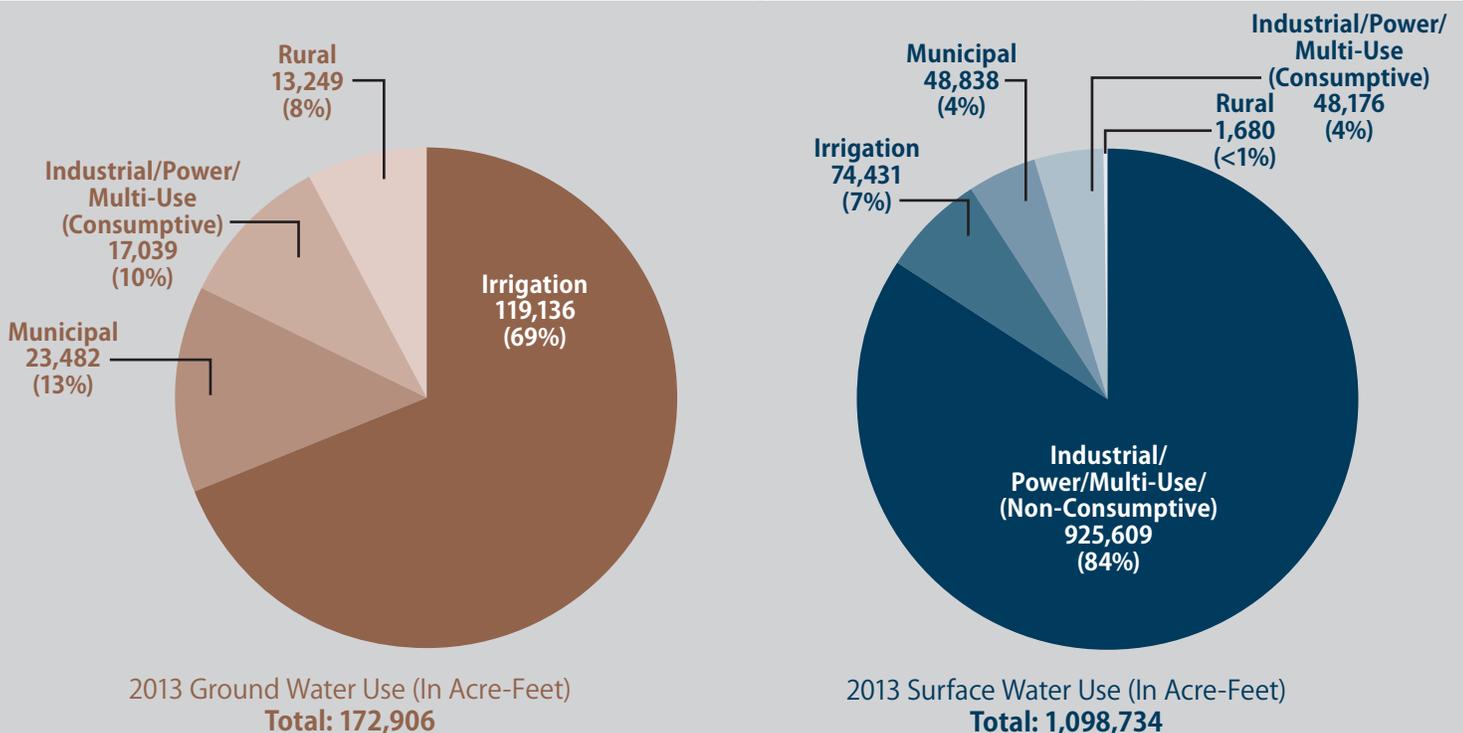
surface water (Figure 8). In 2013, industrial water use from surface and ground water accounted for 22% of all consumptive water use in the state, and 6% of combined consumptive and non-consumptive water use.

Though the use of water for oil production has increased, it is also important to note that water use for oil production only accounted for 5% of North Dakota's consumptive water use in 2013 (Figure 9).

Electric Power Water Use

There are currently ten water permits issued for electric power generation in North Dakota. The State Engineer requires reporting of both consumptive water use and non-consumptive water use for this purpose. Consumptive water use for electric power refers to water that is not returned to its original source because of evaporative losses as part of the power plants' cooling processes. Non-consumptive use for this purpose means power plants are piping water through facilities for cooling purposes or using it to spin turbines, and then all of

North Dakota's 2013 Combined Consumptive & Non-Consumptive Water Use



2013 Total Water Use = 1,271,640 Acre-Feet

Figure 8. North Dakota's 2013 combined consumptive & non-consumptive water use.

the non-evaporated water is returned to the original source. According to Water Commission records, consumptive use for electric power generation ranged from 33,514 acre-feet in 2003, to 31,200 in 2013. Non-consumptive use averages approximately 1,000,000 acre-feet annually.

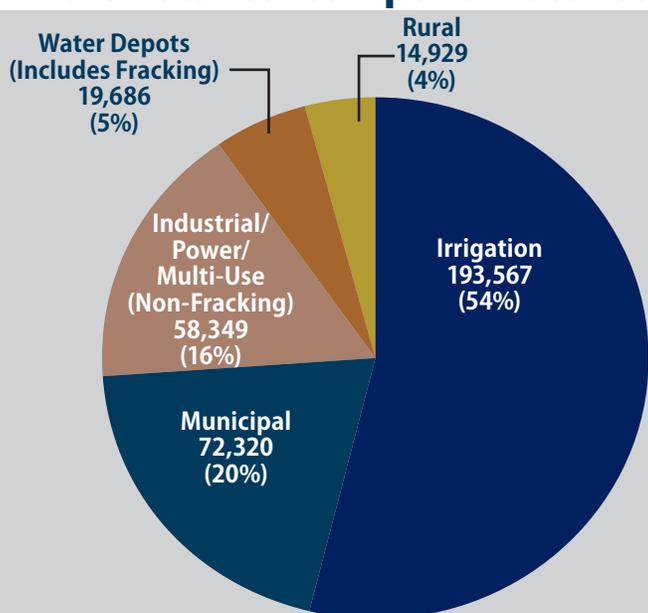
Agricultural Water Use

The primary use of water in agriculture in North Dakota is for irrigation. Irrigation is dependent upon climate conditions each year, with soil moisture and precipitation driving need. In 2013, irrigation used 119,136 acre-feet from ground water, and 74,431 acre-feet from surface sources (Figure 8). Irrigation remains the state’s single greatest water usage, accounting for an average of 56% of total consumptive water use, and around 13% of total consumptive and non-consumptive water use.

Fish, Wildlife, and Recreation

Water use for fish, wildlife, and recreation are generally part of larger multi-purpose projects, such as dams and reservoirs. Although independent uses for these purposes do exist in North Dakota, they are generally small and account for less than 1 percent of total consumptive and non-consumptive water use.

2013 Total Consumptive Water Use



2013 Total Consumptive Use = 358,851 Acre-Feet

Figure 9. 2013 total consumptive water use.

FUTURE WATER NEEDS

North Dakota’s future water needs and trends will be influenced by a number of factors. Most importantly, we can expect future trends to be driven primarily by climate, population patterns, and current and expected economic development opportunities. However, it is difficult to predict all of the factors that may lead to the next population shift in our state, or to identify where the next economic development opportunity might occur, and what it might involve. The purpose of this section of the current planning effort is to discuss some of the influencing factors and anticipated water use scenarios for various uses.

From the time of statehood, North Dakota has experienced two general trends in population, people moving from rural to urban areas, and the outmigration from the state of young adults after high school or college. What this has meant is that the population of the state over the last century has been on a slow but steady decline, along with increasing urbanization. All of that changed with the advent of various economic development opportunities, particularly in the energy sector.

With the invention and use of technologies necessary to cost effectively extract shale-bound oil, the stage was set in 2007 for North Dakota to experience a relatively rapid increase in the state’s population. In 2013, statewide population reached almost 724,000 - a 7.6% increase between 2010 and 2013. Before current conditions, the highest population recorded was in 1930, when the state population was approximately 681,000.

Between the 2010 U.S. Census and 2012, estimates showed that 31 out of 53 North Dakota counties gained in population, in contrast with the 2009 State Water Management Plan, where only seven counties in the state were estimated to gain population between 2000 and 2020.

In western North Dakota, in the heart of oil development, these changes have been even more pronounced. Cities and counties that have experienced a long, steady loss in population are suddenly confronting massive increases in

population. This has presented significant challenges in order for these areas to support the rapid growth with housing and other basic services, like drinking water.

The expanding oil industry has meant rapid and substantial population and economic growth in the state in general. But, a major unknown is if the rate of population growth will hold steady, increase, decrease, or stop. Because the state's recent growth is so closely tied to oil development, and there are a wide variety of variables affecting regulations, the technology being used, and the

market forces driving oil development, it is difficult to predict where state population will be in twenty years. However, some forecasts have put the state's population over a million in the next few decades, if current trends persist.

The ten largest cities in the state are the same as they were in the 2009 State Water Plan: Fargo, Bismarck, Grand Forks, Minot, West Fargo, Dickinson, Mandan, Williston, Jamestown, and Wahpeton (Table 1). However, when considering relative changes in population, the ten cities with the greatest growth were Watford City, Williston,

Population Trends: North Dakota's Ten Largest Cities



Figure 10. North Dakota's ten largest cities.

City	2010 Census	2013 Estimate	% Growth
Fargo	105,549	113,658	7.7%
Bismarck	61,272	67,034	9.4%
Grand Forks	52,838	54,932	4.0%
Minot	40,888	46,321	13.3%
West Fargo	25,830	29,878	15.7%
Williston	14,716	20,850	41.7%
Dickinson	17,787	20,826	17.1%
Mandan	18,331	19,887	8.5%
Jamestown	15,427	15,440	0.1%
Wahpeton	7,766	7,853	1.1%

Table 1. Growth in the ten largest cities in North Dakota between 2010 and 2013. (Source: U.S. Census)

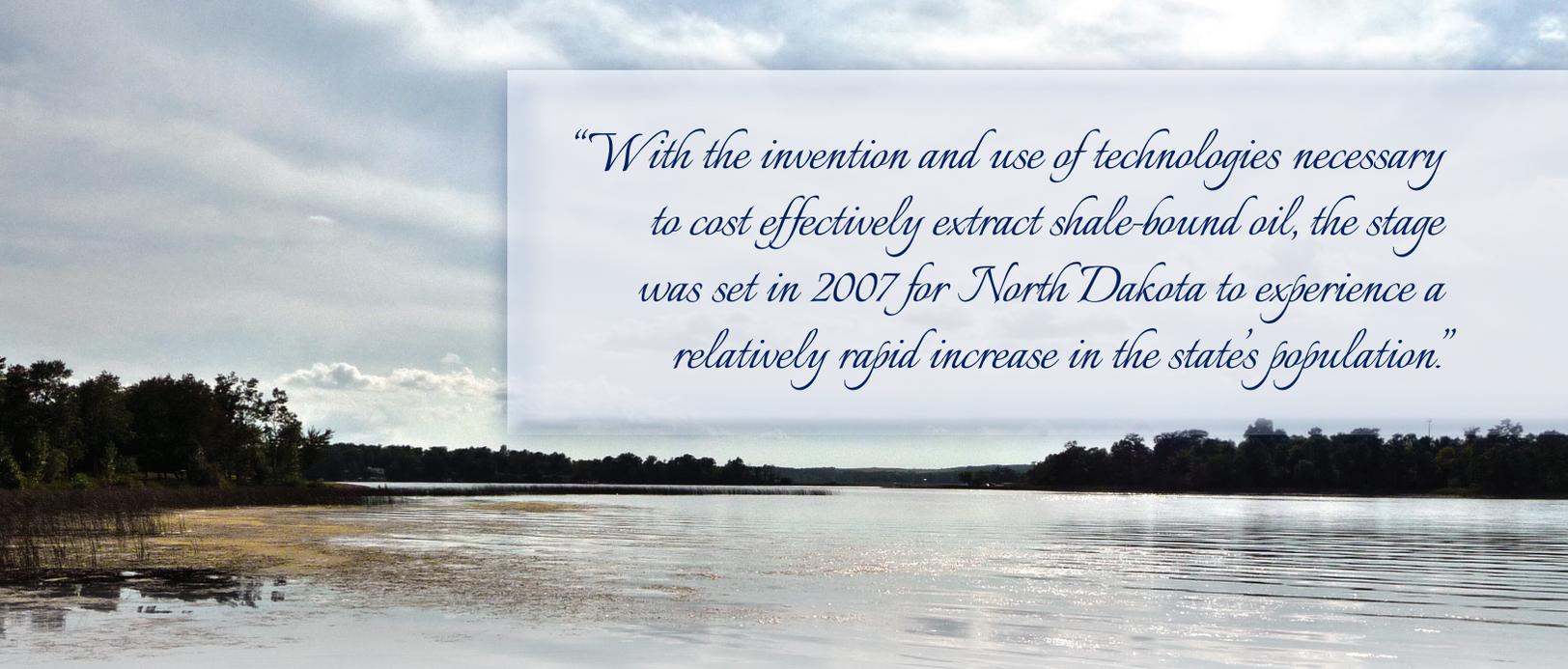
Population Trends: North Dakota's Fastest Growing Cities



Figure 11. North Dakota's fastest growing cities.

City	2010 Census	2013 Estimate	% Growth
Watford City	1,744	3,284	88.3%
Williston	14,716	20,850	41.7%
Stanley	1,458	2,060	41.3%
Parshall	903	1,216	34.7%
Lignite	155	204	31.6%
Alexander	223	293	31.4%
Killdeer	751	975	29.8%
Arnegard	115	149	29.6%
Ray	592	766	29.4%
Lincoln	2,406	3,099	28.8%

Table 2. The ten cities that experienced the greatest proportional growth between 2010 and 2013. (Source: U.S. Census)



“With the invention and use of technologies necessary to cost effectively extract shale-bound oil, the stage was set in 2007 for North Dakota to experience a relatively rapid increase in the state’s population.”

Stanley, Parshall, Lignite, Alexander, Killdeer, Arnegard, Ray, and Lincoln, with Watford City seeing an 88% increase in population between 2010 and 2013 (Table 2). The greatest proportional gains in population were, with the exception of Lincoln, all in western North Dakota, a part of the state that has been losing population for decades.

Changes in long-term trends in population have led to a need for improving infrastructure in the western half of the state, including water supply. Rapid population growth has led to efforts to increase the capacity of regional projects such as the Southwest Pipeline Project, and the construction of a newer regional water supply project known as the Western Area Water Supply Project.

Prior to expansion of oil extraction efforts, infrastructure projects in the western half of North Dakota were designed under the assumption that populations were going to decline or hold steady. With a rapid influx in population, this meant that infrastructure, such as the Southwest Pipeline Project and the Western Area Water Supply, would need additional capacity to meet existing needs.

Along with the challenges of developing infrastructure sufficient to meet the needs of an unexpected growth in population, the state also faces challenges in several areas: such as legal challenges over the state’s right to Missouri River water, the largest source of fresh water in the state;

providing water for the oil extraction process; and future quantification of Native American water rights.

Future Population Estimates

A recent 2012 NDSU study titled “The 2012 North Dakota Statewide Housing Needs Assessment” developed projections for 2015, 2020, and 2025 for the entire state by region (Figure 12). Table 3 on the following page shows that the state is projected to see a population increase of 25 percent from 2010-2025, with the greatest percentage increases of 137%, 60%, and 35% in Regions I, VIII, and II in western and north central North Dakota. These areas of the state are also the focal point of large-scale, ongoing and planned regional water supply systems – including the Southwest Pipeline Project that serves much of Region VIII, Western Area Water Supply that serves Region I, and the Northwest Area Water supply in Region II.

The ten eastern Red River Valley counties in regions IV and V currently account for 41% of the state’s total population. But, the Red River in that region only accounts for 6% of the annual flows of North Dakota’s rivers. In addition, the Red River has a history of drying up during times of drought. In response, efforts to address looming water supply issues in the Red River Valley are continuing through cooperative efforts involving the state, Garrison Diversion Conservancy District, and Lake Agassiz Water Authority.



Figure 12. The 2012 North Dakota Statewide Housing Needs Assessment regions.

Population Estimates & Trends By Region

	Total Pop 2000	Total Pop 2010	Projection 2015	Projection 2020	Projection 2025	Change 2010-2025
Region I	27,781	30,829	50,529	66,938	73,164	42,335
Region II	88,089	89,967	114,709	121,425	121,443	31,476
Region III	43,168	40,672	41,434	42,254	43,016	2,344
Region IV	90,798	88,519	90,506	92,800	95,125	6,606
Region V	162,127	185,481	196,322	207,284	218,799	33,318
Region VI	61,454	56,363	56,813	57,349	58,222	1,859
Region VII	130,418	141,864	151,192	160,356	169,993	28,129
Region VIII	38,365	38,896	48,518	58,135	62,058	23,162
TOTAL	642,200	672,591	750,023	806,541	841,820	169,229

	Total Pop 2000	% Increase 2000-2010	% Increase Projection 2010-2015	% Increase Projection 2015-2020	% Increase Projection 2020-2025	Change 2010-2025
Region I	27,781	11%	64%	32%	9%	137%
Region II	88,089	2%	28%	6%	0%	35%
Region III	43,168	-6%	2%	2%	2%	6%
Region IV	90,798	-3%	2%	3%	3%	7%
Region V	162,127	14%	6%	6%	6%	18%
Region VI	61,454	-8%	1%	1%	2%	3%
Region VII	130,418	9%	7%	6%	6%	20%
Region VIII	38,365	1%	25%	20%	7%	60%
TOTAL	642,200	5%	12%	8%	4%	25%

Table 3. The 2012 North Dakota Statewide Housing Assessment population estimates.

Projected Domestic, Commercial, and Light Industrial Water Use

Based on state and regional projections of increased population, an additional total of about 11,000 acre-feet per year may be needed statewide for domestic, commercial, and light industrial use by 2025 (Table 4). The largest regional increases (between 1,820 and 3,043 acre-feet per year per region) are predicted for Regions I, V, VII and VIII, with the least in Regions III and VI.

The 2012, the North Dakota State Department of Commerce projected that the state population could reach as high as 841,820 by 2025, an increase of 91,797 (16%) from the 2015 estimate. A projected 10-year regional distribution for increased population and increased water needs for domestic, commercial and light industrial use, based on an estimated per capita use of 120 gallons per day (gpd) is shown in Table 4.

Projected Irrigation Water Use

Based on projections by representatives of the North Dakota Irrigation Association, an increase of about 15,000 to 20,000 acre-feet per year in irrigation development might be expected over the next ten years. Most of the development would be in the Turtle Lake area, from the McClusky Canal, with some development in the Nesson Irrigation District.

A small amount of irrigation development using on-land pond storage is expected.

From 2010 to 2014, about 1,250 acres per year have been developed for irrigation. Prior to that period, and since the early 21st century, about 2,000 acres were being developed annually statewide. Using an approximation of about 1,500 acres of irrigation development per year, and an average overall water use of one foot, an estimated increase of about 15,000 acre-feet, per year might be projected over ten years. Irrigation does not seem to show a relationship between population growth and water use at this time.

Projected Industrial Water Use

Over the next ten years, total oil-field water use for fracking, brine dilution and well drilling is expected to increase from about 20,000 acre-feet per year in 2013 to about 30,000 to 37,000 acre-feet per year by 2024. Most of that increase will occur between 2014 and 2020, after which water use for oil development is expected to increase slowly (Table 5). Of this, water for drilling fluid and for maintenance water is expected to be less than 3,000 acre-feet per year. Most of the water (24,000 to 31,000 acre-feet per year) will be used for fracking. Incidental water use (dust control etc.) is expected to be small in comparison to the larger uses. These numbers are

Estimated Increase In Domestic, Commercial, & Light Industrial Water Use By Region

	Estimated Pop in 2015	Estimated Pop in 2025	Difference	% Increase	Gal/Day 2025 Est	Acre-Feet/Year 2025 Est
Region I	50,529	73,164	22,635	44.8%	2,716,200	3,043
Region II	114,709	121,443	6,734	5.9%	808,080	905
Region III	41,434	43,016	1,582	3.8%	189,840	213
Region IV	90,506	95,125	4,619	5.1%	554,280	621
Region V	196,322	218,799	22,477	11.4%	2,697,240	3,021
Region VI	56,813	58,222	1,409	2.5%	169,080	189
Region VII	151,192	169,993	18,801	12.4%	2,256,800	2,527
Region VIII	48,518	62,058	13,540	27.9%	1,624,800	1,820
STATEWIDE	750,023	841,820	91,797	12.2%	11,015,640	12,339

Table 4. Projected population change and estimated 10-year increase in per capita domestic, commercial and light industrial water use by state region.

approximations based on narrative information from drilling companies, and discussions with the North Dakota Oil and Gas Division.

WATER AVAILABILITY

Shifting population concentrations, and increasing numbers of industrial and agricultural developments across the state have resulted in a situation where North Dakota’s ground and surface water resources are becoming more fully appropriated. Thus, the presence or absence of water has become one of the primary factors in the success of industrial development – in particular, the following section provides an overview of the availability of North Dakota’s surface and ground water resources, including a color-coded map of potential future ground water development areas (Figure 13).

Surface Water Availability

North Dakota is a land of extreme climate. This fact is reflected in its water resources, where

surface water supplies are linked to the region’s highly variable precipitation patterns. During wet years, and more recently during the last two decades, North Dakota experienced a wet cycle that had rivers flow bank full, and lakes rising to record levels. As was experienced during the 1930s, droughts have caused rivers to go dry, and lake beds to become salt flats.

In North Dakota, the Missouri River system contains most of the state’s surface water. However, the greatest concentration of population in the state is situated in the Red River Valley, where surface water resources have been historically limited during periodic droughts. The availability of surface water is an issue that is currently confronting the state, and will likely drive water management in the future. This is particularly the case with the Missouri River system, where federal incursions on state water appropriation authority have restricted North Dakota water users from Missouri River water within reservoir boundaries.

Estimated Oil-Field Water Use (2014-2024)

Year	^a Estimated No. Wells Completed	^b Estimated Total Annual Frack-Water Use (acre-feet)	Estimated Total Annual Oil-Field Maintenance Water Use (acre-feet)	Estimated Total Annual Drilling Fluid Water Use (acre-feet)	Estimated Total Annual Oil-Field Water Use (acre-feet)
2014	2,280	-	-	-	-
2015	2,470	27,170	450	2,223	29,843
2016	2,660	29,260	703	2,394	32,357
2017	2,850	31,350	973	2,565	34,888
2018	2,850	31,350	1,243	2,565	35,158
2019	2,850	31,350	1,513	2,565	35,428
2020	2,850	31,350	1,783	2,565	35,698
2021	2,850	31,350	2,053	2,565	35,968
2022	2,850	31,350	2,324	2,565	36,239
2023	2,850	31,350	2,594	2,565	36,509
2024	2,850	31,350	2,864	2,565	36,779

Table 5. Estimated oil-field water use.

^a Estimates provided by the North Dakota Department of Oil and Gas (June 24, 2014).

^b Estimate of total oil field water use based on frack water trend analysis by M.H. Hove (June 24, 2014).

Estimates are based on mean water use rates of 11 acre-feet per frack job. About 3% of wells were estimated as “slick frack” efforts, requiring approximately 30 acre-feet per well.

Aquifer Potential For Development

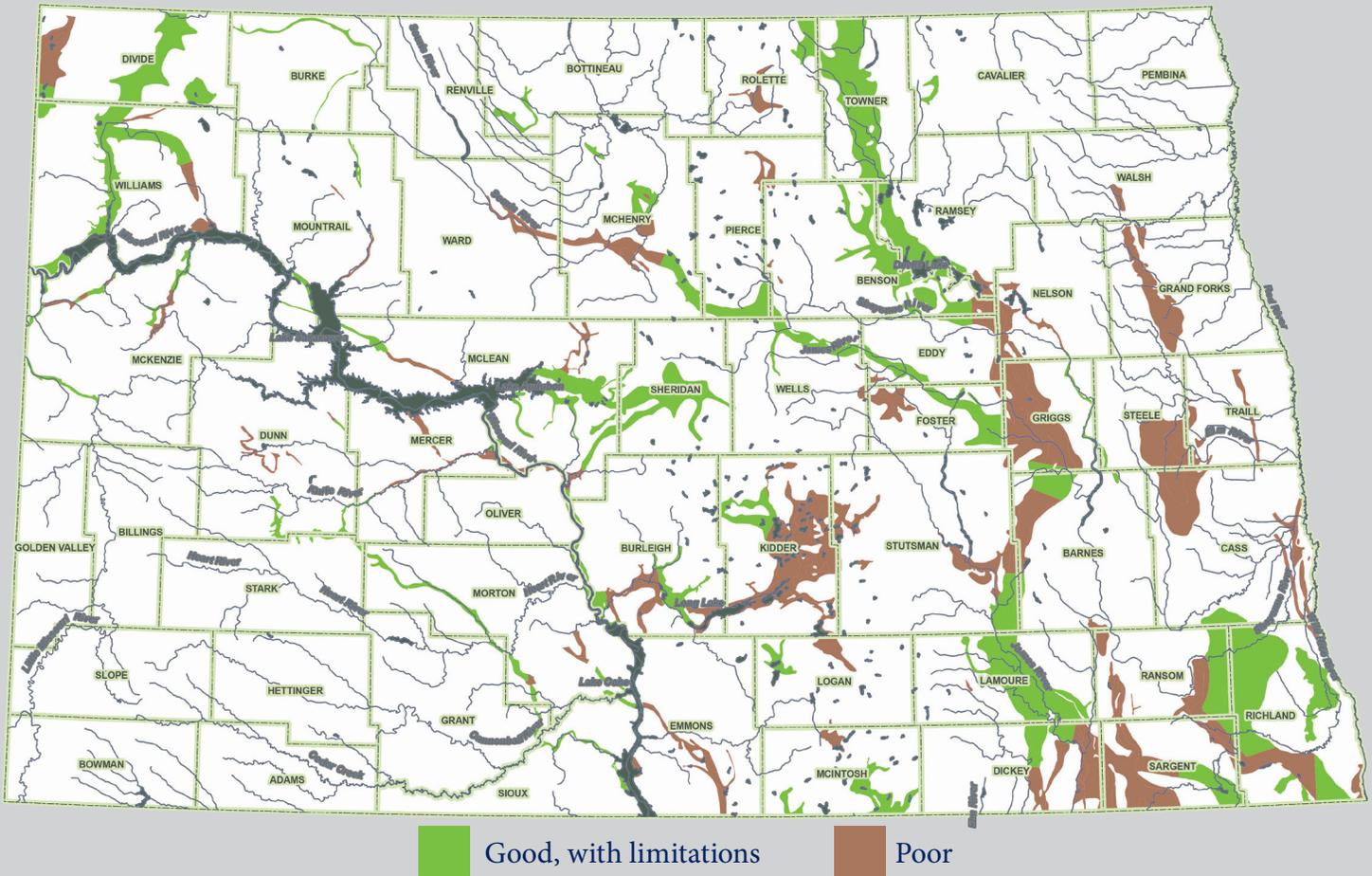


Figure 13. Aquifer potential for development.

Ground Water Availability

Ground water is water that occurs below the surface of the earth, where it occupies spaces in geologic strata. In North Dakota, ground water is found throughout the state, although often at great depth, or with a quality that makes it unsuitable as drinking water. The State Water Commission has spent many years collecting information on the quality and productivity of the state’s ground water, with detailed information available via the Commission’s website at www.swc.nd.gov.

Bedrock Aquifers

Bedrock aquifers occur throughout most of North Dakota. The bedrock aquifers most widely used by people are, the Lower Cretaceous Dakota Sandstone aquifer, the Upper Cretaceous Fox Hills Sandstone and Hell Creek aquifers, and the Tertiary Sand and Lignite aquifers within the Fort Union Formation, Golden Valley Formation, and White River Group.

The Lower Cretaceous Dakota Sandstone aquifer underlies most of North Dakota with depths ranging from about 200 feet below land surface in the eastern part of the state, to up to about 6,000 feet below land surface in the western part of the state. Individual well yields of up to about 1,000 gallons per minute are possible from properly completed wells in this aquifer. Due to relatively high salinity, particularly in the central and western part of the state, ground water from the Dakota aquifer generally is not suitable for most uses.

The Upper Cretaceous Fox Hills Sandstone and Hell Creek aquifers underlie the central and western parts of North Dakota. They occur beneath glacial overburden in the central part of the state and increase in depth to about 2,000 feet in the west-central part of the state. Individual well yields of up to about 200 gallons per minute are possible from properly completed wells in the Fox Hills aquifer.

Water from the Fox Hills and Hell Creek aquifers is commonly characterized by relatively high salinities, but can be used as a source for domestic and livestock, and limited municipal and rural use. The relatively high salinity renders most Fox Hills and Hell Creek waters unsuitable for irrigation use.

The Fox Hills aquifer provides an important free-flowing source of ground water for ranchers in low-lying areas in the western part of the state (Yellowstone, Little Missouri, and Missouri River valleys). However, because of declining water levels in the Fox Hills aquifer, it is the policy of the State Engineer to direct large-scale ground water diversions to other ground water sources, if feasible, to reduce the rate of water-level decline, and to extend the period of free-flowing conditions.

The Tertiary Sand and Lignite aquifers within the Fort Union and Golden Valley Formations, and the White River Group, underlie the western part of North Dakota. Individual well yields of up to about 50 gallons per minute are possible from properly completed wells in the Tertiary sand and Lignite aquifers, but yields of 5 to 10 gallons per minute are more common. These aquifers are an important source of water for domestic and livestock use in western North Dakota. Like the Fox Hills and Hell Creek aquifers, ground water in the Tertiary Sand and Lignite aquifers is commonly characterized by relatively high salinities that pose restrictions for irrigation use.

Glacial Drift Aquifers

About two-thirds of the State of North Dakota is covered by glacial drift. Major aquifers in the glacial drift are comprised of water deposited sand and gravel.

The major glacial drift sand and gravel aquifers are divided into surficial and buried aquifers. Surficial aquifers receive recharge from direct infiltration of precipitation and snowmelt. Buried aquifers generally are confined by less permeable, clay-rich glacial drift (till and/or lake sediments), and as a result, recharge is significantly less than recharge associated with surficial aquifers.

Individual well yields in glacial drift aquifers are highly variable, ranging from a few gallons per minute in thin, narrow, fine-grained parts of the aquifers, to a few thousand gallons per minute in thick, extensive, coarse-grained parts of the aquifer. Water quality in the glacial drift aquifers is also highly variable, ranging from about 100 to 20,000 milligrams per liter dissolved solids concentrations. In comparison with sedimentary bedrock aquifers, the glacial drift aquifers commonly provide larger individual well yields and better water quality (lower salinity).

The major glacial drift aquifers in North Dakota are outlined in the Ground Water Availability map on the previous page. In addition, the map shows areas in these aquifers where the potential for additional ground water development is good with limitations (areas shown in green) or poor (areas shown in brown). This map was developed to provide a preliminary basis for considering sites for developing relatively large-scale ground water supplies. The areas in the glacial drift aquifers where the potential for ground water development is poor are characterized by existing large-scale ground water development. These areas are at, or near, full appropriation.

Little to moderate, or no existing ground water development generally characterizes the areas in the glacial drift aquifers where the potential for additional large-scale ground water development is good. It is important to understand that in the areas where the potential for additional ground water development is good, there may exist complex aquifer geometries and/or poor water quality characteristics that could restrict sustained large-scale ground water withdrawals for a particular use.

For example, in several areas of the state where the water quality is too poor to irrigate soils, there is still the potential for those quantities of water to be available for other uses such as oil development. Therefore, this map should be used only as a preliminary guide to identify potentially suitable ground water supplies. Individuals interested in developing a relatively large-scale ground water supply should contact hydrologists in the Water

Appropriation Division of the Water Commission to further identify sites that may meet their specific needs.

Hydrologic data to assess the potential for developing a ground water supply in the form of descriptive geologic logs from test holes, water levels, and water quality analyses can be accessed on the Commission website at www.swc.nd.gov, by clicking on the “Map and Data Resources” link. In addition, scanned versions of reports in the form of County Ground Water Studies, Water Resource Investigations, and City Ground Water Studies can be accessed on the same website by clicking the “Reports and Publications” link.

Water Conservation and Recycling

Although North Dakota has been in an extended wet cycle for two decades, there have been exceedingly dry years, such as 2012, within that period. The reality is that drought has been, and will be a recurring issue in the state. And, with an increasing population and the concentration of people into urban areas, the demands upon available water resources will only grow.

Drought planning, water conservation, and to a lesser extent, recycling, are strategies that communities throughout the state utilize to reduce water usage when availability is limited. Cities

throughout the state have modernized their water and sewer lines to prevent in-system losses that waste water, and increase costs.

In North Dakota, water reuse started with utilizing return flows from irrigation systems. Over the years, gray water produced through sewage lagoons became more widely used as an irrigation source. In the 1990s, the ethanol industry also began using gray water from municipal treatment plants and power generation. More recently, oil development water needs have begun to drive research into the feasibility of water reuse in western North Dakota. It is important to note that changes in beneficial use require a new water use permit from the Office of the State Engineer.

Ground water injection or infiltration are strategies that have been considered in the state in order to “bank” surface water when it is readily available as storage in shallow ground water. Studies conducted by the Commission in the 1980s have shown that the technology is feasible, although somewhat expensive. Currently, the Forest River Colony Artificial Recharge Project has shown positive results by infiltrating water from spring flow of the forest river into a local aquifer for use in irrigation later in the season.



Managing Resources

The availability and sustainability of North Dakota's waters is highly critical for the wellbeing of its citizens and the sustainability of its cities, farms and industries. In addressing the State Constitutional Convention in 1889, Major John Wesley Powell, second director of the U.S. Geological Survey made the following statement:

"...All other wealth falls into insignificance compared with that which is to come from these lands from the pouring on them of the running streams of this country. Don't let these streams get out of the possession of the people. If you fail in making a constitution in any other respect, fail not in this one. Take lessons from California and Colorado. Fix it in your constitution that no corporation – no body of men – no capital can get possessions and right to your waters. Hold the waters in the hands of the people."

Following this advice, the State Constitutional Convention wrote the General Provisions of the State Constitution to include: *"All flowing streams and natural watercourses shall forever remain the property of the state for mining, irrigation and manufacturing purposes."* Waters of the state, then, are reserved by the state and allocated to its citizens, cities, industries, and agricultural producers for beneficial use under the Prior Appropriation Doctrine.

Water supplies in North Dakota, while not critically lacking, have been heavily developed over the last half-century, and access to water has become increasingly competitive. The Missouri River is the only plentiful source of unappropriated water in the state. Most of the state's good quality ground water is found in aquifers of glaciofluvial origin, primarily in the eastern, central and northern portions of the state. Many of these aquifers are nearly fully appropriated within their known extents and are unavailable for additional large-scale future use. Other areas of the state are underlain by bedrock aquifers. Bedrock aquifers, however, frequently have limited yield, and often have challenging water

quality issues, with brackish, saline or hypersaline waters, high sodium, high iron or high alkalinity, as described in the previous chapter.

NORTH DAKOTA WATER APPROPRIATION LAW AND ADMINISTRATION

Water rights are not a trivial matter. Municipal needs and the investment costs of most industrial and agricultural enterprises are such that unexpected water shortages caused by spurious or hydrologically unsound appropriations can create severe hardship and in some cases, bankruptcies. For this reason, the administration and enforcement of water laws, rules and policies that assure the sustainability of the resource and protect established water rights of applicants, are of the utmost importance for the prosperity and welfare of the state's citizens. The State Engineer, assisted by the Water Appropriation Division of the North Dakota State Water Commission, is charged with managing the use of the state's waters as directed under Chapter 61-04 of North Dakota's Century Code, and Article 89-03 of the State Administrative Code.

APPROPRIATION RESPONSIBILITIES

The Water Appropriations Division guides applicants through the water permit application and public comment process. Each application is then assigned to a hydrologist/engineer responsible for the area or for the specific water resource requested.

Criteria evaluated by the Appropriations Division, specified under NDCC 61-04-06, are:

- a. The rights of a prior appropriator will not be unduly affected.
- b. The proposed means of diversion or construction are adequate.
- c. The proposed use of water is beneficial.
- d. The proposed appropriation is in the public interest. In determining the public interest the following shall be considered:

- i The benefit to the applicant.
- ii The effect of economic activity resulting from the proposed appropriation.
- iii The effect on fish and game resources and public recreational opportunities.
- iv The effect of loss of alternate uses of water that might be made within a reasonable time if not precluded or hindered by the proposed appropriation.
- v Harm to others resulting from the proposed appropriation.
- vi The intent and ability of the applicant to complete the appropriation.

Evaluations are comprehensive, and may require several months in areas where water supplies are limited and critical, or where substantive issues have been raised in public comments. Factors affecting the availability of water include: the amount of the request, the size of the water supply, whether the source is ground water or surface water, the period of use, the proximity of prior water appropriators, the locations of recharge and discharge areas, possible water quality impacts caused by diversion of water, and probable long-term effects of climatic variation on local water supplies. In highly competitive settings or where hydrologic data are sparse, further exploratory drilling and data acquisition may be needed. The development of appropriate ground water models is generally required in highly competitive settings. In some critical cases, evaluations may require several years. The Appropriations Division drafts a recommendation to the State Engineer for approval, denial, or in some cases to hold all or part of an application in abeyance until sufficient information is available to support a definite answer. The draft recommendation is submitted for review to “parties of record” who have expressed concern during the comment period. “Parties of record” may request information or an adjudicative hearing if they have further concerns over an application. (See Water Permitting Process in Appendix.)

Annual reports of water use are required for each water permit holder (Figure 14 & Table 6). The

Office of the State Engineer is currently developing a real-time telemetry system for monitoring high-priority and high-risk cases. Temporary water permits can be obtained for short-term temporary needs, such as road or building construction or other short-term or emergency needs. Immediate emergency needs, such as water for fire fighting, are accommodated with common sense, allowing for permission to be obtained verbally and filing the necessary paperwork post-facto. The State Engineer encourages water conservation, and accommodates innovative measures for optimizing beneficial use of existing resources, such as water treatment and reuse or aquifer recharge and recovery.

INFORMATION AND DATA RESOURCES: ACQUISITION AND USE

Because the need for water is critical for human habitation, and the possibility of running out of water is so costly for most enterprises, the State Engineer and the Water Appropriation Division staff place a high priority on due diligence and the information, tools and resources necessary to assure

Conditional & Perfected Water Permit Filings 2003-2013

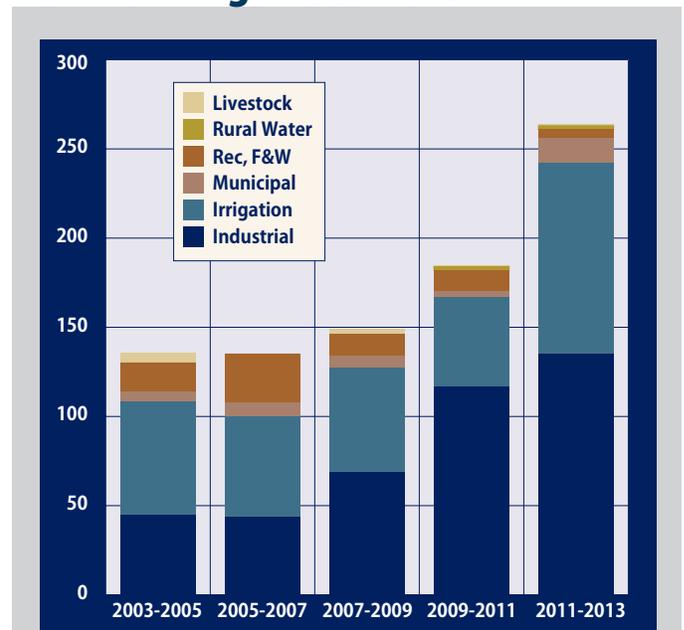


Figure 14. Water use in North Dakota from ground water and surface water sources between 2003 and 2013 held relatively constant, except for irrigation, (which is highly responsive to climate conditions), and fracking (which is influenced by world oil prices).

2013 Water Use Permits

	Conditionally Approved	Held In Abeyance	Perfected	Total
Commercial	4	0	9	13
Domestic	1	0	10	11
Fish & Wildlife	106	0	217	323
Flood Control	8	0	45	53
Industrial	161	46	240	447
Irrigation	429	58	1,812	2,299
Multiple-Uses	9	0	19	28
Municipal	26	3	253	282
Power Generation	0	0	10	10
Recreation	13	0	154	167
Rural Water	12	4	87	103
Stock	14	0	70	84
TOTAL	783	111	2,926	3,820

Table 6. 2013 water use permits.

NORTH DAKOTA WATER PERMIT DEFINITIONS

Temporary Water Permit: This type of permit allows an applicant to temporarily use a specified amount of water from a specific source for up to one year for beneficial uses. No water right accrues.

Application in Processing: The water permit application is either in administrative or hydrological review. Administrative review deals with the nonhydrologic aspects of processing a water permit application. Hydrologic review deals with the evaluation of the water permit application in accordance with North Dakota Century Code 61-04-06.

Conditionally Approved Water Permit: The permit application has fulfilled all the administrative, legal, and hydrological requirements and is approved to begin applying water to beneficial use.

Perfected Water Permit: This is a “Conditionally Approved” permit which has been inspected by State Engineer staff and a determination made that water is being applied to beneficial use in accordance with the conditions prescribed in the conditional water permit.

Held in Abeyance: This status is used when only a portion of the requested water withdrawal is conditionally approved by the State Engineer. The unapproved portion of the water permit request is held in abeyance pending the acquisition of additional hydrologic data that will be used to provide a basis for future action by the State Engineer.

Withheld, Deferred: The permit application has fulfilled all the administrative criteria. However, the entire requested water withdrawal amount requires additional hydrologic analysis, and in many instances, the acquisition of additional hydrologic data before action can be taken.

Void: A water permit application was filed with the State Engineer, however, the applicant did not complete the application process.

Denied: The permit application has fulfilled all the administrative criteria. However, the hydrological analysis indicates the water permit application cannot be approved in accordance with North Dakota Century Code 61-04-06.

Canceled: If a conditional or perfected water permit holder fails to apply water to beneficial use, as cited by the water permit beneficial use date or fails to apply water to beneficial use for three successive years, unless the failure or cessation of use has been due to the unavailability of water, a justifiable inability to complete the works, or other good and sufficient cause, the State Engineer may cancel the water permit and declare the water permit or right forfeited.

high-quality water resource evaluations. The Water Appropriation Division, during the 1950s through the 1980s, and in cooperation with the U.S. Geological Survey and the North Dakota State Geological Survey, completed a comprehensive County Ground Water Studies program.

GROUND WATER STUDIES

These county studies identified major aquifers, their location and extent, hydraulic properties, water chemistry, estimated well yields, sources of recharge, locations of discharge, and the occurrence and movement of ground water. The county studies have provided the basic framework for ongoing ground water resource evaluation. Numerous other reports and publications on ground water resources have been completed, including 118 “ND Ground Water Studies,” many of which are related to water supply needs of various communities and 55 Water Resource Investigations (WRI) pertaining to specific water resource issues and problems. For example, a comprehensive survey of water supplies for energy use was published as WRI report No. 49 in 2010. All reports are available in electronic format on the North Dakota State Water Commission website (www.swc.nd.gov) under the “Reports and Publications” section.

WATER EXPLORATION, MONITORING, AND GAGING

The division also maintains and operates a drill rig for ongoing ground water exploration and investigation. Division hydrologists use the drill rig to complete an additional 100 to 150 bore-holes and monitoring well installations every year. A total of 4,300 monitoring wells are measured monthly or quarterly for water levels, and approximately every five years for general chemistry and selected trace elements. The data (approx. 5 million water level readings and 71,000 water chemistry data measurements) are managed in a database that provides timely and cost effective data recovery and organization for staff hydrologists/engineers through development of database organizational tools. The data are also available for the general public through an easily accessible, interactive map web portal. The database also includes locations, lithologies, well construction, and other metadata

for each monitoring site; scanned copies of well drillers’ reports for private wells and test holes; water-permit descriptions and annual water-use data, and other supplementary metadata.

For surface water evaluation the agency supports, in cooperation with the U.S. Geological Survey, 80 gaging stations on state rivers and streams, and the agency obtains gage measurements on approximately 53 additional sites. Cooperative stream-flow and water quality measurements are available on the U.S. Geological Survey website <http://waterwatch.usgs.gov/?m=real&r=nd>.

Water resource issues are complex. There are inherent difficulties in evaluating the boundaries, properties, and highly complex depositional processes that created ground water reservoirs. Also, the variability and unpredictable effect of climate on surface water and ground water resources result in highly data intensive water resource evaluations that involve the use of ground water models, and mapping and statistical tools. The application framework and the associated data infrastructure is fully integrated into the daily workflow of the Water Appropriation Division. An array of analysis tools has been developed to address water resources management functions, which have been seamlessly integrated into the application/data management infrastructure. The scientific as well as system-design expertise of the agency information-resource personnel has enabled exceptional communication and interactive capabilities between hydrologic and data management staff, enhancing the timely problem-solving capabilities of the agency.

In a recent (2013) survey of data acquisition and dissemination capabilities for water management in seventeen western states by Sandia National Laboratory, the information acquisition and data delivery system maintained by the North Dakota State Water Commission’s Appropriation Division was rated as one of the most advanced in the nation.

WATER PERMIT MANAGEMENT AND CHALLENGES

A major challenge since about 2010 has been water supply for oil-well development. Scarcity of ground water and surface water in western North Dakota and Corps of Engineers encroachment on traditional state access rights to waters of the Missouri River along Lake Sakakawea and elsewhere has resulted in a situation where water has been hauled long distances, causing public risk and infrastructure damage. Pending adjustments to infrastructure, a substantial part of the water has been supplied by ephemeral surface waters created by large snowmelt and rainfall in the 2011 flood season, and thereafter. To facilitate transitional water supplies, the Office of the State Engineer has evaluated and processed a total number more than 2,600 temporary water permits from 2010 through the summer of 2014, compared with an annual average of about 200 temporary water permits before that time (Figure 15).

Temporary water permit applications, and other applications for oil-field water supply, as well as monitoring and regulatory requirements have required long hours of staff time. In addition, the value of water supply sales and an increase in illegal diversion for oil field supply sales has resulted in the need for more stringent monitoring and larger fines. Current policy is that illegal pumping for industrial use will be fined a dollar amount equal to the total revenue gained from illegal sales. Some fines have been quite substantial, ranging from a few hundred dollars, to recent fines of \$600,000 and \$800,000. In addition, if a user exceeds their allocated amount in a given year, the amount of overage is subtracted from their available amount the following year. Permit revocation is also a potential consequence.

WATER USE TELEMETRY

In 2011, the Water Commission initiated a study to determine the most effective and cost-efficient method of implementing telemetry to track water use by water depots in western North Dakota.

In general, the providers of the remote telemetry hardware being used to track water usage have

Temporary Water Permits: Applications Processed By Year

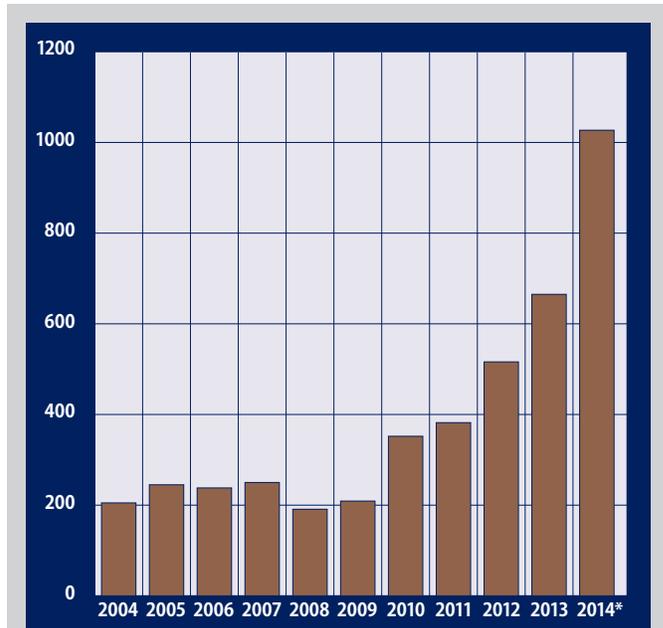


Figure 15. Temporary water permits have increased dramatically since 2004. *Projected.

developed proprietary methodologies for collecting and compiling information for their respective meter installations. This resulted in a lack of uniformity in the organization of the data from one vendor site to the next. Accessing, collecting, and analyzing the data would have required the Water Commission to maintain separate accounts to remotely login and collect the information for each site. This process would have been very time-consuming, and would have required significant resources to maintain and verify account information for each site with the remote telemetry installed.

To utilize the existing telemetry technology, the Water Commission would have been required to mandate the use of either a single vendor, or a limited selection of vendors to ensure consistency in the water use monitoring process. The telemetry study examined a range of alternatives, and ultimately developed recommendations that included the establishment of uniform data specifications through which users would “push” reported measurements through a computer program developed by the Water Commission.

Using this approach, the Water Commission provided the means to standardize the data and the reporting process, while avoiding interfering with the relationship between the water user and the remote telemetry provider.

The water use information was tracked using a program developed by Water Commission staff. The program provided specifications for exchanging formatted information between different computer and software systems via the Internet. The developed program provides a simple data format that allows water users to transmit data to a remote source.

The requirement to provide data in the same format through a standardized program has resulted in numerous benefits.

- 1) Ease and simplicity of data reporting
- 2) Simplicity and efficiency for data analysis
- 3) Portability for water users and regulatory entities

Prior to the implementation of the water use data computer program, water depot owners were required to file monthly meter reading reports. In addition, Water Commission staff needed to spend significant time inputting data from the various water users, which delayed reporting efforts, and hampered analysis. The Water Commission-designed program allows the data to be quickly and easily filed, reviewed, categorized, and scanned for trends.

Because the Office of the State Engineer is a regulatory entity, with the force of law behind its actions, it was able to require all water users to incorporate this methodology into their activities. Other water and natural resource managers outside of North Dakota have been closely watching North Dakota's telemetry data gathering efforts, and are now incorporating these services into their own project areas.

SPECIAL INVESTIGATIONS

In addition to water permit evaluation, water exploration, and water resource monitoring and data management, the Office of the State Engineer

conducts special investigations related to water resources. Examples include: policy analysis for state issues related to water appropriation; cooperative water supply studies for municipalities; state-authorized water projects; and cooperative water quality and water process investigations with the Health Department, the North Dakota National Guard, state universities, other state and federal agencies and programs, and other Water Commission divisions when requested and appropriate. Agency surface water engineers represent and advise the State Engineer on international issues related to water appropriation, including serving as co-secretary to the International Souris River Board and serving on the hydrology committee of the International Red River Board.

OTHER REGULATORY FUNCTIONS

As authorized by NDCC 61-03, 61-04, and 61-16.1, the State Engineer is responsible for regulating the construction of dams, dikes, and other water control facilities. Since 1957, NDCC 61-32 and NDCC 61-15 have authorized the State Engineer to regulate drainage. The State Engineer is also responsible for managing sovereign lands, dam safety, environmental reviews, and floodplain management.

In addition to these permitting and regulatory processes, the Office of the State Engineer and State Water Commission provide technical assistance to local water resource districts, conduct flow determinations in accordance with NDCC 24-03-08, make watercourse determinations in accordance with NDCC 61-01-06, provide appeal review of water resource district decisions, serve as sources of information to the public, handle easement releases for abandoned dams, and conduct reviews of Public Service Commission mining permits and U.S. Army Corps Section 404 permits.

DAM SAFETY PROGRAM

The purpose of North Dakota's dam safety program is to minimize the risk to life and property associated with the potential failure of dams in the state. A national dam inspection program took place in 1978-1981 under the direction of the U.S.

Army Corps of Engineers following a series of dam failures across the country in the 1970s. The North Dakota Dam Safety Program, administered by the Water Commission, was initiated to continue and build on the national program of inspecting dams and assessing their safety at the local level.

A primary function of North Dakota's dam safety program is to conduct dam inspections in order to identify dams in need of maintenance or repair. Staff members conduct full inspections of non-federally owned dams classified as high or medium hazard on a rotational basis. The hazard classification is determined based on the consequences if the dam were to fail, and is not a reflection of the condition of the dam. High hazard dams are currently scheduled for inspection at least once every four years, and medium hazard dams greater than ten feet high are currently scheduled for inspection at least once every ten years. This schedule is continually updated as necessary, such as when a new dam is constructed or the hazard classification of a dam is updated. Selected dams are also given a partial inspection annually to check for damage after the spring runoff season. Additional inspections are conducted on request from dam owners or the public, or when there are concerns at a dam, such as during flood events.

The completion of Emergency Action Plans (EAPs) for non-federal high and medium hazard dams is a priority of North Dakota's dam safety program. The purpose of EAPs is to develop a pre-planned strategy for individual dams that will help minimize the loss of life and property damage in the event of a dam failure. EAPs are the responsibility of dam owners. However, local entities that have limited staff and financial resources own many of North Dakota's dams, so the Water Commission has played an active role in assisting dam owners with developing EAPs for their dams.

Because many of North Dakota's dams were constructed over half a century ago, a large percentage of them are nearing, or have surpassed their estimated life expectancy. As such, there is a growing need to repair an ever-increasing number of dams in all parts of the state. This need has been

compounded by recent flood events. For example, in 2013 in northeast North Dakota, record snowfall coupled with later melt dates and significant rain events, resulted in flood damages to a number of dams in Pembina and Cavalier counties. Dams significantly affected by the 2013 flood include Olson, Bourbanis, and Renwick. In the past, the Water Commission has provided financial assistance for dam repairs throughout the state. With the aging of this infrastructure and the ongoing wet cycle, it is likely that the Water Commission will continue its support of improvements to these critical structures in the future.

ENVIRONMENTAL REVIEWS

Water Commission staff conduct and coordinate interagency environmental reviews involving projects associated with Community Development Block Grants and Loans, Hazard Mitigation Grant Program, Rural Development Loan Program, highway improvements, airport improvements, dike/levee projects, water storage impoundments, municipal and rural water supply development and treatment projects, municipal waste treatment projects, oil and gas well projects, oil and gas pipeline projects, electrical transmission line development/modification/maintenance projects, and various federal and state water, land, and wildlife management plans, studies, Environmental Assessments and Environmental Impact Statements.

Environmental review comments address compliance requirements involving State Engineer and Water Commission regulatory responsibilities in issuing permits pertaining to water appropriation, floodplain management, sovereign lands, and the construction of dikes, levees, dams, drains, and water holding ponds. Staff members also provide information concerning the location of water wells.

In 2013, Water Commission staff averaged 42 inter-agency environmental reviews per month.

FLOODPLAIN MANAGEMENT

North Dakota has a long history of flood-related challenges, and it has become even more common over the last decade. One way to reduce the potential

negative impacts of flooding is to have effective state and community floodplain management programs in place to help mitigate and minimize losses.

Floodplain management supplements the structural approach, which uses dams, diversions, and levees to move water away from people, and uses the regulation of land and development to make it less susceptible to damage from this natural hazard. This non-structural approach is done under the umbrella of the National Flood Insurance Program (NFIP), which trades the availability of flood insurance for the floodplain management oversight of participating cities, counties, and townships within the state.

The Federal Emergency Management Agency (FEMA) administers the NFIP and through community floodplain management, helps guide development and building within identified floodplain areas. Flood Insurance Rate Maps (FIRMs) which identify areas of the 1 percent chance flood, are the basis for these community floodplain management programs.

Floodplain management determines how to build, develop, or redevelop relative to an identified flood hazard. All this is intended to help break the cycle of disaster-relief-repair-disaster that plagues many areas of the state.

National Flood Insurance Program

The NFIP works on a partnership formed of federal, state, and local governments. Local governments use state laws concerning planning, zoning and development as a basis to practice floodplain management. The North Dakota Floodplain Management Act of 1981 adopts the NFIP by reference in Chapter 61-16.2 of the North Dakota Century Code. This chapter was amended in 1999 and again in 2003 by the State Legislature, which broadened and refined the duties of the State Engineer.

FEMA provides partnership funding to states for their role in the Community Assistance Program (CAP), Map Modernization Management Support (MMMS) and its successor Risk MAP. Three staff

members work with these FEMA funded programs within the Regulatory Section.

The MMMS Coordinator manages Risk MAP, a program which was initiated in federal fiscal year (FFY) 2009 for the purpose of identifying, assessing, communicating, and mitigating flood hazard risks, with the goals of delivering quality data that will increase public awareness and lead to actions that will reduce the risk to life and property. Both the MMMS and Risk MAP programs are 100 percent FEMA funded.

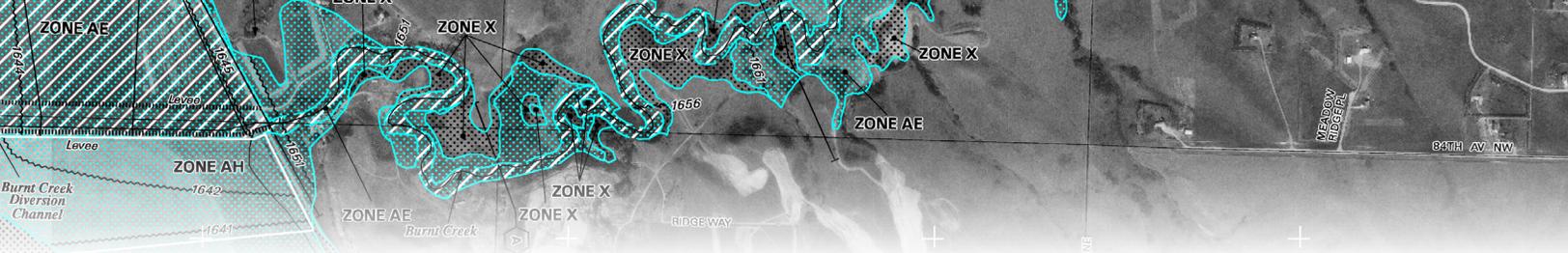
The MMMS Coordinator oversees the selection of engineering consultants chosen annually to do the work tasks of FIRM digitization and subsequent contract management. Funding of \$289,545 in FFY 2012 and \$342,960 in FFY 2013 were used for projects in Traill County and the Upper James River watershed.

Community Assistance Program

Two staff members work with the CAP, funded 75 percent by FEMA, concentrating on community floodplain management as practiced by the National Flood Insurance Program (NFIP). Through CAP, floodplain management staff assists 328 NFIP enrolled state communities with administration of their floodplain management responsibilities. Each community designates a representative as their floodplain administrator to oversee floodplain development within flood prone or identified floodplains. Staff work closely with these community administrators to provide technical assistance through a variety of means. NDCC Chapter 61-16.2 outlines state floodplain standards above the NFIP minimum standards that communities are expected to follow.

The financial stresses facing the NFIP led Congress to begin efforts to reform the program in 2012, which resulted in the passage of the Biggert-Waters Flood Insurance Reform Act (BWIRA) of 2012.

Only 20% of the NFIP policies were subsidized, but those 20% were generally in the areas with the greatest number of claims. The BWIRA was an attempt to address the fact that the subsidies



provided to property owners through the NFIP were unsustainable due to the rising costs of the program. Primarily, this was done by removing exceptions to the program and by eliminating the government subsidies the NFIP provided, causing policy holders to pay premiums for policies that more accurately reflected their higher flood risk. Additionally, communities in the NFIP that were constructed prior to the adoption of its first Flood Insurance Rate Map (FIRM), or were given exceptions for structure features, such as basements, would now have those additional risk factors reflected in their premium rates. For example, Fargo is a pre-FIRM city. What this means for the people living in areas affected by the changes to the NFIP, is that they would see rates increase by 25% or more, and may not receive exceptions for basements built before their FIRM was created.

Although the financial difficulties faced by the NFIP require action, there has been significant opposition by many, including North Dakota’s Congressional delegation to enacting BWIRA in its entirety. It is unknown at this time if those efforts will be successful.

Impacts to North Dakota if the BWIRA law goes into effect:

- There are currently 13,762 flood insurance policies in effect in the state.
- 21% of the 13,762 policies in effect are written in identified floodplains, and 79% are written for non-floodplain areas.
- Approximately 14% (1,900) of existing policyholders are now affected by the five-year timetable of flood insurance premium increases under the BWIRA.
- New policies written in the future for pre-FIRM structures will immediately be impacted.
- Historically, many North Dakotans have timed the purchase of flood insurance ahead of an impending spring snowmelt flood, with policies often dropped when the threat has passed.

- New policies will immediately be subject to full actuarial rates, meaning much higher premiums.
- The cost of all flood insurance will be increasing.

Risk MAP

In an effort to leverage the successes of the FEMA Map Modernization program, a program last funded in 2008 to modernize and digitize the nation’s FIRMs, FEMA developed the Risk Mapping, Assessment, and Planning (MAP) program.

The goal of the Risk MAP program is to deliver quality data that increases public awareness, which in turn leads to actions that reduce the risk to life and property from flooding. This new program further enhances the usability and value of flood hazard mapping by utilizing state and local partnerships to further identify flood hazards. The State Water Commission has continued its work with FEMA as a partner in this effort to more adequately portray the flood risks facing state residents.

Following FEMA’s nationwide prioritization criteria and with the assistance of local study contractors, the most populous and flood-prone communities of our state will be getting their FIRMs digitized. The counties that either already have, or will be receiving digitized flood maps through one of the two FEMA programs are: Grand Forks, Traill, Richland, Walsh, Pembina, Barnes, Ransom, Stutsman, Nelson, Ramsey, Benson, Bottineau, Rolette, McHenry, Ward, Stark, Bowman, Hettinger, Burleigh, Cass, Morton, McKenzie, Slope, Wells, Eddy, Foster, and Mercer.

The Water Commission continues to assume an active management role in the flood hazard identification and mapping process under each of these FEMA programs in an effort to assist

communities in obtaining more accurate FIRMs. To date, North Dakota has received roughly \$8.5 million in federal funds for either Map Mod or Risk MAP projects in 27 counties (Figure 16). In North Dakota, the NFIP has participation from 328 communities of which 228 communities have FIRMs.

SOVEREIGN LANDS MANAGEMENT

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

The goal of the State Engineer in managing this vital resource is to manage, operate, and supervise North

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

In 2007, the Office of the State Engineer completed a North Dakota Sovereign Land Management Plan. This plan outlined the State Engineer’s authority to manage sovereign lands and it included recommendations and corresponding action strategies that are intended to improve management of this valuable resource. This management plan is still in use today to aid in the management of this resource.

Digitized Flood Maps

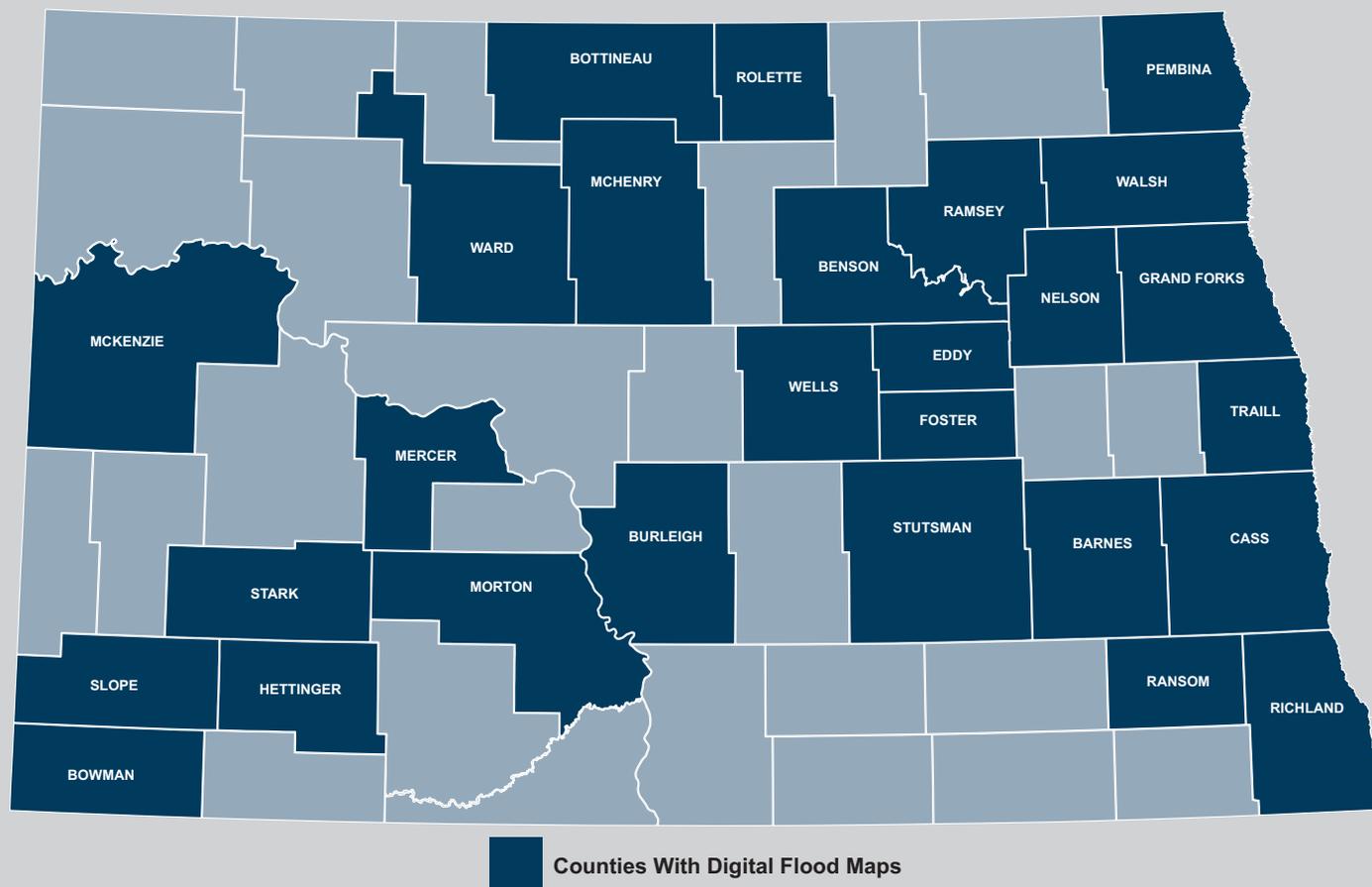


Figure 16. Counties with digital flood maps.

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

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

On land below the ordinary high watermark of navigable water bodies, motorized vehicle use is prohibited, except for a few exceptions that do provide for those types of opportunities. These exceptions can be found in N.D.A.C. 89-10-01-13. Signs have been installed in areas where off road vehicles are known to historically be accessing sovereign lands. By installing these signs, enforcement activities can take place with cooperation of the North Dakota Game and Fish Department, as well as other local law enforcement agencies.

Because the Office of the State Engineer does not currently employ law enforcement staff, a contract agreement has been developed with the Game and Fish Department to have their existing game wardens assist with sovereign land-related law enforcement, since they are already in the field. Coordination efforts for law enforcement have also been discussed with local law enforcement agencies in regard to off-road vehicle traffic.



Developing North Dakota's Water Resources - Biennium In Review

With the growth of North Dakota's oil industry over the course of the last four 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 2013-2015 biennium, a plan was forged through the cooperative efforts of the Water Commission, Governor's Office, Legislature, and the water community. The priorities of that plan for water development in North Dakota included loan opportunities, water supply, flood control, irrigation, general water management, and weather modification projects.

2013-2015 PRIORITY PROJECTS

- Community Water Facility Revolving Loan Fund
- Devils Lake Flood Control
- Fargo Flood Control
- Fargo Water Supply
- General Water Management
- Irrigation
- Mouse River Flood Control
- Northwest Area Water Supply
- Red River Valley Water Supply
- Sheyenne River Flood Control
- Southwest Pipeline Project
- Water Supply Program
- Weather Modification
- Western Area Water Supply

The initial funding plan for the above priorities totaled \$515 million from state sources – mostly the Resources Trust Fund. But in response to critical water supply infrastructure needs in oil producing counties in western North Dakota, state contributions to the above priorities were increased to \$546 million as of September 2014.

The following narrative provides an overview of progress and efforts related to the state's 2013-2015 water development priorities.



Community Water Facility Revolving Loan Fund

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

Devils Lake Flood Control

- Continued to implement the state’s 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.
- Continued operation of both Devils Lake outlets. The maximum total discharge of the West and East Devils Lake outlets is now 600 cfs (See Map Appendix).
- Since the outlets began operating almost ten years ago, about 500,000 acre-feet of floodwater has been pumped from the lake. Of that total,

about 300,000 acre-feet of floodwater was pumped in 2012 and 2013 alone, with another 165,837 acre-feet removed in 2014.

- Continued to manage operational efforts associated with the Tolna Coulee Control Structure – which was completed in 2012 to reduce the risk of a catastrophic natural overflow of Devils Lake. The control structure was developed in cooperation with the U.S. Army Corps of Engineers. That project is now owned and operated by the Water Commission.
- Various efforts to store water and reduce runoff in the upper basin continue - mostly through a variety of conservation programs.

Fargo Flood Control

- A Record of Decision (ROD) 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 (F-M) diversion project (See Map Appendix). The signing of WRRDA allows the federal government to appropriate funding for construction.



- During the 2013-2015 biennium, the Commission approved \$100 million for the diversion project, making the total state commitment \$175 million to date.
- Construction has been started on the Oxbow-Hickson-Bakke levee project upstream of the Fargo-Moorhead area.
- In downtown Fargo, and near El Zagal Golf Course, floodwall construction efforts and utility relocations are underway. And in south Fargo, work is moving forward to reduce flood impacts related to existing legal drains.
- Property acquisitions, and project planning and design are ongoing.

Fargo Water Supply

- Approved \$15 million in both the 2011-2013 and 2013-2015 biennia, for a total of \$30 million for water treatment improvements in Fargo that are needed to address increased sulfate concentrations in the Sheyenne River from Devils Lake outlet operations.
- This contribution from the state accounts for 50 percent of Fargo’s water treatment plant improvement costs related to mitigating Devils Lake outlet flows. All other water treatment plant improvement costs not related to Devils Lake outlet mitigation are being covered by the city of Fargo.

General Water Management

- By three-quarters of the way into the 2013-2015 biennium, the Water Commission had approved over \$30 million in funding for general water management projects across the state.
- General water management projects include rural flood control, snagging and clearing, channel improvements, recreational projects, dam repairs, planning efforts, special studies, and mitigation for operation of the Devils Lake outlets.

Irrigation

- Approved \$350,000 for an irrigation transmission line reroute at the Bufford Trenton Irrigation District, and about \$256,000 for irrigation development along the McClusky Canal at mile markers 10 and 49. The McClusky Canal project is expected to serve about 425 acres of farmland.

Mouse River Enhanced Flood Protection

- The Mouse River Enhanced Flood Protection Project (MREFPP) is designed to provide flood relief to North Dakota’s Mouse River valley residents – both urban and rural. The project was originally initiated by the Water Commission in response to a request for assistance from the Souris River Joint Water Resources Board following the record-breaking flood of 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 the summer of 2013, the Rural Reaches Alternatives Report and final Mouse River Reconnaissance Study were issued. Implementation is now underway.
- The Souris River Joint Board has developed a long-range capital improvements plan (through 2039) that focuses on urban and rural improvements throughout the Mouse River valley. The total estimated cost of the MREFPP is \$1.03 billion.
- Local sponsors are still working with both federal and state agencies to advance the MREFPP.

Northwest Area Water Supply

- Since 2008, the Northwest Area Water Supply (NAWS) project has been providing water service to several systems through the city of Minot and their ground water wells.
- NAWS is currently providing water service 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 alleviate some of the area's most severe water supply problems (See Map Appendix).

- The Water Commission continued to work with the Bureau of Reclamation on their Supplemental Environmental Impact Statement (SEIS) ordered by a federal court prerequisite to the lifting of an injunction. The public comment period on the SEIS ended in September 2014.
- In March 2013, a modification to an existing court injunction ceased further construction on the project.
- The final SEIS is expected in spring 2015.

Red River Valley Water Supply Project

- An EIS for the Red River Valley Water Supply Project (RRVWSP) was released back in 2007, but a Record of Decision (ROD) was never signed by the federal government.
- In 2013, it became apparent that a ROD would not be signed, so the State of North Dakota, in cooperation with the Lake Agassiz Water Authority and Garrison Diversion, began pursuit of a state and local project.
- In early 2014, the Water Commission issued a Request for Proposals for a Value Engineering (VE) study that focused on potential alternatives for a proposed state and local project.
- From the VE, three alignments were identified as being the most likely to meet criteria for future consideration. Those options were the

Washburn to Baldhill Creek, Bismarck to Lake Ashtabula, and Bismarck to Fargo and Grand Forks routes.

- Following completion of the VE, the state moved forward with an intake analysis effort to identify the potential availability of water from the Missouri River.

Sheyenne River Flood Control

- Following severe flood events in 2009 and 2011, Sheyenne River flood control efforts are being pursued by Valley City, Lisbon, and Fort Ransom.
- Valley City has initiated the process of moving forward with a multi-phased approach to developing permanent flood protection. Phase I is focused on the Valley City State University area, and the community expects to award bids in late 2014, with the majority of construction completed in 2015.
- Like Valley City, Lisbon is moving forward with a multi-phased approach to permanent flood protection. Phase I involves five separate levee locations, with one currently under construction. Other Phase I levee sections are in planning and design, with construction expected in 2015.

- Fort Ransom is in the early stages of developing permanent flood control. During 2009, 2010, and 2011, the city's existing (100-year) flood protection was not adequate. The city is now seeking protection from a 500-year event, though project specifics are still being developed.

Southwest Pipeline Project

- Southwest Pipeline is currently serving about 58,000 residents, including more than 5,350 rural service locations, 31 communities, and 23 raw water customers (See Map Appendix).
- Four contracts are under construction at the Oliver-Mercer-North Dunn Water Treatment plant. Those contracts include the installation of pumps inside the plant, membrane and ozone equipment procurement, and a 1.5 million gallon per day (MGD) upgrade.
- A supplemental raw water intake is under construction at Renner Bay, Lake Sakakawea. The secondary intake will increase capacity for the entire project.
- Main transmission lines are under construction to increase distribution capabilities and feed the North Dunn, Killdeer, and Fairfield service areas.



- Reservoir contracts are under construction at Zap (1.65 million gallons), Dunn Center (1 million gallons), Killdeer Mountain (250,000 gallons), and New Hradec (296,000 gallons).
- Rural service projects are underway to residents in the East and West Center Service areas – including over 500 miles of pipeline and almost 700 rural service locations. A Dunn Service Area project involves 288 miles of pipeline and 316 rural service locations.
- The supplemental water treatment plant in Dickinson is under construction. This project will provide additional capacity of 6 MGD and a sludge handling facility.
- A finished water pump station is under construction through a joint effort between the Southwest Pipeline and Dickinson. This project will provide pumping capacity for the project and city of Dickinson.
- As of October 2014, the Commission had approved about \$94 million in state funding assistance for several rural and regional water supply systems during the 2013-2015 biennium, including: Missouri West, Grand Forks-Trail, Northeast Regional, Walsh Rural, Cass Rural, Central Plains, Tri-County, Barnes Rural, Greater Ramsey, All Seasons, Southwest Pipeline, Northwest Area Water Supply, Western Area Water Supply, and Red River Valley Water Supply. Communities receiving Commission approval for funding assistance were Park River, Surrey, Mandan, Washburn, Grafton, Grand Forks, Dickinson, Watford City, Williston, and Fargo (See Map Appendix).
- Federal MR&I funding assistance was approved during the 2013-2015 biennium for projects in Stutsman Rural, McLean-Sheridan, North Central, and South Central.

Water Supply Programs

- Federal funding for water supply projects through the Municipal, Rural, and Industrial (MR&I) Water Supply Program has decreased dramatically in recent years. For that reason, the state has increased investments in community, rural, and regional water supply system advancements across the state.

Weather Modification

- The Atmospheric Resource Board (ARB) successfully operated weather modification programs in six counties in western North Dakota.
- The ARB Cooperative Observer Network had 546 active precipitation observers in 2014 – its thirty-eighth year of operation. All observers report growing season rainfall and



hail data, with 239 also reporting winter snow measurements. The snow data has helped fill gaps in existing snow data networks, assisting forecasters in predicting spring runoff and flooding risks.

Western Area Water Supply

- Western Area Water Supply (WAWS) project has involved a collaborative effort between the city of Williston, 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). As originally envisioned, WAWS has been making progress toward the development of this regional system to deliver Missouri River water from the Williston Regional Water Treatment Plant to areas throughout the northwest, oil producing areas of the state (See Map Appendix).
- The following water supply systems are currently being serviced by WAWS: Williston, Watford City, Ray, Tioga, Stanley, Wildrose, Crosby, Noonan, Columbus, and Fortuna, as well as McKenzie Rural Water, Burke-Divide-Williams Rural Water, and Williams Rural Water districts.

- In 2014, an expansion of the Williston Regional Water Treatment Plant was completed, bringing the plant from 10 MGD to 14 MGD. The next expansion is underway, upgrading the plant capacity to 21 MGD. That project is scheduled for completion in the spring of 2015.
- Additional contracts for primary transmission lines, pump stations, and reservoirs are also underway throughout the system. In addition, WAWS is rapidly expanding rural service connections. By the end of 2014, WAWS (through Williams and McKenzie Rural Water Systems) will be servicing about 3,300 rural locations, with plans for many more in the future.
- WAWS currently has the following water depots operating and generating revenue: McKenzie County's System II Keene, McKenzie County's Indian Hills, the city of Williston's 2nd Street and North Williston, 13 Mile Corner, Alexander, Watford City, R&T, and Stanley.
- Direct water pipeline connections have also been made available by WAWS to oil companies interested in supply lines to drilling locations.



COMPLETED PROJECTS, 2013-2015 BIENNIUM

The Completed Projects table lists the projects, programs, and studies that were completed through September 2014 of the 2013-2015 biennium (Table 7).

Table 7. Completed Projects, 2013-2015 Biennium

PROJECT SPONSOR	PROJECT NAME	PROJECT SPONSOR	PROJECT NAME
Argusville	Levee Recertification	Richland-Cass Joint WRD	Wild Rice River Watershed Retention Plan
Beulah	Beulah Dam Emergency Action Plan	Rush River WRD	Rush River Watershed Retention Plan
Bismarck State College	2014 ND Water Quality Monitoring Conference	Sargent County WRD	Drain #4 Reconstruction Project
Burleigh County WRD	Fox Island 2012 Flood Hazard Mitigation Evaluation Study	Sargent County WRD	Frenier Dam Improvement Project
Burleigh County WRD	Burleigh County Flood Control Alternatives Assessment	Southeast Cass WRD	Wild Rice, Bois de Sioux, & Antelope Creek Retention Study
Burlington	Interim Levee Project	Southeast Cass WRD	Recertification Of Horace To West Fargo Diversion Levee System
Garrison Diversion	Will & Carlson Consultant	Southeast Cass WRD	Recertification Of The West Fargo Diversion Levee System Geotechnical Analysis
James River Joint WRD	James River Engineering Feasibility Study Phase 1	Southeast Cass WRD	Recertification Of West Fargo Diversion Levee System
Maple River WRD	Maple River Watershed Floodwater Retention Study	Southeast Cass WRD	Wild Rice River Dam Study Phase II
McKenzie County Weed Control Board	Control of Noxious Weeds On Sovereign Lands	Southeast Cass WRD	Sheyenne River Diversion Low-Flow Channel - Areas 3 & 4
Minot	Minot 100-yr Floodplain Map & Profiles	Southeast Cass WRD	Sheyenne Diversion Phase VI - Weir Improvements
Minot Park District	Souris Valley Golf Course Bank Stabilization	Southeast Cass WRD	Horace Diversion Channel Site A (Section 7 - Phase V) Improvement
Natural Resource Conservation Service & U.S. Army Corps	LiDAR Data Collection	Southeast Cass WRD	Lower Sheyenne River Watershed Retention Plan
ND Game & Fish Department	Johnson Farms Water Storage	Southeast Cass WRD	Sheyenne River Snagging & Clearing Project - Reaches 1 & 3
ND Water Education Foundation	2014 Summer Water Tours	Traill County WRD	Elm River Diversion Project
ND Water Resources Institute	Institute Fellowship Program	Traill County WRD	Drain #27 (Moen) Lateral Channel Improvement Project
NDSU	ND Agricultural Weather Network	Traill County WRD	Goose River Snagging & Clearing Project
North Cass - Rush River Joint WRD	Drain #13 Channel Improvements	Traill County WRD	Buffalo Coulee Snagging & Clearing Project
Oxbow	Emergency Flood Fighting Barrier System	Traill County WRD	Drain #62 - Wold Drain Project
Pembina	U.S. Army Corps Of Engineers Section 408 Flood Control Review	Traill County WRD	Elm River Watershed Retention Plan
Pembina County WRD	Pembina County Snagging & Clearing Project	U.S. Geological Survey	Operation & Maintenance Of Rapid Deployment Gaging Stations
Pembina County WRD	Drain #8 Reconstruction Project	U.S. Geological Survey	Missouri River Gaging Station
Richland County WRD	Wild Rice River Snagging & Clearing - Reach 2	Ward County WRD	Souris River - Minot To Burlington Snagging & Clearing
Richland County WRD	Wild Rice River Snagging & Clearing - Reach 3	Ward County WRD	Countryside Villas & Whispering Meadows Drainage Improvement Project
Richland County WRD	Wild Rice River Snagging & Clearing - Reach 4		

CURRENTLY ACTIVE PROJECTS, 2013-2015 BIENNIUM

The projects and project categories listed in the Currently Active Projects (Table 8) represent water development efforts that are being pursued in the 2013-2015 biennium. Several individual projects are listed in the table. However, a number of others fall under project categories, such as irrigation development or general water management, and therefore, are not individually identified in the table.

This table also represents the total 2013-2015 Water Commission project budget as of September 2014, and the project funding the Commission had approved as of that time. As the table suggests, the Commission had approved 88 percent of the project budget by September 30, 2014.

Some of the projects listed in the Water Commission budget receive a combination of grants and loans.

Table 8. Currently Active Projects, 2013-2015 Biennium

PROJECTS	SWC BUDGET	APPROVED
CITY FLOOD CONTROL		
FARGO	\$136,740,340	\$136,740,340
GRAFTON	\$7,175,000	\$7,175,000
MOUSE RIVER	\$36,618,860	\$5,616,186
BURLEIGH COUNTY	\$1,282,400	\$1,282,400
VALLEY CITY	\$12,890,919	\$12,890,919
LISBON	\$3,325,650	\$3,325,650
FORT RANSOM	\$225,000	\$225,000
RICE LAKE RECREATION DISTRICT	\$2,842,200	\$2,842,200
RENWICK DAM	\$1,281,376	\$1,281,376
SHEYENNE RIVER	\$6,976,411	\$0
FLOODWAY PROPERTY ACQUISITIONS		
MINOT	\$33,684,329	\$33,684,329
WARD COUNTY	\$9,698,169	\$9,698,169
VALLEY CITY	\$1,822,598	\$1,822,598
BURLEIGH COUNTY	\$442,304	\$442,304
SAWYER	\$184,260	\$184,260
LISBON	\$888,750	\$888,750
WATER SUPPLY		
REGIONAL & LOCAL WATER SYSTEMS	\$103,578,652	\$103,578,652
FARGO WATER TREATMENT PLANT	\$27,864,069	\$27,864,069
SOUTHWEST PIPELINE PROJECT	\$101,694,178	\$101,694,177
NORTHWEST AREA WATER SUPPLY	\$21,241,433	\$7,241,433
COMMUNITY WATER LOAN FUND - BND	\$15,000,000	\$15,000,000
WESTERN AREA WATER SUPPLY	\$79,000,000	\$79,000,000
RED RIVER VALLEY WATER SUPPLY	\$11,000,000	\$3,295,000
IRRIGATION DEVELOPMENT		
IRRIGATION DEVELOPMENT	\$5,493,548	\$949,869
GENERAL WATER MANAGEMENT		
GENERAL WATER MANAGEMENT	\$50,193,326	\$32,096,659
DEVILS LAKE		
BASIN DEVELOPMENT	\$68,085	\$68,085
OUTLET	\$872,403	\$872,403
OUTLET OPERATIONS	\$15,140,805	\$15,140,805
TOLNA COULEE DIVIDE	\$102,975	\$102,975
EAST END OUTLET	\$2,774,011	\$2,774,011
GRAVITY OUTFLOW CHANNEL	\$13,686,839	\$13,686,839
STANDPIPE REPAIR	\$1,300,000	\$1,300,000
WEATHER MODIFICATION		
WEATHER MODIFICATION	\$805,202	\$805,202
TOTALS	\$705,894,092	\$623,569,660

State Water Development Program: Working With Project Sponsors

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

COST-SHARE POLICY & PROJECT PRIORITIZATION

The Water Commission's cost-share policy has evolved over the years to respond to the challenges presented by drought, floods, and lack of dependable water supplies. With the significant increase in state funding available for water development, Commission staff began drafting policy revisions during the summer of 2013, following direction from Commissioners and the 63rd Legislature.

The new policy was drafted to ensure more consistency and direction where needed, while still maintaining awareness of the unique aspects of water management and development across the state.

In addition, a draft Water Project Prioritization Guidance Concept was drafted to develop a more formal means of developing a schedule of priority projects as part of the agency's budgeting process. The idea of the concept is to separate project types within priority categories including: essential, high, moderate, and low priorities.

In order to gain input on both documents, the Water Commission hosted basin meetings across the state and reviewed comments from a broad spectrum of water interests.

Both the cost-share policy, and project prioritization process were approved in September 2014, and became effective October 1, 2014 (See Appendix). Project financial needs as described in sections hereafter were estimated in consideration of the new cost-share policy and prioritization concept.

HOUSE BILL 1206

To promote and encourage improved local project sponsor participation in the planning process, the 2013 Legislative Assembly passed House Bill 1206 (NDCC 61-02-01.3), requiring the Water Commission to schedule commissioner-hosted meetings within six major drainage basins. The meetings were to be held in the Red, James, Mouse, lower and upper Missouri River, and Devils Lake basins.

As a result, the 2015 water planning process began when water management and development stakeholders and project sponsors were invited and encouraged to attend a series of Water Commissioner-hosted meetings in November and December of 2013. A second round of meetings were later conducted toward the final stages of the planning process in September 2014 (See 2015 Water Planning Process, Page 3).

THE 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 2015-2017 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 sent project information forms to 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. 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 2015-2017 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 project information forms were received by the Commission, each project was reviewed by a team of staff members to determine if portions of the project were eligible for cost-share, and if the proposed timeframes for project advancement were reasonable and justified by supporting information. Sponsors were also required to provide information on project benefits per HB 1206. That information was also used in project analyses.

After project reviews were completed, the information was transferred into a water project database. 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 2013-2015 biennium. Of course, circumstances change, and so do project costs over time. Therefore, the database is updated regularly leading up to the Legislative Assembly.

In addition, Commission staff 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 second round of Commissioner-hosted meetings was 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, 2015-2017 BIENNIUM

The following Water Development Funding Needs table contains projects that could move forward and request State Water Commission cost-share in the 2015-2017 biennium (Table 9). 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.

With the approval of the Project Prioritization Guidance Concept, projects were also listed with their priority ranking, and were organized by major drainage basin within each project type.

The list is organized into four categories including: flood control, general water management, irrigation, and water supply. The total financial need to implement all of the projects in the 2015-2017 inventory is about \$1.5 billion. The state's share of that total could be about \$954 million in grants and loans. 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 2015-2017 totals do not account for projects that may receive additional funding in the current 2013-2015 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.



Table 9. Water Development Needs, 2015-2017 Biennium

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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
State of North Dakota	Devils Lake Outlet Operations	Essential	Devils Lake	\$0	\$11,000,000	\$0	\$0	\$11,000,000
Williston	West Williston Flood Control	High	Missouri	\$0	\$7,269,000	TBD	\$4,846,000	\$12,115,000
Souris River JWRD, Minot	Mouse River Flood Control	High	Mouse	\$0	\$110,000,000	TBD	\$73,333,333	\$183,333,333
F-M Diversion Authority	F-M Diversion	High	Red	\$80,000,000	\$68,750,000	\$0	\$250,000,000	\$398,750,000
Fort Ransom	Permanent Flood Protection	Moderate	Red	\$0	\$4,320,000	\$1,080,000	\$0	\$5,400,000
Grafton	Permanent Flood Protection	High	Red	\$0	\$25,200,000	TBD	\$16,800,000	\$42,000,000
Lisbon	Permanent Flood Protection	Moderate	Red	\$0	\$16,000,000	\$4,000,000	\$0	\$20,000,000
Valley City	Permanent Flood Protection	Moderate	Red	\$0	\$24,000,000	\$6,000,000	\$0	\$30,000,000
FLOOD CONTROL TOTAL				\$80,000,000	\$266,539,000	\$11,080,000	\$344,979,333	\$702,598,333

TBD = To Be Determined

IRRIGATION								
*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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
Dickey-Sargent ID	Oakes Test Area Irrigation	Moderate	James	\$0	\$2,500,000	\$0	\$2,500,000	\$5,000,000
Garrison Diversion Conservancy District	McClusky Canal Irrigation	Moderate	Missouri	\$0	\$1,250,000	\$0	\$1,250,000	\$2,500,000
Nesson Valley ID	Nesson Valley Irrigation	Moderate	Missouri	\$0	\$5,500,000	\$0	\$5,500,000	\$11,000,000
IRRIGATION TOTAL				\$0	\$9,250,000	\$0	\$9,250,000	\$18,500,000

Table 9. Water Development Needs, 2015-2017 Biennium

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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
Bisbee, Towner WRD, Towner County	Big Coulee Dam Repair	Moderate	Devils Lake	\$0	\$4,500,000	TBD	\$1,500,000	\$6,000,000
State of North Dakota	Devils Lake Outlet Mitigation	Essential	Devils Lake	\$0	\$5,000,000	\$0	\$0	\$5,000,000
Burleigh WRD	Apple Creek Industrial Park Levee	High	Missouri	\$0	\$900,000	TBD	\$600,000	\$1,500,000
Burleigh WRD	Fox Island Flood Control	High	Missouri	\$0	\$1,320,000	TBD	\$880,000	\$2,200,000
Burleigh WRD	Missouri River Correctional Center Flood Control	High	Missouri	\$0	\$574,200	TBD	\$382,800	\$957,000
Burleigh WRD	Sibley Island Flood Control	High	Missouri	\$0	\$0	TBD	\$0	\$0
Burleigh WRD	Missouri River Snag & Clear	Moderate	Missouri	\$0	\$625,000	\$0	\$625,000	\$1,250,000
Burleigh WRD	McDowell Dam Supplemental Water Supply	Low	Missouri	\$0	\$276,000	\$0	\$414,000	\$690,000
Mandan	High Service Pump Optimization Phase II	Low	Missouri	\$0	\$70,350	\$0	\$130,650	\$201,000
Mandan	Pretreatment Expansion Design	Low	Missouri	\$0	\$477,750	\$0	\$887,250	\$1,365,000
Mandan	Flood Risk Reduction Study	Low	Missouri	\$0	\$140,000	\$0	\$260,000	\$400,000
McLean WRD	Painted Woods Creek Rural Flood Control	Low	Missouri	\$200,000	\$585,000	\$0	\$715,000	\$1,500,000
McLean WRD	Fort Mandan/4H Camp Rural Flood Control	Low	Missouri	\$0	\$990,000	\$0	\$1,210,000	\$2,200,000
Parshall	East-Side Flood Control	High	Missouri	\$0	\$150,000	TBD	\$100,000	\$250,000
Williams WRD	Epping Dam Repair	Moderate	Missouri	\$0	\$266,250	TBD	\$88,750	\$355,000
Williston	Airport Drainage Ditch Floodplain Study	Low	Missouri	\$0	\$17,500	\$0	\$32,500	\$50,000
Williston	Camp Creek Floodplain Study	Low	Missouri	\$0	\$21,000	\$0	\$39,000	\$60,000
Williston	Stony Creek Floodplain Study	Low	Missouri	\$0	\$21,000	\$0	\$39,000	\$60,000

TBD = To Be Determined

Table 9. Water Development Needs, 2015-2017 Biennium

GENERAL WATER MANAGEMENT (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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
McHenry WRD	Mouse River Bank Stabilization	Moderate	Mouse	\$0	\$125,000	\$0	\$125,000	\$250,000
North Prairie RWD	Study of Coop Project with Garrison & Garrison RWD	Low	Mouse	\$0	\$52,500	\$0	\$97,500	\$150,000
Ward WRD	Makoti Lake Flood Control	Low	Mouse	\$0	\$900,000	\$0	\$1,100,000	\$2,000,000
Barnes & Griggs JWRD	Silver Creek Watershed Detention Study	Low	Red	\$300,000	\$105,000	\$0	\$195,000	\$600,000
Barnes WRD	Kathryn Dam Repair & Modification	High	Red	\$100,000	\$750,000	TBD	\$250,000	\$1,100,000
Barnes WRD	Eckelson/Fox Lake Watershed Detention	Moderate	Red	\$0	\$1,200,000	\$0	\$800,000	\$2,000,000
Barnes WRD	10 Mile Lake Outlet	Low	Red	\$0	\$900,000	\$0	\$1,100,000	\$2,000,000
Cass JWRD	Buffalo Creek Watershed Detention Study	Low	Red	\$900,000	\$315,000	\$0	\$585,000	\$1,800,000
Cass JWRD	Rush River Watershed Detention Study	Low	Red	\$900,000	\$315,000	\$0	\$585,000	\$1,800,000
Cass JWRD	Swan Creek Watershed Detention Study	Low	Red	\$900,000	\$315,000	\$0	\$585,000	\$1,800,000
Cass JWRD	Upper Maple Watershed Detention Study	Low	Red	\$900,000	\$315,000	\$0	\$585,000	\$1,800,000
Cavalier	Tongue River Bank Stabilization	Moderate	Red	\$431,291	\$71,882	\$0	\$71,882	\$575,055
Cavalier	Tongue River Snag & Clear	Moderate	Red	\$0	\$12,500	\$0	\$12,500	\$25,000
Crystal	Flood Risk Reduction Study	Low	Red	\$0	\$175,000	\$0	\$325,000	\$500,000
Dickey WRD	Drain #1 Channel Improvement	Low	Red	\$0	\$337,500	\$0	\$412,500	\$750,000
Dickey-Sargent JWRD	Jackson Township Improvement District #1	Low	Red	\$0	\$450,000	\$0	\$550,000	\$1,000,000
Grafton	Park River Snag & Clear	Moderate	Red	\$35,000	\$22,500	\$0	\$22,500	\$80,000
Maple River WRD	Cass Drain #37 Channel Improvement	Low	Red	\$0	\$225,000	\$0	\$275,000	\$500,000

TBD = To Be Determined

Table 9. Water Development Needs, 2015-2017 Biennium

GENERAL WATER MANAGEMENT (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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
Maple River WRD	Maple River District #2 Channel Improvement	Low	Red	\$0	\$675,000	\$0	\$825,000	\$1,500,000
Maple River WRD	Upper Swan Creek Channel Improvement	Low	Red	\$0	\$900,000	\$0	\$1,100,000	\$2,000,000
McVille	McVille Dam Repair	Moderate	Red	\$0	\$611,250	TBD	\$203,750	\$815,000
North Cass WRD	Drain #24 Channel Improvement	Low	Red	\$0	\$90,000	\$0	\$110,000	\$200,000
North Cass WRD	Drain #55 Channel Improvement	Low	Red	\$0	\$90,000	\$0	\$110,000	\$200,000
Park River JWRD	North Branch Park River Detention Study	Low	Red	\$0	\$350,000	\$0	\$650,000	\$1,000,000
Pembina WRD	Senator Young Dam Repair	High	Red	\$4,000,000	\$2,250,000	TBD	\$750,000	\$7,000,000
Pembina WRD	Tongue River Snag & Clear	Moderate	Red	\$0	\$200,000	\$0	\$200,000	\$400,000
Red River JWRD	Lower Red Detention Site Modeling	Low	Red	\$0	\$50,750	\$0	\$94,250	\$145,000
Richland WRD	Sheyenne River Snag and Clear	Moderate	Red	\$0	\$100,000	\$0	\$100,000	\$200,000
Richland WRD	Wild Rice River Snag & Clear	Moderate	Red	\$0	\$200,000	\$0	\$200,000	\$400,000
Richland WRD	Drain #2 Reconstruction	Low	Red	\$0	\$450,000	\$0	\$550,000	\$1,000,000
Richland WRD	Drain #14 Reconstruction	Low	Red	\$0	\$225,000	\$0	\$275,000	\$500,000
Richland WRD	Drain #18 Reconstruction	Low	Red	\$0	\$337,500	\$0	\$412,500	\$750,000
Richland WRD	Drain #15 (27) Reconstruction	Low	Red	\$0	\$450,000	\$0	\$550,000	\$1,000,000
Rush River WRD	Drain #52 Channel Improvement	Low	Red	\$0	\$675,000	\$0	\$825,000	\$1,500,000
Rush River WRD	Amenia Township Drain #75	Low	Red	\$0	\$225,000	\$0	\$275,000	\$500,000
Sargent WRD	Nelson Dam & Brummond-Lubke Dam Repair	Moderate	Red	\$0	\$75,000	TBD	\$25,000	\$100,000
Sargent WRD	Drain #7 Channel Improvement	Low	Red	\$0	\$67,500	\$0	\$82,500	\$150,000
Sargent WRD	Drain #8 Channel Improvement	Low	Red	\$0	\$202,500	\$0	\$247,500	\$450,000
Sargent WRD	Drain #11 Channel Improvement	Low	Red	\$0	\$1,125,000	\$0	\$1,375,000	\$2,500,000

TBD = To Be Determined

Table 9. Water Development Needs, 2015-2017 Biennium

GENERAL WATER MANAGEMENT (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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
Sargent WRD	Drain #12 Channel Improvement	Low	Red	\$0	\$225,000	\$0	\$275,000	\$500,000
Southeast Cass WRD	Sheyenne-Maple Flood Control Project #2 Improvements	High	Red	\$0	\$600,000	TBD	\$400,000	\$1,000,000
Southeast Cass WRD	Sheyenne & Wild Rice Rivers Snag & Clear	Moderate	Red	\$0	\$500,000	\$0	\$500,000	\$1,000,000
Southeast Cass WRD	Drain #53 Channel Improvement	Low	Red	\$0	\$675,000	\$0	\$825,000	\$1,500,000
Steele WRD	Drain #1 Channel Improvement	Low	Red	\$0	\$337,500	\$0	\$412,500	\$750,000
Steele WRD	Drain #6 Channel Improvement	Low	Red	\$0	\$337,500	\$0	\$412,500	\$750,000
Steele WRD	Drain #8 Channel Improvement	Low	Red	\$0	\$337,500	\$0	\$412,500	\$750,000
Steele WRD	Drain #12 Channel Improvement	Low	Red	\$0	\$337,500	\$0	\$412,500	\$750,000
Steele WRD	Golden Lakes Improvement	Low	Red	\$0	\$180,000	\$0	\$270,000	\$450,000
Steele WRD	Sharon Drain #20 Improvement	Low	Red	\$0	\$540,000	\$0	\$660,000	\$1,200,000
Steele WRD	Goose River Watershed Detention Study	Low	Red	\$300,000	\$105,000	\$0	\$195,000	\$600,000
Traill WRD	Elm River, Goose River, Buffalo Coulee Snag & Clear	Moderate	Red	\$0	\$200,000	\$0	\$200,000	\$400,000
Traill WRD	Buxton Channel Improvement	Low	Red	\$0	\$213,750	\$0	\$261,250	\$475,000
Traill WRD	Drain #23-40 Channel Improvement	Low	Red	\$0	\$708,750	\$0	\$866,250	\$1,575,000
Traill WRD	Drain #64 Construction	Low	Red	\$0	\$195,750	\$0	\$239,250	\$435,000
Traill WRD	Morgan Drain #36 Channel Improvement	Low	Red	\$0	\$900,000	\$0	\$1,100,000	\$2,000,000
Traill WRD	Preston Floodway Improvement	Low	Red	\$0	\$562,500	\$0	\$687,500	\$1,250,000
Traill WRD	Roseville Drain #19 Channel Improvement	Low	Red	\$0	\$877,500	\$0	\$1,072,500	\$1,950,000
Traill WRD	Stavanger-Belmont Drain #52 Channel Improvement	Low	Red	\$0	\$2,475,000	\$0	\$3,025,000	\$5,500,000

TBD = To Be Determined

Table 9. Water Development Needs, 2015-2017 Biennium

GENERAL WATER MANAGEMENT (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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
Traill WRD	Elm River Watershed Detention Study	Low	Red	\$300,000	\$105,000	\$0	\$195,000	\$600,000
Traill WRD	Goose River Watershed Detention Study	Low	Red	\$600,000	\$210,000	\$0	\$390,000	\$1,200,000
Tri-County JWRD	Tri-County Drain Reconstruction	Low	Red	\$0	\$1,035,000	\$0	\$1,265,000	\$2,300,000
Walsh WRD	Matecjek Dam Rehabilitation	High	Red	\$16,900,000	\$6,825,000	TBD	\$2,275,000	\$26,000,000
Walsh WRD	Forest River Flood Control	High	Red	\$0	\$4,200,000	TBD	\$2,800,000	\$7,000,000
Walsh WRD	Park River Snag & Clear	Moderate	Red	\$0	\$200,000	\$0	\$200,000	\$400,000
Walsh WRD	Walsh Drain #87 (McCloud Drain)	Low	Red	\$0	\$3,380,850	\$0	\$4,132,150	\$7,513,000
Walsh WRD	Walsh Drain #90	Low	Red	\$0	\$3,150,000	\$0	\$3,850,000	\$7,000,000
Walsh WRD	Forest River Watershed Detention Study	Low	Red	\$0	\$140,000	\$0	\$260,000	\$400,000
Walsh WRD	Oslo, MN Agricultural Levee	Low	Red	\$0	\$65,625	\$0	\$121,875	\$187,500
West Fargo	Water Supply Study	Low	Red	\$0	\$70,000	\$0	\$130,000	\$200,000
GENERAL WATER MANAGEMENT TOTAL				\$26,766,291	\$61,560,157	\$0	\$52,387,107	\$140,713,555

TBD = To Be Determined



Table 9. Water Development Needs, 2015-2017 Biennium

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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
Rolla	Service to Rolla From Turtle Mountain Band of Chippewa Public Utilities	Moderate	Devils Lake	\$401,637	\$240,982	\$80,328	\$80,328	\$803,275
Stutsman RWD	Phase V Expansion	Low	James	\$0	\$0	\$3,160,800	\$790,200	\$3,951,000
Dickinson	North Side Tank	High	Missouri	\$0	\$1,800,000	\$600,000	\$600,000	\$3,000,000
Dickinson	South Side Tank	High	Missouri	\$0	\$2,700,000	\$900,000	\$900,000	\$4,500,000
Dickinson	State Avenue Watermain	High	Missouri	\$0	\$900,000	\$300,000	\$300,000	\$1,500,000
Dickinson	Watermains To North Dickinson Annexation Area	High	Missouri	\$0	\$900,000	\$300,000	\$300,000	\$1,500,000
Ellendale	Elevated Water Storage	Low	Missouri	\$0	\$0	\$1,200,000	\$300,000	\$1,500,000
Garrison	Garrison Water Treatment Plant & Supply	Moderate	Missouri	\$0	\$5,400,000	\$1,800,000	\$1,800,000	\$9,000,000
Killdeer	HWBL Industrial Subdivision Water Supply	High	Missouri	\$0	\$294,000	\$98,000	\$98,000	\$490,000
Killdeer	South Water Storage Reservoir	High	Missouri	\$0	\$270,000	\$90,000	\$90,000	\$450,000
Killdeer	Southwest Utility Extension	High	Missouri	\$0	\$216,720	\$72,240	\$72,240	\$361,200
Mandan	Conventional Raw Water Intake	Low	Missouri	\$0	\$0	\$13,252,000	\$3,313,000	\$16,565,000
Mandan	High Service Pump Optimization Phase I	Low	Missouri	\$0	\$0	\$1,510,400	\$377,600	\$1,888,000
Mandan	I&C Upgrades	Low	Missouri	\$0	\$0	\$222,400	\$55,600	\$278,000
Mandan	20-inch Pressure Reducing Valve at Boundary Road	Low	Missouri	\$0	\$0	\$90,720	\$22,680	\$113,400
Mandan	South End Pump Station Generator	Low	Missouri	\$0	\$0	\$160,000	\$40,000	\$200,000
Mandan	South End Pump Station Improvement	Low	Missouri	\$0	\$0	\$202,055	\$50,514	\$252,569
Mandan	Sunset Booster Station Pumps	Low	Missouri	\$0	\$0	\$353,704	\$88,426	\$442,130
Mandan	Ultraviolet Light Disinfection	Low	Missouri	\$0	\$0	\$1,129,600	\$282,400	\$1,412,000
Mandan	Zone 2100 Elevated Water Storage	Low	Missouri	\$0	\$0	\$1,081,000	\$270,250	\$1,351,250

Table 9. Water Development Needs, 2015-2017 Biennium

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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
New England	Water System Improvements	Low	Missouri	\$0	\$0	\$2,240,000	\$560,000	\$2,800,000
Southwest Water Authority	Southwest Pipeline Project	High	Missouri	\$0	\$100,000,000	\$0	\$0	\$100,000,000
Tioga	System Expansion	High	Missouri	\$0	\$2,310,000	\$770,000	\$770,000	\$3,850,000
Tioga	System Expansion	High	Missouri	\$0	\$480,000	\$160,000	\$160,000	\$800,000
Watford City	11th Ave. S Watermain	High	Missouri	\$0	\$744,357	\$248,119	\$248,119	\$1,240,595
Watford City	12th St. E Watermain (HWY 23 to 17th Ave N)	High	Missouri	\$0	\$428,168	\$142,723	\$142,723	\$713,614
Watford City	12th St. E Watermain (24th Ave SE to 11th Ave SE)	High	Missouri	\$0	\$371,854	\$123,951	\$123,951	\$619,756
Watford City	14th St. W Watermain (US HWY 85 to 4th Ave N)	High	Missouri	\$0	\$194,688	\$64,896	\$64,896	\$324,480
Watford City	14th St. W Watermain (4th Ave N to 10th Ave N)	High	Missouri	\$0	\$168,730	\$56,243	\$56,243	\$281,216
Watford City	14th St. W Watermain (US HWY 85 to 17th Ave S)	High	Missouri	\$0	\$182,358	\$60,786	\$60,786	\$303,930
Watford City	14th St. W Watermain (10th Ave N to 17th Ave N)	High	Missouri	\$0	\$226,016	\$75,339	\$75,339	\$376,694
Watford City	17th Ave. N Watermain (12th St to HWY 1806)	High	Missouri	\$0	\$759,472	\$253,157	\$253,157	\$1,265,786
Watford City	17th Ave. NE Watermain - Pheasant Ridge	High	Missouri	\$0	\$305,011	\$101,670	\$101,670	\$508,351
Watford City	17th Ave. NW Watermain	High	Missouri	\$0	\$430,800	\$143,600	\$143,600	\$718,000
Watford City	24th Ave. SE Watermain	High	Missouri	\$0	\$700,338	\$233,446	\$233,446	\$1,167,230
Watford City	HWY 23 Bypass Loop	High	Missouri	\$0	\$231,000	\$77,000	\$77,000	\$385,000
Watford City	HWY 85 (24th Ave S to 37th Ave S)	High	Missouri	\$0	\$371,854	\$123,951	\$123,951	\$619,756
Watford City	Southeast Water Tower	High	Missouri	\$0	\$2,309,571	\$769,857	\$769,857	\$3,849,285
Watford City	Southwest Water Tower	High	Missouri	\$0	\$1,492,570	\$497,523	\$497,523	\$2,487,616

Table 9. Water Development Needs, 2015-2017 Biennium

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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
Western Area Water Supply	Phase IV	High	Missouri	\$0	\$82,000,000	\$38,000,000	\$0	\$120,000,000
Williston	11th St Watermain	High	Missouri	\$0	\$1,137,120	\$379,040	\$379,040	\$1,895,200
Williston	16th Ave Watremain	High	Missouri	\$0	\$687,264	\$229,088	\$229,088	\$1,145,440
Williston	26th St Watermain	High	Missouri	\$0	\$840,000	\$280,000	\$280,000	\$1,400,000
Williston	Airport Watermain & Pump Station	High	Missouri	\$0	\$4,350,000	\$1,450,000	\$1,450,000	\$7,250,000
Williston	Hi-Land Heights Water Supply	High	Missouri	\$0	\$3,052,320	\$1,017,440	\$1,017,440	\$5,087,200
Williston	Hgh School Area Watermain	High	Missouri	\$0	\$1,203,840	\$401,280	\$401,280	\$2,006,400
Williston	Wegley Green Acres Water Supply	High	Missouri	\$0	\$849,000	\$283,000	\$283,000	\$1,415,000
Williston	West Reservoirs	High	Missouri	\$0	\$2,640,000	\$880,000	\$880,000	\$4,400,000
Williston	Williston Park Water Supply	High	Missouri	\$0	\$630,000	\$210,000	\$210,000	\$1,050,000
All Seasons WUD	System 1 Expansion - Bottineau County & Lake Metigoshe	High	Mouse	\$0	\$13,045,500	\$869,700	\$3,478,800	\$17,394,000
All Seasons WUD	System III Improvements	Low	Mouse	\$0	\$0	\$636,800	\$159,200	\$796,000
Glenburn	Distribution System Improvement	High	Mouse	\$0	\$570,000	\$190,000	\$190,000	\$950,000
Glenburn	Water Tower & Primary Transmission Line Improvement	High	Mouse	\$0	\$840,000	\$280,000	\$280,000	\$1,400,000
Minot	NE Transmission from County 12 to 46th Ave.	High	Mouse	\$0	\$2,400,000	\$800,000	\$800,000	\$4,000,000
Minot	NE Water Tower	High	Mouse	\$0	\$1,687,754	\$562,585	\$562,585	\$2,812,924
Minot	NE Transmission from 30th Av. to 46th St.	High	Mouse	\$0	\$1,551,750	\$517,250	\$517,250	\$2,586,250
Minot	NW Water Transmission from County 10 to 30th St.	High	Mouse	\$0	\$960,000	\$320,000	\$320,000	\$1,600,000
Minot	SE Transmission from 42nd St. to 46th St.	High	Mouse	\$0	\$450,000	\$150,000	\$150,000	\$750,000
Minot	SW Water Tank	High	Mouse	\$0	\$1,687,754	\$562,585	\$562,585	\$2,812,924
Minot	Northwest Area Water Supply	High	Mouse	\$0	\$18,400,000	\$0	\$9,907,700	\$28,307,700

Table 9. Water Development Needs, 2015-2017 Biennium

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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
Minot	NE Transmission from 55th St. to 46th Ave.	High	Mouse	\$0	\$1,320,000	\$440,000	\$440,000	\$2,200,000
Sherwood	Water Quality Improvements	Low	Mouse	\$0	\$0	\$366,400	\$91,600	\$458,000
Sherwood	Water Supply Improvements	Low	Mouse	\$0	\$0	\$356,000	\$89,000	\$445,000
Lake Agassiz Water Authority	Red River Valley Water Supply	High	Multi-Basin	\$0	\$150,000,000	TBD	TBD	\$150,000,000
Fargo	Water System Regionalization	Moderate	Red	\$0	\$7,200,000	\$2,400,000	\$2,400,000	\$12,000,000
Grand Forks	Regional Water Treatment Plant	Moderate	Red	\$0	\$30,000,000	\$41,000,000	\$6,400,000	\$77,400,000
Kindred	Water Storage Improvement & System Expansion	Low	Red	\$0	\$0	\$880,000	\$220,000	\$1,100,000
Langdon	Water Treatment Plant Improvements	Low	Red	\$0	\$0	\$6,800,000	\$1,700,000	\$8,500,000
Northeast RWD	New Water Supply & Rural Users	Low	Red	\$0	\$0	\$11,600,000	\$2,900,000	\$14,500,000
Southeast WUD	System Wide Expansion	Moderate	Red	\$0	\$3,888,000	\$1,296,000	\$1,296,000	\$6,480,000
West Fargo	Replace Production Well #8	High	Red	\$0	\$600,000	\$200,000	\$200,000	\$1,000,000
West Fargo	South Side Water Tower & Transmission Line	High	Red	\$0	\$1,650,000	\$550,000	\$550,000	\$2,750,000
West Fargo	South Side Water Distribution System	High	Red	\$0	\$600,000	\$200,000	\$200,000	\$1,000,000
WATER SUPPLY TOTAL				\$401,637	\$458,668,791	\$146,852,676	\$52,838,067	\$658,761,171

TBD = To Be Determined

Table 10. Summary Of Water Development Needs, 2015-2017 Biennium

SUMMARY OF WATER DEVELOPMENT NEEDS				
Project Type	Federal Cost	State Cost (Grant & Loan)	Local Cost	Total Cost
Flood Control	\$80,000,000	\$277,619,000	\$344,979,333	\$702,598,333
General Water Management	\$26,766,291	\$61,560,157	\$52,387,107	\$140,713,555
Irrigation	\$0	\$9,250,000	\$9,250,000	\$18,500,000
Water Supply	\$401,637	\$605,521,467	\$52,838,067	\$658,761,171
Total	\$107,167,928	\$953,950,624	\$459,454,507	\$1,520,573,059

Table 11. Category 4 Water Supply Project Needs

CATEGORY 4 WATER SUPPLY PROJECT NEEDS

The following projects are State Water Commission Policy “Category 4” water supply projects that did not make the top quartile for affordability. Per policy, eligible projects are those that “Assist[s] with improvements in service areas where the anticipated cost per user each year (based on 5,000 gallons per month) divided by the average annual median income per user is in the top quartile or other ranking as determined by the Commission of its peer group (large city, small city, and regional) water systems that submitted planning information forms for the biennium.” The Water Commission does have the ability to adjust eligibility criteria, so it is possible that the following projects may be considered for funding assistance later in the 2015-2017 biennium.

***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 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
Carrington	Elevated Water Storage & Pumping	Low	James	\$0	\$0	\$1,528,800	\$382,200	\$1,911,000
Beulah	Water Supply & Treatment Improvements	Low	Missouri	\$0	\$0	\$4,640,000	\$1,160,000	\$5,800,000
Garrison RWD	East Booster Station & Storage	Low	Missouri	\$0	\$0	\$159,600	\$39,900	\$199,500
Garrison RWD	Northwest System Expansion	Low	Missouri	\$0	\$0	\$876,560	\$219,140	\$1,095,700
Garrison RWD	Pump Station Improvements	Low	Missouri	\$0	\$0	\$142,560	\$35,640	\$178,200
Garrison RWD	Storage Facility & Booster Station	Low	Missouri	\$0	\$0	\$728,000	\$182,000	\$910,000
Makoti	New Well & Transmission	Low	Missouri	\$0	\$0	\$800,000	\$200,000	\$1,000,000
Makoti	Water Storage System Improvement	Low	Missouri	\$0	\$0	\$960,000	\$240,000	\$1,200,000
Missouri West WS	I-94 Business Loop Improvements	Low	Missouri	\$0	\$0	\$324,000	\$81,000	\$405,000
Burlington	South Water Tower	Low	Mouse	\$0	\$0	\$1,400,000	\$350,000	\$1,750,000
Mohall	Water Tower Improvements	Low	Mouse	\$0	\$0	\$960,000	\$240,000	\$1,200,000
North Prairie RWD	South Minot Distribution Line Improvements	Low	Mouse	\$0	\$0	\$3,040,000	\$760,000	\$3,800,000
North Prairie RWD	South Minot Elevated Water Tower	Low	Mouse	\$0	\$0	\$1,120,000	\$280,000	\$1,400,000
Rugby	Water Treatment Plant Improvements	Low	Mouse	\$0	\$0	\$1,740,800	\$435,200	\$2,176,000
Westhope	Water Supply Improvements	Low	Mouse	\$0	\$0	\$340,000	\$85,000	\$425,000
Casselton	Water Storage & Feed Line Improvements	Low	Red	\$0	\$0	\$1,600,000	\$400,000	\$2,000,000
Cavalier	Water Tower	Low	Red	\$0	\$0	\$880,000	\$220,000	\$1,100,000
Dakota RWD	System Improvements	Low	Red	\$0	\$0	\$1,599,144	\$399,786	\$1,998,930

Table 11. Category 4 Water Supply Project Needs

CATEGORY 4 WATER SUPPLY PROJECT NEEDS

The following projects are State Water Commission Policy “Category 4” water supply projects that did not make the top quartile for affordability. Per policy, eligible projects are those that “Assist[s] with improvements in service areas where the anticipated cost per user each year (based on 5,000 gallons per month) divided by the average annual median income per user is in the top quartile or other ranking as determined by the Commission of its peer group (large city, small city, and regional) water systems that submitted planning information forms for the biennium.” The Water Commission does have the ability to adjust eligibility criteria, so it is possible that the following projects may be considered for funding assistance later in the 2015-2017 biennium.

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Local Sponsor	Project Name	Priority	Basin	Federal 2015-2017	Potential SWC Grant 2015-2017	Potential SWC Loan 2015-2017	Local 2015-2017	Total 2015-2017
Drayton	Clearwell Replacement	Low	Red	\$0	\$0	\$1,280,000	\$320,000	\$1,600,000
Enderlin	Treatment & Storage Expansion	Low	Red	\$0	\$0	\$10,560,000	\$2,640,000	\$13,200,000
Grafton	Surface Water Intake Improvement	Low	Red	\$0	\$0	\$80,000	\$20,000	\$100,000
Grand Forks	North Water Tower Looping	Low	Red	\$0	\$0	\$172,000	\$43,000	\$215,000
Wahpeton	New Ground Water Supply	Low	Red	\$0	\$0	\$480,000	\$120,000	\$600,000
Wahpeton	Treatment Plant Capacity & Process Improvements	Low	Red	\$0	\$0	\$4,400,000	\$1,100,000	\$5,500,000
Walsh RWD	System Improvement	Low	Red	\$0	\$0	\$1,509,569	\$377,392	\$1,886,961
CATEGORY 4 WATER SUPPLY PROJECTS TOTAL				\$0	\$0	\$41,321,033	\$10,330,258	\$51,651,291

TRIBAL PROJECT FUNDING

During the project inventory process, several tribal water supply projects were submitted to the Commission. However, only those tribal projects with eligible local sponsors were included in the inventory.



Water Project Funding

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

GENERAL FUND

The proposed State Water Commission budget does not include any revenue from the state's General Fund. During 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 2015 North Dakota Water Plan satisfies that requirement for requesting funding from the RTF for the 2015-2017 biennium.

The RTF is funded with 20 percent of the revenues from the oil extraction tax. A percentage of the RTF has been designated by the Legislature to be used for water-related projects and energy conservation. The 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 2013-2015 biennium are expected to total \$759.5 million. When combined with the fund's 2013 beginning balance of \$293 million, less the estimated expenditures of \$371 million, the balance in the RTF at the beginning of the 2015-2017 biennium could be \$681.5 million. Of that amount, \$279 million has not been committed to projects.

Because revenues from the oil extraction tax are highly dependent on world oil prices and production, it is very difficult to predict future funding levels. With that in mind, the September 2014 forecast includes \$### for the 2015-2017 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 \$16.1 million (Figure 17).

WATER DEVELOPMENT TRUST FUND

Senate Bill 2188 (1999) set up the Water Development Trust Fund as a primary means of repaying the bonds it authorized. House Bill 1475 allocated 45 percent of the funds received by the state from the 1998 tobacco settlement into the Water Development Trust Fund.

Revenues into the Water Development Trust Fund for the 2013-2015 biennium are expected to total about \$19.2 million. The Office of Management and Budget estimates revenues of \$18 million for the 2015-2017 biennium (Figure 18).

Payments into the fund are scheduled through 2025 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

Resources Trust Fund Revenues, 1997-2017

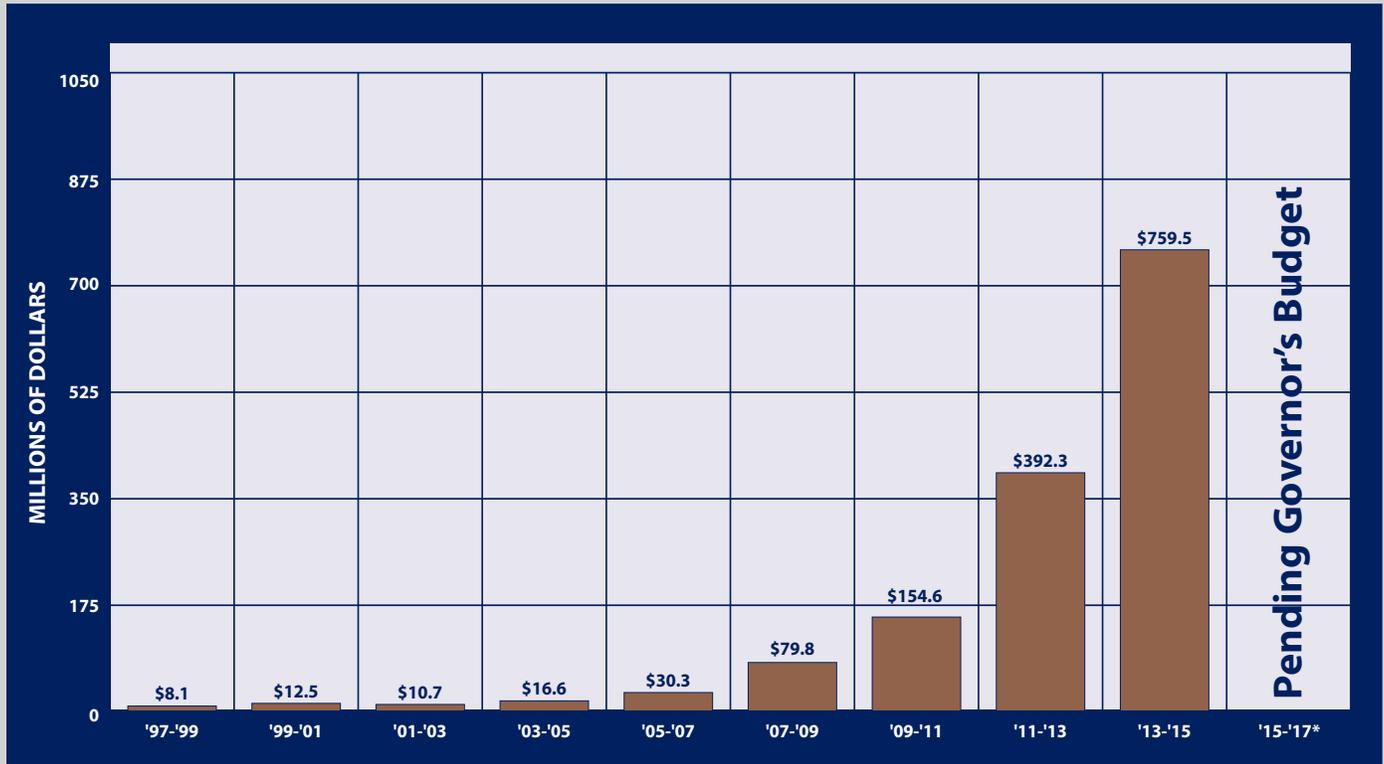


Figure 17. Resources Trust Fund revenues, 1997-2017. * Projected

Water Development Trust Fund Revenues, 1999-2017

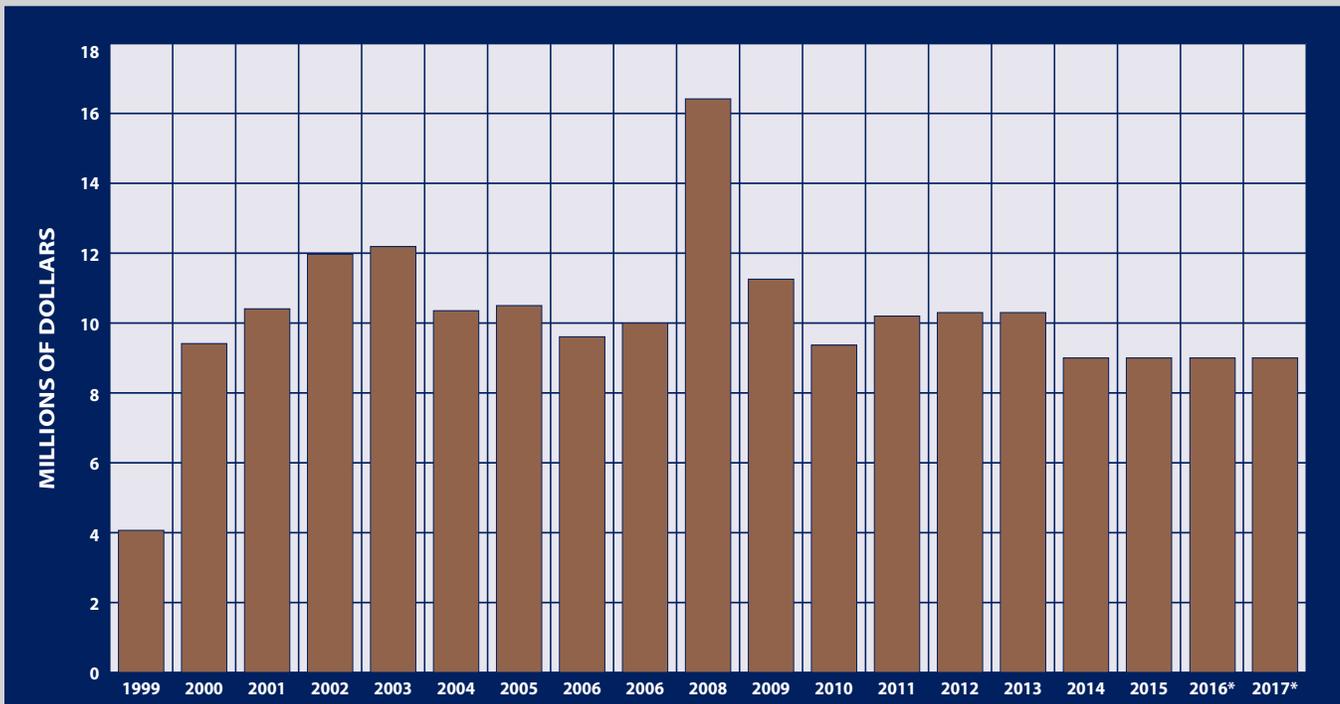


Figure 18. Water Development Trust Fund revenues, 1999-2017. * Projected

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. Because of very strong Resources Trust Fund revenues the state anticipates that by the end of this biennium it will retire all outstanding Southwest Pipeline Project bonds. There are no outstanding bonds for the Northwest Area Water Supply project.

In 1999, the Water Commission was authorized to issue up to \$84.8 million in appropriation bonds under provisions of Senate Bill 2188. The Legislature's intent was to partially fund flood control projects at Grand Forks, Devils Lake, Wahpeton, and Grafton, and to continue funding for the Southwest Pipeline. In March 2000, the Water Commission issued bonds generating \$27.5 million, thus reducing available bonding authority to \$57.3 million. Recognizing the need for water development projects in addition to those identified in SB 2188, the 2003 Legislature allowed authority for the unissued \$57.3 million to expire, but then authorized \$60 million of bonding authority for statewide water development projects. In June 2005, the Water Commission did issue bonds generating \$60 million.

By the end of the 2013-2015 biennium, it is anticipated that all of the Water Commission's outstanding water project bonds will be retired.

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 will come from ten percent of oil extraction revenue deposited in the RTF. The Water Commission will approve projects and loans from the IRLF, and the Bank of North Dakota will manage and administer the loans.

Specific requirements and terms will be established and approved by the Water Commission for each loan.

MUNICIPAL, RURAL, AND INDUSTRIAL WATER SUPPLY PROGRAM

A major source of grant funding for water supply development in North Dakota in previous biennia has been through the federal MR&I Water Supply Program. Funding of this program was authorized by Congress through the 1986 Garrison Diversion Unit Reformulation Act, and it is jointly administered by the Garrison Diversion Conservancy District, and 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 Southwest Pipeline Project, and a project to address water supply issues in the Red River Valley.

Annual MR&I funding is dependent upon U.S. Congressional appropriation. As of October 2014, \$335 million in federal funds had been approved for North Dakota’s MR&I program with \$6.8 million and \$1.5 million for federal fiscal years 2013 and 2014 (Figure 19).

DRINKING WATER STATE REVOLVING LOAN FUND

An additional source of funding for water supply development projects is the Drinking Water State Revolving Loan Fund (DWSRLF). Funding is distributed in the form of a loan program through the Environmental Protection Agency and administered by the North Dakota Department of Health. The DWSRLF provides below market-rate interest loans of 2.5 percent to public water systems for capital improvements aimed at increasing public health protection and compliance under the federal Safe Drinking Water Act.

The Water Commission’s involvement with the DWSRLF 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 DWSRLF, 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 2014 comprehensive project priority list includes 200 projects with a cumulative total project funding need of \$672 million. The funded list of 184 projects includes \$414 million in loans for fiscal years 1997 through 2014. Available funding for the DWSRLF program for 2014 is anticipated to be approximately \$22.7 million.

OTHER FEDERAL FUNDING

With regard to other federal funding, the U.S. Army Corps of Engineers provides significant assistance to North Dakota for flood control and water supply projects. The Environmental Protection Agency, U.S. Bureau of Reclamation, U.S. Geological Survey, 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.

Federal MR&I Water Supply Program Dollars Received, 1987-2014

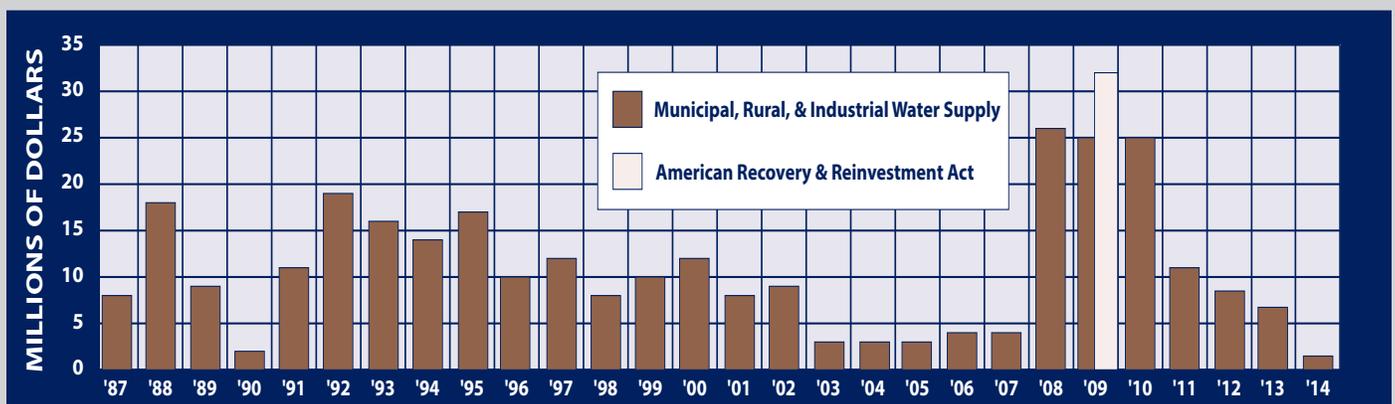


Figure 19. Federal MR&I Water Supply Program dollars received, 1987-2014.

Project Funding Priorities: 2015-2017 Biennium

This section discusses the state’s priority water development efforts and funding for the 2015-2017 (Table 12) biennium. It includes one course of action for water development in North Dakota that is subject to change during the 64th Legislative Assembly, further review of Water Commission cost-share requirements and eligibility, and other unforeseen events that may occur during the biennium.

The Water Commission’s new water development funding priorities totaling \$930 million are summarized hereafter.

Water Commission Funding Priorities, 2015-2017 Biennium			
Priority Categories	SWC Total 2015-2017 (Millions)	SWC Grant Estimate 2015-2017 (Millions)	SWC Loan Estimate 2015-2017 (Millions)
Devils Lake Outlet Operations			
F-M Diversion			
Grafton Flood Control			
Mouse River Flood Control			
Williston Flood Control			
Sheyenne River Flood Control			
General Water Management			
Irrigation			
Water Supply Program			
NAWS			
Red River Valley Water Supply			
SWPP			
WAWS			
TOTAL			

Pending
Governor’s
Budget

Table 12. Water Commission Funding Priorities, 2015-2017 Biennium
TBD = To Be Determined



DEVILS LAKE OUTLET OPERATIONS

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

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

The Water Commission has budgeted \$11 million for costs related to the operation and maintenance required to keep both outlets operating to the maximum extent allowable during the 2015-2017 biennium.

FARGO-MOORHEAD AREA DIVERSION

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

Initially, the project that the city of Fargo pursued following the 1997 flood was the Southside Red River and Wild Rice River Levee Alternative, which was primarily designed to protect areas in south Fargo. But after the flood of 2009, it became apparent that a larger-scale flood control project would better serve both Fargo and Moorhead, and the greater metro area. Since that time, the U.S. Army Corps of Engineers, in cooperation with Flood Diversion Board of Authority members (Fargo, ND, Moorhead, MN, Cass County, ND, Clay County, MN, Cass County Joint Water Resources District, and the Buffalo-Red River Watershed District, MN) worked jointly to complete an EIS to assess potential measures to reduce the entire metro area's flood risk. The EIS was completed

in late 2011, and 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.

The preferred alternative is a 20,000 cfs diversion channel on the North Dakota side of the Red River that will be approximately 36 miles in length. The project is also expected to have a 150,000 acre-foot staging area upstream of the southern-most portion of the diversion. In addition to the diversion features, extensive in-town levee constructions are also part of ongoing efforts (See Map Appendix).

In 2015 and 2016, Fargo estimates that about \$525 million will be invested in project efforts, with over \$200 million of that directed toward land acquisitions for in-town levees, the Oxbow-Hickson-Bakke levee, outlet and control structures, the Sheyenne aqueduct, and within the planned staging area. Approximately \$271 million will be allocated toward construction of in-town levees, the Oxbow-Hickson-Bakke levee, and bridge-related efforts. Remaining expenditures during the 2015 and 2016 timeframe will be related to project design and permitting, technical oversight, and utility relocations.

During the 2013 Legislative Assembly, the State of North Dakota pledged \$450 million toward completion of the Fargo-Moorhead area diversion project. In past biennia, including the 2013-2015 biennium, the Water Commission has budgeted and approved \$175 million for this project. With the state's remaining commitment at \$275 million, the city of Fargo has requested this amount be allocated over the course of the next four biennia. In the 2015-2017 biennium, the Water Commission has budgeted \$69 million toward the project as required by HB 1020. The total project cost is estimated at \$1.8 billion.

GENERAL WATER MANAGEMENT

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

The \$## million that is budgeted for general water management projects will be used to fund a portion of the state's general projects that are ready to proceed during the 2015-2017 biennium.

GRAFTON FLOOD CONTROL

The Park River at Grafton has reached major flood stage 29 times since record keeping began in 1882 – with ten major floods since 1979 alone. Today, it is estimated that damages to the city from a 100-year event, without flood protection, would total about \$94 million (2014 dollars). With approximately 90 percent of Grafton located in the 100-year floodplain, the community is interested in moving forward with a permanent solution to their ongoing flood risks from the Park River.

To reduce their risk, Grafton is pursuing a comprehensive flood damage reduction project that will include levees, a diversion channel, and possible modification to the Park River through Grafton. When completed, the project will provide 100-year protection to the community.

For the 2015-2017 biennium, the Water Commission has budgeted about \$## million, or up to 60 percent of eligible costs. Per Water Commission policy, this project may also be eligible to receive loans for a portion of the local share.

IRRIGATION

Irrigation efforts during the 2015-2017 biennium are planned for the Oakes Test Area (OTA), McClusky Canal, and Nesson Valley Irrigation District.

The OTA project is to secure a firm water supply for the 5,000-acre irrigation project, using ground water from the Oakes aquifer in and near the project area. The project will consist of principal supply works to capture and convey ground water to the existing

OTA distribution system. Irrigation efforts along the McClusky canal are expected to add another 3,000 acres of irrigation using central supply works. And at Nesson Valley, project sponsors expect to move forward with supply works that will bring several thousand acres of irrigation online. The Water Commission has budgeted \$## million for irrigation development during the 2015-2017 biennium.

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 the summer of 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 the summer of 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. The focus of the MREFPP has now shifted toward implementation, and several efforts are expected to move forward in the 2015-2017 biennium in Renville, Ward, McHenry, and Bottineau Counties.

Renville County efforts will involve rural structure acquisitions, relocations, or ring dikes; and bridge and road modifications.

Ward County efforts may include rural structure acquisitions, relocations, or ring dikes; Burlington property acquisitions, levee segments, and bridge improvement efforts; Tierracita Vallejo housing development acquisitions, pump station construction, railroad closure, and levees; Minot acquisitions, levees, and floodwalls; and in Sawyer – bridge replacement. In addition, engineering and permitting efforts will also be underway for several projects in Ward County.

McHenry County efforts may include J. Clark Salyer structure modifications; rural structure acquisitions, relocations, or ring dikes; Velva bridge replacement; rural channel modifications; and rural bridge and road modifications.

In Bottineau County, sponsors will be pursuing J. Clark Salyer structure modifications, rural channel modifications, and rural bridge and road modifications.

The aforementioned priorities for the MREFPP were developed by the Souris River Joint Water Resource Board – which estimates a financial need of \$228 million for the MREFPP through 2017.

The Water Commission budgeted \$61 million to advance various elements of the MREFPP during the 2013-2015 biennium. For the 2015-2017 biennium, the Commission has budgeted \$## million to cover up to 60% of eligible project costs. Per Water Commission cost-share policy, this project may also be eligible to receive loans for a portion of the local share.

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 from the Missouri River to Minot were completed in the spring of 2009. The project is currently serving Berthold, Kenmare, Burlington, West River Water District, Upper Souris Water District, Mohall, Sherwood, All Seasons Water District, and Minot (also serves North Prairie Water District and Minot Air Force Base). NAWS is getting interim water supply through a 10-year contract with Minot, which expires in 2018.

In 2002, lawsuits were initiated, but various elements of project construction have been allowed to proceed by court order including most of the distribution system and nearly all of the supply pipeline.

Depending upon findings of a Supplemental EIS and legal decisions, efforts are planned to move NAWS forward. To support NAWS, the Water Commission has budgeted \$## million to: complete construction of pipeline between Renville Corner and Westhope; complete construction of pipeline between Glenburn and Renville; initiate design work on a biota treatment plant intake, and remaining contracts to move water from the Missouri River system to Minot; and develop plans and manuals as required by the Supplemental EIS.

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 began pursuit of a state and local project.

In early 2014, the Water Commission entered into an agreement for a Value Engineering (VE) study that focused on potential alternatives for a proposed state and local project. From the VE, three alignments were identified as being the most likely to meet criteria for future consideration. Those options were the Washburn to Baldhill Creek, Bismarck to Lake Ashtabula, and Bismarck to Fargo and Grand Forks routes (See Map Appendix).

Following completion of the VE, the state moved forward with an intake analysis effort to identify the potential locations and design of an intake from the Missouri River between Washburn and south Bismarck.

To support the advancement of this water supply project that will eventually provide a reliable, high quality source of water to eastern North Dakota, the Water Commission has budgeted \$### million during the 2015-2017 biennium.

SHEYENNE RIVER FLOOD CONTROL

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

During the 2015-2017 biennium, Phase II of the Valley City permanent flood protection project will focus on protecting downtown areas – including critical infrastructure such as the city hall, fire department, police station, public works, Mercy Hospital, Sanford Clinic, and downtown business district.

Like Valley City, Phase II of their permanent flood protection project will proceed during the 2015-2017 biennium. Phase II projects will consist of levees,

a floodwall, infrastructure relocations, property acquisitions, storm water pump stations, and removable floodwall closure structures.

Fort Ransom is seeking protection from a 500-year event, though project specifics are still being developed.

Recognizing the need for improved flood control efforts along the Sheyenne River, the Water Commission has budgeted \$## million to advance projects in those communities. It is expected that a portion of the budgeted amount will be provided in the form of loans.

SOUTHWEST PIPELINE

NDCC, Section 61-24.3 declares necessary that the Southwest Pipeline Project “...be established and constructed, to provide for the supplementation of the water resources of a portion of the area of North Dakota south and west of the Missouri River with water supplies from the Missouri River for multiple purposes, including domestic, rural, and municipal uses.” The 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 58,000 residents, including more than 5,350 rural service locations, 31 communities, and 23 raw water customers (See Map Appendix). With unprecedented growth continuing in that portion of the state, the need for reliable water supplies to support that growth has never been greater. During the 2013-2015 biennium, unprecedented progress has been made on this project, with plans for additional advancements in the 2015-2017 biennium.



The \$### million budgeted for the Southwest Pipeline Project will be used to build additional water treatment plant capacity, increase storage capacity of raw water and potable water, and increase pumping and pipeline capacity by upgrading and paralleling pipelines. When the main transmission lines are completed, the city of Killdeer will be connected to the project. Other construction efforts will provide water service to the city of Rhame.

WATER SUPPLY PROGRAM

Federal funding for water supply projects through the Municipal, Rural, and Industrial (MR&I) Water Supply Program has decreased dramatically in recent biennia. For that reason, the state has increased investments in municipal, rural, and regional water supply system advancements across the state.

As previously outlined in the inventory of water project funding needs for the 2015-2017 biennium, there is a large number of communities, and rural systems seeking funding for a broad spectrum of efforts. To support many of these projects, the Water Commission has budgeted \$### million for municipal and rural water supply projects during the 2015-2017 biennium, including a combination of grants and loans.

WESTERN AREA WATER SUPPLY

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

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

Western Area Water Supply (WAWS) project has involved a collaborative effort between the city of Williston, 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). As originally envisioned, WAWS has been making progress toward the development of this regional system to deliver Missouri River water from the Williston Regional Water Treatment Plant to areas throughout the northwest, oil producing areas of the state (See Map Appendix).

Several water supply systems are currently being serviced by WAWS, including Williston, Watford City, Ray, Tioga, Stanley, Wildrose, Crosby, Noonan, Columbus, and Fortuna, as well as McKenzie Rural Water, Burke-Divide-Williams Rural Water, and Williams Rural Water districts.

In 2014, an expansion of the Williston Regional Water Treatment Plant was completed, bringing the plant from 10 MGD to 14 MGD. The next expansion is underway, upgrading the plant capacity to 21 MGD. That project is scheduled for completion in the spring of 2015. Additional contracts for primary transmission lines, pump stations, and reservoirs are also underway throughout the system. And, WAWS is rapidly expanding rural service connections. By the end of 2014, WAWS (through Williams and McKenzie Rural Water Systems) will be servicing about 3,300 rural locations, with plans for many more in the future.

WAWS currently has the following water depots operating and generating revenue: McKenzie County's System II Keene, McKenzie County's Indian Hills, the city of Williston's 2nd Street and North Williston, 13 Mile Corner, Alexander, Watford City, R&T, and Stanley. Direct water pipeline connections have also been made available by WAWS to oil companies interested in direct supply lines to drilling locations.

In response to this increased demand for water service and the associated planning efforts that have been completed, the WAWS Authority board of directors has requested funding for Phase IV during

the 2015-2017 biennium - totaling \$120 million. The Water Commission has designated \$## million for this project, including a combination of grant and loan.

More specifically, during the 2015-2017 biennium, the WAWS Authority will: expand rural water distribution in the Burke-Divide-Williams service area; make transmission system improvements and expand rural distribution in the McKenzie County Water Resource District service area; construct water treatment plant improvements, make transmission system improvements, and expand rural distribution in the R&T Water Supply System service area; design the next water treatment plant expansion, make transmission system improvements, and construct elements of a pretreatment superstructure in Williston; and complete various transmission system improvements and rural water system expansions in the Williams Rural Water District service area.

WILLISTON FLOOD CONTROL

Williston's Bell Acres subdivision and other properties located on the west side of Williston have historically experienced periodic flooding – both from local watersheds and backwater from Sand Creek. The city expects the frequency and duration of these flood events to increase given rapid development occurring in the watershed. To address this issue, Williston commissioned a study that recommended a combination of upstream detention and downstream conveyance improvements. Once this four-phase project is completed it will provide 100-year protection for this portion of Williston.

The Water Commission has budgeted for up to 60 percent of eligible costs associated with this project, or about \$# million during the 2015-2017 biennium. Per Water Commission cost-share policy, this project may also be eligible to receive loans for a portion of the local share.

FUTURE WATER DEVELOPMENT FUNDING NEEDS BEYOND 2015-2017

Many of North Dakota's largest water projects cannot be completed in one or even two biennia, but rather, require longer-term financial planning. This is particularly the case for some of North Dakota's larger water project funding priorities. Though water projects are some of the most complicated to move forward, and are incredibly difficult to plan for financially, it is worthwhile to recognize and plan for future commitments that may be needed to move critical water infrastructure forward in future biennia.

In flood control efforts, major projects like the Fargo-Moorhead area diversion, Mouse River enhanced flood protection, Grafton, Williston, and Sheyenne River flood control will all be seeking future funding commitments from the state. In addition, major regional water supply projects like Southwest Pipeline, Western Area Water Supply, Northwest Area Water Supply, and an eastern North Dakota water supply project will all require large amounts of financial support to succeed in the future. This is also the case for numerous communities and rural water systems seeking to expand and improve their water supply systems in all corners of the state.



Special Water Management & Development Topics

North Dakota has a variety of special issues or topics that have a significant impact on water management and development. The following special topics are wide ranging in scope, affecting all aspects of water management and development, from education to project implementation. Several special topics are highlighted hereafter to demonstrate their individual significance. They are presented in alphabetical order.

APPORTIONMENT

Water quantity apportionment can be defined as a “sharing and/or dividing” of water amongst its shareholders based upon a legally binding agreement or plan.

Two river basins in North Dakota are involved with apportionment agreements. The first was formalized in the 1940s when the International Joint Commission recommended interim measures for the sharing of the water of the Mouse (Souris) River. The interim measures were approved by the U.S. and Canadian governments in 1941 with most recent revisions made in 2000. The other apportionment agreement involves the 1950 Yellowstone River Compact. The compact agreement involves Montana, Wyoming and North Dakota.

In recent years there has been an interest, particularly by the Province of Manitoba, to apportion waters of the Red River. The Red River is an international river that is shared by North Dakota, Minnesota, South Dakota and the Province of Manitoba, Canada. Historic streamflow records reveal that flows in the Red River of the North are extremely variable seasonally, annually and during both drought and wet climatic cycles. At times during extreme drought conditions, the Red

River has had extended periods of no flow at Fargo. Several factors, such as increase demand for water due to population increase, economic growth, and the uncertainty of climate change have resulted in concern expressed by some that target flows should be determined at the international boundary to ensure that a minimal amount of water is available for downstream users in the basin.

With more demands placed on the flows of the Red River by current and anticipated future water users in the basin, the International Red River Board (IRRB), a board of the International Joint Commission, is responding to the concerns raised and is studying apportionment issues relating to the Red River basin. The ultimate goal is to assess, identify, and recommend a process for the development and implementation of a flow target rate at the international boundary that will enable equitable sharing of flows in the Red River between Canada and the United States. The flow target rate would also take into consideration minimum instream flow needs for water flow conditions to sustain aquatic life such as fish and their life stages that are dependent upon streamflow regimes for survival.

To date, the IRRB has funded a literature review on apportionment of the Red River, the development of a report that identifies a process to develop and implement water quantity apportionment procedures, and an instream flow needs study. The IRRB continues to pursue an equitable resolution to the international water quantity apportionment issue involving the Red River basin.

At some point, formal discussion and negotiation regarding apportionment of the Red River will most likely begin. The process will be lengthy, requiring detailed hydrologic studies involving analysis of water appropriations, instream flow requirements, water use and flow conditions. Any formal agreement will require negotiations that must be mutually acceptable to all entities involved. It is anticipated that this process will take several years to complete.

AQUATIC NUISANCE SPECIES

Aquatic nuisance species (ANS) are simply defined as “non-native aquatic species that for some reason, humans find undesirable to be introduced into an aquatic environment.” Over the last two decades, ANS have become increasingly important in regards to North Dakota water projects.

ANS first became relevant to North Dakota water issues when the Garrison Diversion project was ultimately blocked by, among other factors, Canada’s concern over the threat of transference of ANS. In the years since, the Devils Lake Outlet, Northwest Area Water Supply Project, and Red River Valley Water Supply have all had to address the ANS issue in one way or another.

ANS are a concern because they can impact an aquatic system in a number of ways: through competition with native species; through the creation of byproducts that are environmentally undesirable; through changes to the aquatic environment that are undesirable to humans, or other aquatic organisms that they value; and through the potential for negative economic impacts to structures such as water intakes through higher maintenance costs.

In North Dakota, the ANS that have been documented in the waters of the state include curlyleaf pondweed, Eurasian watermilfoil, silver carp, and zebra mussels. In general, these ANS are found in some parts of the state, and not others, or have been documented once, but not in following years. For example, zebra mussel veligers (juveniles) were observed in the Red River near the Ottertail River confluence for several years, but have not been identified anywhere else in the Red River in North Dakota, nor for the last several years. In adjoining jurisdictions, ANS are becoming an increasing problem, and are starting to have real economic impacts. With continued high probability of movement of ANS, it is likely that in the coming years North Dakota will have to grapple with numerous ANS threatening to invade from all directions.

In a study from the University of Notre Dame, the impact of zebra mussels on the Great Lakes region was \$27 million annually for municipalities, power plants, and other industrial water uses. In 2008, zebra mussels were present in the Missouri River in southeastern South Dakota. If zebra mussels were to successfully establish in North Dakota, industries such as power plants, and municipal water supplies along the Missouri River corridor could see maintenance costs dramatically increase.

Water management organizations throughout the state are finding that ANS are requiring an increasing amount of their time and resources. The key to addressing this problem in North Dakota is education and prevention, through cooperation with the state and federal entities involved in ANS control, such as the North Dakota Game and Fish Department and the U.S. Geological Survey.

CLOUD MODIFICATION

The North Dakota Cloud Modification Project (NDCMP) has been in existence for many years, and it currently serves six western counties in the state. The NDCMP has two goals: 1) suppression of damaging hail; and 2) enhancement of rainfall. Because of the long period that the NDCMP has operated in North Dakota, it has allowed a thorough examination of the science of cloud seeding.

Cloud seeding provides an opportunity to increase the number of efficient ice nuclei in the seeded cloud, which in turn reduces the severity of hail, and increases the amount, frequency, and distribution of rain. The most recent evaluations of the cloud seeding program in North Dakota indicate a 45 percent reduction in crop-hail losses, a six percent increase in wheat yields, and up to a 10 percent increase in rainfall. The analysis of hail reduction or hail suppression shows the average crop value saved through cloud seeding is \$3.7 million per year, and with a 10 percent increase in rainfall, a total direct impact of \$19.7 million per year.

When the top of a growing cumulonimbus (thunderstorm) cools below freezing, water droplets don't immediately freeze. Instead, they become "super cooled." Windblown dust and soil particles provide the "seeds" for the development of ice crystals. Many times, however, these dust particles are either too inefficient or too few in number to provide sufficient nucleation.

Cumulonimbus clouds can also generate damaging hail. Cloud seeding can be used to reduce a storm's severity by adding efficient nuclei and increasing competition for cloud water altering energy transfer in the cloud, changing the trajectory of cloud particles, and ultimately modifying the size of ice particles.

The cloud seeding process increases precipitation by enhancing ice crystal or raindrop production in clouds. This is accomplished by using ice-forming agents, such as silver iodide or dry ice, or water attracting agents like salt. As seeding accelerates the precipitation process, the seeded cloud becomes a more efficient producer of precipitation. To reduce the severity of a potential hailstorm, cloud seeding is used to increase competition for cloud water through the addition of more efficient ice nuclei, and to spread the energy released by the storm over a larger area.

Silver iodide and dry ice (solid carbon dioxide) have been selected for their environmental safety and superior efficiency in producing ice in clouds. Research has clearly documented that cloud

seeding with silver iodide aerosols shows no environmentally harmful effect.

DEVILS LAKE

Devils Lake is a terminal lake in the Devils Lake basin, which means that water leaves Devils Lake through evapotranspiration or when its elevation is high enough to overflow the basin's boundary. Because Devils Lake does not have a natural outlet at its current elevation, it is either rising or falling in response to climatic conditions, a condition that has led to numerous challenges since settlement times. There is geological evidence that Devils Lake has overflowed into the Sheyenne River and dried up completely on several occasions over the last 10,000 years.

Devils Lake's most recent rise began in 1993, and as of winter 2014, was at an elevation of 1,452.3 feet above mean sea level (amsl), a rise of over 29 feet since 1992. In August 2001, Devils Lake reached an elevation sufficient to allow water to flow naturally from east Devils Lake, through the Jerusalem Channel, into Stump Lake. In 2007, Devils Lake had moved enough water through the Jerusalem Channel to equalize the elevation of Stump Lake with Devils Lake. The equalization means that Stump Lake and Devils Lake will rise together, and the significant storage capacity that Stump Lake once provided has been utilized.

Some of the challenges associated with Devils Lake's flooding situation include tens of thousands of acres of flooded agricultural land, the relocation of houses, roads, and structures, such as the city of Devils Lake's water supply line.

The State of North Dakota has identified three broad strategies to attempt to mitigate water issues in the basin: including outlets to the Sheyenne River, basin water management, and infrastructure protection.

The Devils Lake Outlets

The State of North Dakota began construction on an outlet from the West Bay of Devils Lake to the Sheyenne River in 2002, and completed it in 2005. The outlet began operating during the summer of 2005, was not operated due to permit constraints

in 2006, and was operated again in 2007 and 2008. In 2010, construction increased the capacity of the West Devils Lake outlet to a maximum of 250 cfs. In 2012, in response to rapid increases in lake levels, the state built an additional outlet on the east side of Devils Lake, with a maximum capacity of 350 cfs. The combined operating capacity of both east and west outlets is 600 cfs (Figure 20). To keep stakeholders informed about outlet operations, the Devils Lake Outlets Advisory Board meets at least once per year.

Upper Basin Water Management

There have been numerous efforts at upper basin water management in the Devils Lake Basin, including storage and land management programs. Various efforts to store water and reduce runoff in the upper basin continue - mostly through a variety of conservation programs.

Infrastructure Protection

Since the lake began its rise in 1993, over \$1 billion has been spent on infrastructure in the Devils Lake region. As the lake crept higher, the levee that

protects the city of Devils Lake was raised numerous times, roads were raised or moved, as were homes, businesses, and all of the other structures that make modern life possible. While vital infrastructure such as roads, the levee around the city of Devils Lake, or rail lines have, or are being raised above the overflow elevation of Devils Lake, the lake continues to flood homesteads and farm land in rural areas, creating significant impacts.

DRAINAGE - SURFACE SYSTEMS

Surface drainage has been a popular tool in North Dakota since statehood. Primarily it is associated with agriculture and the clearing of water to include ponds, sloughs, lakes, and sheetwater. By draining water off of agricultural land, farmers can increase yields in marginal areas of their property, increase planting acreage, plant fields earlier in the year, and increase the value of their property overall.

Unlike subsurface drainage, or drain tiling, surface drainage has a clear-cut permitting process and is outlined in Article 89-02 “Drainage of Water” in the Office of the State Engineer’s Administrative Code.

Devils Lake Outlet Discharges, 2007-2014

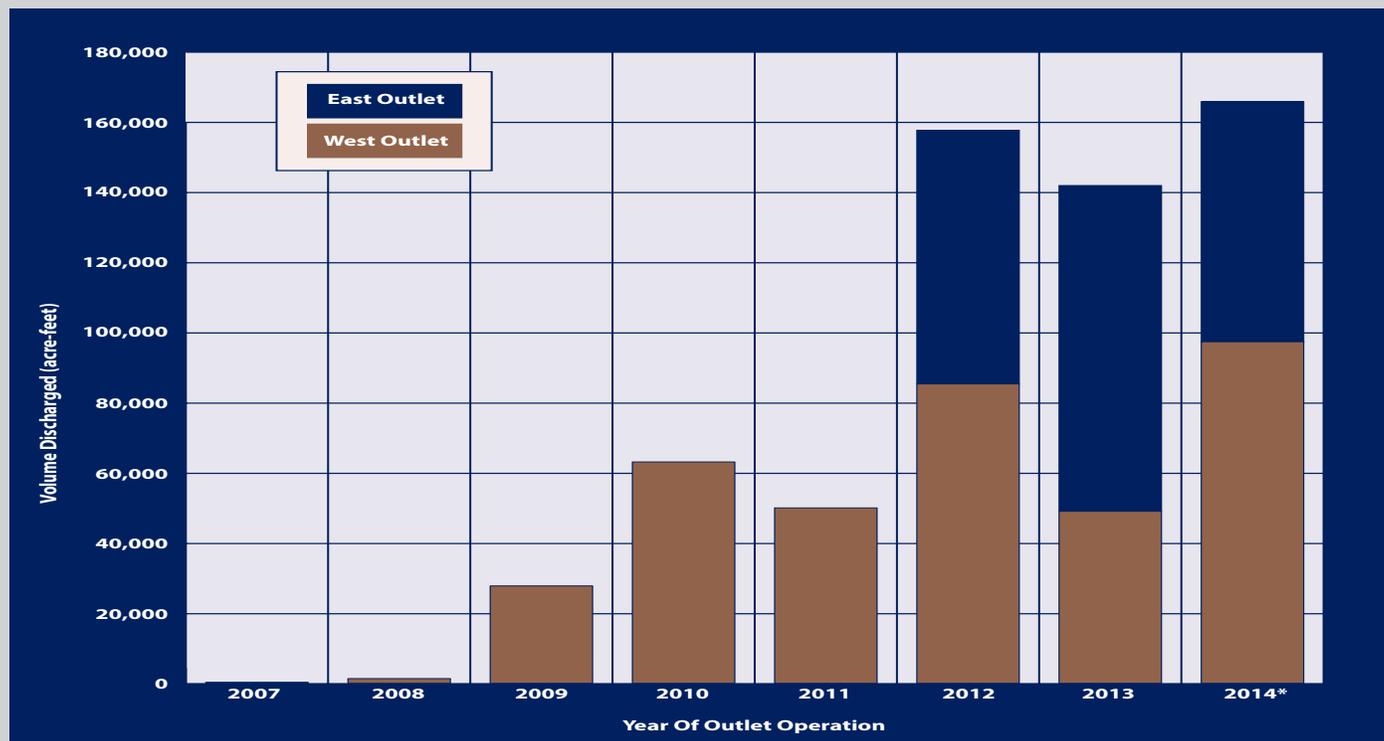


Figure 20. Devils Lake outlet discharges, 2007-2014.

A permit is required before any person may drain by pumping a pond, slough, lake, sheetwater, or any combination having a watershed of eighty acres or more. Permits are also required for instances of constructing a drain and modifying a drainage that had previously been permitted.

Additionally, a permit is required when a person wants to fill a pond, slough, lake, or sheetwater which has a watershed of eighty acres or more, for the purpose of causing the water body to be drained by elimination of all or a portion of the existing storage.

DRAINAGE - TILE SYSTEMS

Historically, most drain tile was made from short, cylindrical sections of concrete or clay called “tile,” resulting in sub-surface drains being called “tile drains.”

Today, tile drains commonly consist of perforated polyethylene tubing buried in fields, generally at depths of three to six feet. The pipe takes in surrounding ground water that is saturating the soils, and transports it away from the field. From there, the water is discharged into a water body, such as a large wetland, lake, ditch, or other natural

watercourse. As a result, drain tile can help improve farmland that might otherwise be lost to flooding. Other benefits of tile drainage include higher land values, reduction of soil moisture levels for optimal crop growth, and increased productivity for crop growth.

Tile drainage allows for timely fieldwork, and crop growth on soils that would otherwise be marginal for agriculture because of flooded land or a high water table. The downside of this practice is that it has the potential to increase flooding downstream, and cause negative effects on water quality due to sedimentation, and leaching of agricultural chemicals, which ultimately can impact habitat for wildlife. However, the use of well designed flood control structures can maximize water storage and reduce flood flows, when properly managed.

One major change that has occurred since the last writing of the State Water Management Plan is the procedures in which tile drainage project applications are processed and permitted. During the 2011 Legislative Session, N.D.C.C. 61-32-03.1 was passed. This new law transferred the primary permitting responsibilities away from the Office of the State Engineer, to individual Water Resource



Districts. The Office of the State Engineer is only involved in the permitting process if a project is determined by a water resource district to be of statewide significance.

In the 10 years preceding the writing of the last edition of the 2009 State Water Plan, approximately 180 tile drain permits were approved and issued. Since that time, the number of applications approved by local water resource districts has increased tremendously; including 158, 182 and 200 permits approved in 2011, 2012, and 2013, respectively. But, not all water resource districts have been submitting approved permit information to the Office of the State Engineer. So, these numbers are based off the ones that have.

Since the law changed in 2011, it is estimated that 88,100 acres or 132 square miles of land have been tiled in North Dakota.

All permits received from the water resource districts have been entered into the database of the Office of the State Engineer as of the writing of this document.

It is expected that based on the benefits to landowners and farmers, installation of tile drainage will continue into the future.

DROUGHT MANAGEMENT PLANNING

Drought is a climatic phenomenon that will always occur. The uncertainty surrounding drought is not if another drought will occur, but rather what will be the severity, regional extent and duration of the next drought. North Dakota has experienced numerous droughts and will continue to do so. The hardship of drought is not only economic but also affects the social well being of those impacted. As the impacts of drought are multifaceted, it dramatically affects peoples lives in many different ways.

North Dakota does not have a comprehensive drought contingency plan, however the state does have a statewide Drought Response Plan that goes into effect during serious drought. The Drought

Response Plan is typically initiated by impacts that occur in the agricultural sector, such as lack of forage or water supplies for livestock, and crop failure due to drought. To activate the Drought Response Plan, the Governor declares a drought emergency – including identifying a geographic area within the state. Federal and state agencies can then respond to the drought by activating programs that will assist in the drought emergency. Any type of assistance, available from federal or state drought programs, is dependent upon money being available or appropriated for the specific drought programs.

Most of the federally managed reservoirs have incorporated into their individual reservoir operating plans modification to reservoir operations that go into effect during prolonged drought conditions. In addition, many of North Dakota's major cities have drought contingency plans that are triggered when drought conditions, contamination, or mechanical failure affects their water supply. Some measures that are implemented by cities during drought conditions include requests by the cities to individual water users to limit and/or restrict outdoor water use, such as watering lawns and washing cars.

In addition, the Red River Basin Commission is pursuing drought-planning efforts for the Red River Basin. This includes a communication process that will ultimately result in enabling decisions regarding water use and restriction among the state and international jurisdictions in the Red River Basin.

A North Dakota Drought Contingency Plan that clearly identifies those responsible for monitoring the precursors to drought, plus establishing drought indicators and trigger mechanisms to determine appropriate responses would be helpful to prepare for and mitigate drought impacts more quickly and effectively.

INDIAN WATER RIGHTS

Over a hundred years ago, the United States Supreme Court issued one of the most important decisions for water law, and for Native Americans. In *Winters v. United States*, the Court ruled that when Indian reservations are established, water

rights are reserved for the tribe. Thus, the priority date for tribal water rights is the date that the reservation was created. Because North Dakota reservations were all created in the 1800s, water rights reserved to tribes pre-date state law water rights.

While the Winters case declared the tribal water right, it did not explain how the right would be quantified. Based primarily upon subsequent decisions in other courts, the method by which tribal water rights have been adjudicated is the practicable irrigable acres standard, i.e., quantifying the water right based on the reservation's potential for irrigated agriculture. The tribes have rejected this purely objective method for quantifying water rights on the reservations in favor of a more flexible standard. They argue that the reservations were established as a permanent homeland and that they are entitled to use all water necessary to achieve economic self-sufficiency.

As a result, uncertainty about appropriate application of the Winters Doctrine, and the quantity of water that Indian tribes might control, has led to significant lawsuits throughout the west.

The Water Commission and State Engineer are committed to building a foundation for a meaningful relationship with the Indian nations located within the state to establish cooperative water management. Presently, preliminary discussions are ongoing with the Standing Rock Sioux Tribe involving their tribal reserved water rights.

INFORMATION TECHNOLOGY (IT)

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

As the demands on the state's water resources continue to grow and evolve, the Water Commission is faced with additional challenges to provide

more and better information related to the state's water resources. These challenges continue to place an increasing emphasis on both the spatial and temporal relationships that are inherent to managing water resource systems. In order to address these areas, the agency has developed and deployed additional spatial and graphical tools to address the complex relationships within the water resource data. In many cases, these tools have been integrated directly into the data management applications to address these complexities within the data development and data management processes.

With increasing demands for water related to oil activity in western North Dakota, the Water Commission has faced additional challenges associated with monitoring water withdrawals from both surface and ground water sources. In an effort to provide more effective capabilities for monitoring water withdrawals in western North Dakota, the Water Commission has deployed SOAP (Simple Object Access Protocol) services for real-time reporting, using available industry telemetry solutions. The service designed by the Water Commission provides a minimal footprint, with limited intrusion into the commercial telemetry software and hardware that are currently available. Not only does the web services solution provide simple accessibility, it provides scalability for North Dakota to extend this type of monitoring beyond the limited scope of water withdrawals for oil activity in western North Dakota.

The initial implementation was tested at a couple of sites in 2012. As testing was completed, production services were implemented at a few sites in mid-2013. It is likely that utilization of this service will be expanded to include most of the oil-related water depots in western North Dakota by early 2015. As demands for water continue to grow, it is possible that in the future these types of services may be extended to other resource monitoring areas.

Beyond the basic requirements and demands for better tools and management capabilities, the agency has also been faced with significant demands for additional bandwidth and capacity. As more and more data are collected to support an array

of management initiatives, an additional burden is placed on the IT infrastructure to provide the necessary storage, bandwidth, and computational capabilities to store, process, and analyze these data. Increasing demands for aerial imagery and LiDAR data have placed tremendous demands upon the agency infrastructure for data storage, and for the associated tools to maintain and disseminate these data. The agency's storage infrastructure has grown from just under 1 terabyte (TB) in 2002 to over 180 TB in 2013, and is expected to exceed 280 TB by 2015 (Figure 21).

In addition to the tools and resources that are used internally, the Water Commission has also leveraged IT infrastructure to provide complete access to all of the data resources that the agency maintains to the public, through an array of web services. All of the water resource data for North Dakota are made available through the agency web site (<http://www.swc.nd.gov>). This includes all of the site information that is used for monitoring ground water resources in the state, which includes subsurface lithology, water levels, water chemistry and associated site information. The agency web site also includes data on precipitation, dams, drains, dikes, and other retention structures that are monitored by the Water Commission.

Water Commission Digital Storage

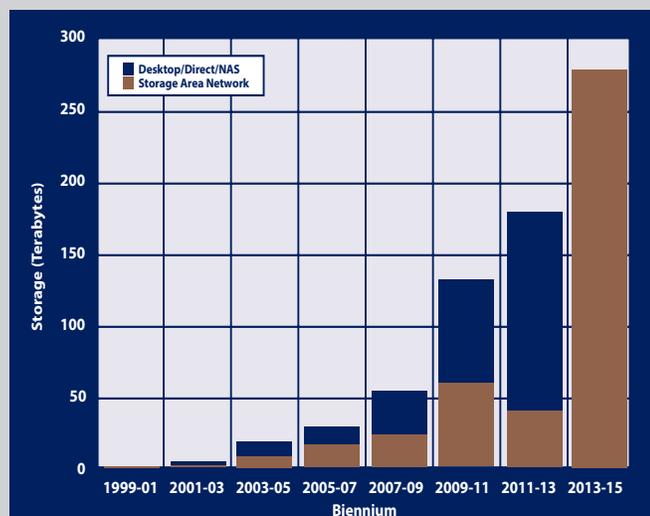


Figure 21. Water Commission digital storage.

In addition to the wide range of data resources that are integrated into the agency's web services, the Water Commission maintains a site dedicated to the surveying community that includes more than 2,800 Government Land Office plat maps, along with all of the first and second order benchmarks (<http://survey.swc.nd.gov>). During the 2011-2013 biennium, the Water Commission developed a map service that was originally designed to address the storage and dissemination of the massive amounts of LiDAR data collected in North Dakota (<http://lidar.swc.nd.gov>). This site has grown, and now includes LiDAR data from nearly a dozen different projects, which includes approximately 15 TB of raw data.

Data available for public use:

- Government Land Office Plats
- Precipitation and Hail Data
- Survey Horizontal and Vertical Control
- Water Permit Data
- Various Groundwater Studies
- Drainage Permit Data
- Well and Site Location Data
- Stream Flow Data
- Lithologic Data
- Construction Permit Data
- Water Chemistry Data
- Retention Structure Data
- Water Level Data
- Digital Map Data
- Lidar
- Well Driller's Reports
- Weather Radar Data

INTERNATIONAL BORDER DIKE

The International Border Dike is a water retention structure that North Dakota considers to be a dike and the Province of Manitoba considers a road. The structure in question was developed over 60 years ago, and is located just north of Pembina County in Manitoba, Canada.



Aerial image looking east over the international border dike during the 2009 flood. North Dakota 18 is in the foreground, the town of Neche is ½ mile south.

The slope of the land in this portion of Pembina County is generally from southwest to northeast. The dike, built in 1944, cuts across the natural gradient, creating a serious flooding problem for landowners on the North Dakota side of the border, while protecting the land that would normally be flooded on the Manitoba side. In wet years and after heavy spring runoff events, the dike can cause significant flooding on the U.S. side, inundating many square miles of agricultural land and threatening to flood farmsteads.

The dike has been periodically raised and lengthened since its original construction, and it is now almost 30 miles long. There have been numerous discussions between county officials, landowners on both sides of the border, the Governor's office, the Water Commission, and Manitoba government officials. In 1956, a large drain to relieve flooding was jointly constructed by the Water Commission and Manitoba's Rural Municipality (RM) of Rhineland. The drain runs parallel to the border, on the Canadian side, from about 1 mile west of Gretna, and continues east about 8 miles to the Aux Marais crossing. The drain crosses the dike and ties into the Aux Marais channel.

Along the western portion of the dike, two crossings have been equipped with substantial culverts designed to handle the local runoff in a cooperative effort involving the counties, the Water Commission, and Manitoba. However, these structures do not alleviate flooding problems further east in Pembina County along the eastern portion of the dike, where breakout flows from the Pembina River occur. As a result, Pembina County has initiated a lawsuit in Manitoba to have the

dike completely removed or breached in critical locations. A judgment is expected in the lawsuit in 2016.

While the lawsuit has been ongoing, a separate effort to address the border dike issue has been attempted by the governmental entities with responsibilities related to this inter-jurisdictional challenge. The Pembina River Basin Advisory Board, consisting of local leaders from North Dakota and Manitoba, requested that the International Red River Board (IRRB) help to solve the flooding issues being faced. The IRRB, (created under the authority of the International Joint Commission), developed a technical team to oversee the development of a model to analyze the current conditions as well as possible alternatives to reduce flood damage.

The modeling report, entitled "Simulation of Flood Scenarios on the Lower Pembina River Flood Plains with the Telemac2D Hydrodynamic Model-Phase 3" by National Research Council Canada and a report by the Lower Pembina River Flooding Task Team were finalized in the fall of 2012. Several proposed alternatives were analyzed.

In addition, the Governor of North Dakota and the Premier of Manitoba have organized the Pembina River Basin Task Team, with membership from North Dakota, Manitoba, and the IRRB. This effort is designed to review data and output from models in order to develop recommendations for a mutually agreeable solution for all concerned parties. Along with reviewing the possible alternatives described in the previous reports, additional information is being collected. A final report on this effort is expected in 2014 or early 2015.

MISSOURI RIVER MANAGEMENT

With a basin that covers all or portions of ten states and two Canadian provinces, the Missouri River stretches 2,540 miles from central Montana, to its confluence with the Mississippi River, making it the longest river in the United States. Along with the sheer magnitude of this river system in terms of size, comes a multitude of complex management issues, such as competition between water users, federal access restrictions, loss of habitat, endangered species protection, bank erosion, and delta formation, just to name a few.

Six dams and reservoir projects make up the Missouri River reservoir system. Each of the projects were constructed by the federal government and are operated and maintained by the U.S. Army Corps of Engineers for the purposes of flood control, water supply, recreation, irrigation, hydropower, water quality, fish and wildlife habitat, and navigation. Harnessing the Missouri River has brought substantial economic, environmental, and social benefits to North Dakota and the other states.

For decades, the State of North Dakota has worked diligently to protect and develop its interest in the Missouri River, while recognizing that our state makes up only a portion of the basin as a whole. North Dakota has supported cooperative basin-wide efforts, such as those by the Missouri River Association of States and Tribes and the Missouri River Recovery Implementation Committee, that strive to balance the varied interests. At the same time, North Dakota will continue to affirm that the state will utilize the Missouri River for the beneficial use of its citizens.

Locally, the state has supported grassroots efforts to improve management of Missouri River basin natural resources, including those pursued by the Missouri River Joint Water Resource Board. Other efforts that promote the benefits, uses, and future potential of the Missouri River system, such as those pursued by the Friends of Lake Sakakawea, and the Voices for Lake Oahe, are also supported.

Most recently, a potentially new Missouri River stakeholder group is in the process of being formed.

A coordinator has been hired to move the process forward, and it is jointly funded by the Garrison Diversion Conservancy District, and the State Water Commission. The coordinator will work with various Missouri River stakeholders to identify issues important to them, to gage stakeholder interest in the development of some type of formal group, and to plan a Missouri River working conference for stakeholders to discuss issues and a potential path forward for a more formal group.

In recent years, North Dakota has again been challenged by the U.S. Army Corps of Engineers on its rights to Missouri River water. In 2010, the Corps placed a moratorium on issuing new real estate permits, which essentially blocked any new industrial water intakes around Lake Sakakawea. Their proposed solution to issuing real estate leases was to charge North Dakota water users for the use of “Surplus Water” stored behind Garrison Dam. The Corps has not yet charged any users, and in February 2013 lifted the moratorium, but has not been forthcoming with the issuance of easements and access.

The Missouri River is the state’s most valuable and readily available water source, and it is needed for a broad spectrum of beneficial uses, such as irrigation, drinking water supplies, and industry. The State of North Dakota owns the natural flows of the Missouri River, into and through Lake Sakakawea and Oahe. Historic, pre-Garrison Dam flows of the Missouri River near Williston are approximately 17.6 million acre-feet annually. Only 570,000 acre-feet were permitted by the state for beneficial uses in 2010. Approximately 81% of the permitted usage of water is used for power generation and returned to the river. By evaluating the inflows and permitted water usage for beneficial use, it is clear that the people of North Dakota use only a small portion of water that flows through the Missouri River. Thus, North Dakota’s Missouri River water users do not rely on water stored behind the dams.

Areas along the Missouri River in Bismarck are still involved in flood recovery projects in response to the flooding that took place in 2011. These efforts are expected to continue in years to come.

MOUSE RIVER FLOOD 2011

The Mouse River, or the Souris River as it is known in Canada, originates in southeast Saskatchewan near the city of Wayburn. From there, the Mouse river meanders into North Dakota near Sherwood, through Minot, to its southernmost point at Velva, North Dakota. From Velva, the Mouse turns back to the north and into Manitoba.

The Mouse River basin drains nearly 23,600 square miles and has a long history of flooding. Some of the biggest floods on record happened in 1969, 1976, and 2011. The Mouse River flood of 2011 has been the biggest flood event in recorded history by far (Figure 22).

The meteorological conditions that contributed to the 2011 Mouse River flood were extremely unusual. In order to comprehend the chain of weather events that set the flooding in motion, it is necessary to look back on the 2010 growing season. The entire Mouse River basin received above-normal precipitation from April through September. In North Dakota, 150-200 percent of normal precipitation was commonplace along the Mouse River. According to Environment Canada, the spring of 2010 was southern Saskatchewan's wettest on record. As the growing season came to an end, unbelievable amounts of precipitation had fallen over the basin. Regina, Saskatchewan, just north of where the river originates, received a record 20.35 inches of precipitation between April and September.

Mouse River Historic Crests At Minot

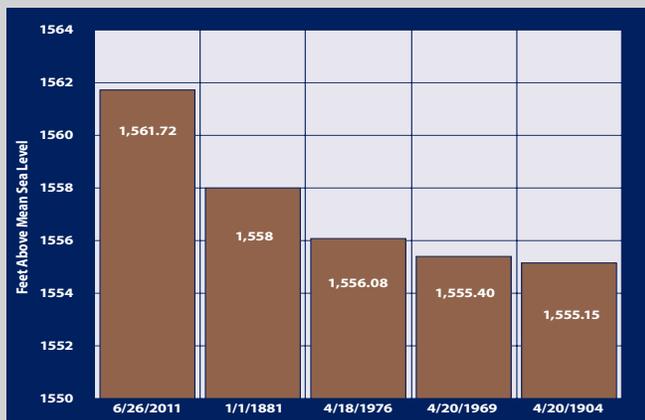


Figure 22. Mouse River historic crests at Minot.

Following the extremely wet growing season of 2010, North Dakota and Saskatchewan were bombarded with additional moisture in the form of heavy rain and snow before the ground froze in mid-November. Environment Canada reported that November 2010 was the snowiest on record for Regina, and that nearly two-thirds of the city's average annual precipitation was received in snowfall in October and November alone. Farther south at the Minot Experimental Station, similar conditions were reported. The stations snowfall through December 3 had already reached 24.3 inches, just 15 inches under the July 1 through June 30 seasonal average.

The winter months in the Mouse River basin continued to be snowier than average, with below-average temperatures. These conditions raised considerable concerns for spring flooding. According to the March 1, 2011 Snow Water Equivalent Map, a widespread six to eight inches of water was already in place over the frozen saturated soils before snowmelt even began.

Then, in early May, heavy rains began to fall. These rains consumed reservoir storage and set a new May 1 through June 30 record rainfall total for Estevan, Saskatchewan. Canada's "The Weather Network" reported that Estevan had received 12.76 inches of rain between May 1 and June 21. The average annual rainfall for Estevan is 13.11 inches, making it apparent that this was yet another unprecedented period of weather leading up to a large-scale flood. Looking farther downstream at North Dakota's rainfall, 9 to 11 inches of rain were recorded from May 1 through June 30, 2011.

During the time that the region was receiving so much precipitation in the form of rain during the spring of 2011, there were already signs of flooding, and actions were being taken throughout the region to mitigate for the flooding. Levees were being built and raised, critical infrastructure such as schools and lift stations were being diked, and every road in Minot, except for Broadway and 3rd, and the Highway 83 bypass from North Hill to South Hill was closed. This meant that there was a two and a half, to four-hour wait to get anywhere in town.

Despite all of the preparations, the volume of water that was filling up the Mouse River valley proved too enormous for the communities to defend against. It was obvious that homes, businesses, and infrastructure was going to be affected to varying degrees along the Mouse River.

Minot's two major dikes protected some 600 homes, a half dozen churches, several businesses, Trinity Nursing Home, two elementary schools, and two major roads. While the dikes in Minot protected some homes, businesses, and infrastructure, most of the valley was not so lucky. Mouse River Park in Renville County was under water, the bridges in Logan and Sawyer were washed out, the bridge in Velva was lost for a period of time, and the Burlington Bridge on Colton Avenue was closed with 20-plus houses under water. In Minot, of the 13 lift stations protected by ring dikes, all but one was inundated, all of Oak Park Shopping Center and Arrowhead Shopping Center were severely damaged, as were many other businesses in the valley. The North Dakota State Fair was cancelled. However, the most devastating losses were the 4,200 Minot homes that were damaged or lost in the flood. While most were salvageable, 805 homes were damaged beyond repair and were ultimately demolished. Damages were estimated to be \$1.3 billion dollars.

It was not only houses, businesses, and municipal works that were damaged. Agricultural damage from flooding was tremendous. There was damage to bridges, rural roads, riverbank erosion, and an entire floodplain that was full of trash, logs, and other debris that needed to be cleaned up.

Today, houses have been removed, repaired, or replaced. Businesses have rebuilt, and to the layperson, the region seems to be back to where it was pre-flood in 2011. However, flood recovery efforts are ongoing and will be well into the future.

Since the floodwaters receded and cleanup began, a multi-disciplinary team of professionals have been working together to create a comprehensive flood protection plan for the Mouse River. This plan is

called the Mouse River Enhanced Flood Protection Plan. Municipalities, county water resource districts, engineering firms, the State Water Commission, and the Corps of Engineers have been working together in an effort to figure out what the most useful and cost effective flood mitigation options will be.

For these efforts, the State Water Commission has funded three studies for the Mouse River Enhanced Flood Protection Plan. One concerned hydrologic and hydraulic modeling of the Mouse River, another study outlined and evaluated rural flood risk reduction, and the third focused on erosion and sedimentation that occurs during high flows of the Mouse. Plans have also been made for enhanced flood protection around municipalities.

Currently, stakeholders are still working closely with one another, and it is expected that the process will continue well into the future to provide the Mouse River valley with adequate permanent flood protection.

OIL AND GAS WATER USE NEEDS

Hydraulic fracturing for oil or gas, commonly called "fracking," is a process where water and other materials are injected into oil-bearing formations of rock under high pressure, fracturing the rock, and releasing the oil.

North Dakota has proven to have substantial deposits of oil-bearing rock suitable for fracking in two formations - the Bakken and the Three Forks. Because the drilling process requires a fair amount of water to fracture the oil-bearing rock, both surface water and ground water sources have been used. Where ground water has been used, it has generally come from freshwater aquifers within two thousand feet of the surface. The Appropriations Division of the Office of the State Engineer manages that water.

Oil wells of this type in North Dakota (Figure 23) generally require approximately eleven acre-feet of fresh water for the drilling and hydraulic fracturing process, necessitating access to reliable water supplies. The effectiveness of fracking has allowed

North Dakota to become the second largest oil producing state in the United States, with a recent estimate of 7.4 billion barrels of recoverable oil reserves.

As the technology for fracking has matured, it has become apparent that a small amount of water will need to be injected into producing oil wells in order to keep the wells producing at an acceptable level. On average, it is estimated that it will take about the same amount of water to maintain production over the life of an oil well, that it took to frack that well in the first place.

The preferred source for water used in the fracking process is the Missouri River, which runs through the heart of where oil extraction is occurring. The Missouri River system is an extremely valuable source of water, both in terms of quality and quantity. However, federal restrictions to access to

Missouri River water within the boundaries of the mainstem reservoirs has provoked water users to seek other sources.

The water being used in the fracking process represents a very small proportion of water available in North Dakota. The 19,686 acre-feet of water used for fracking in 2013 represents about 5% of total consumptive water use in the state, or less than five days of evaporation from Lake Sakakawea.

RED RIVER FLOOD MITIGATION

The Red River basin covers the eastern portion of North Dakota, the northwest portion of Minnesota, a small area in the northeast corner of South Dakota, and in Manitoba, from the international border to Lake Winnipeg. The geography is categorized by an ancient lake bed which gives the region its generally flat topography. The Red River flows north to the Hudson Bay in Canada.

North Dakota Oil Well Locations

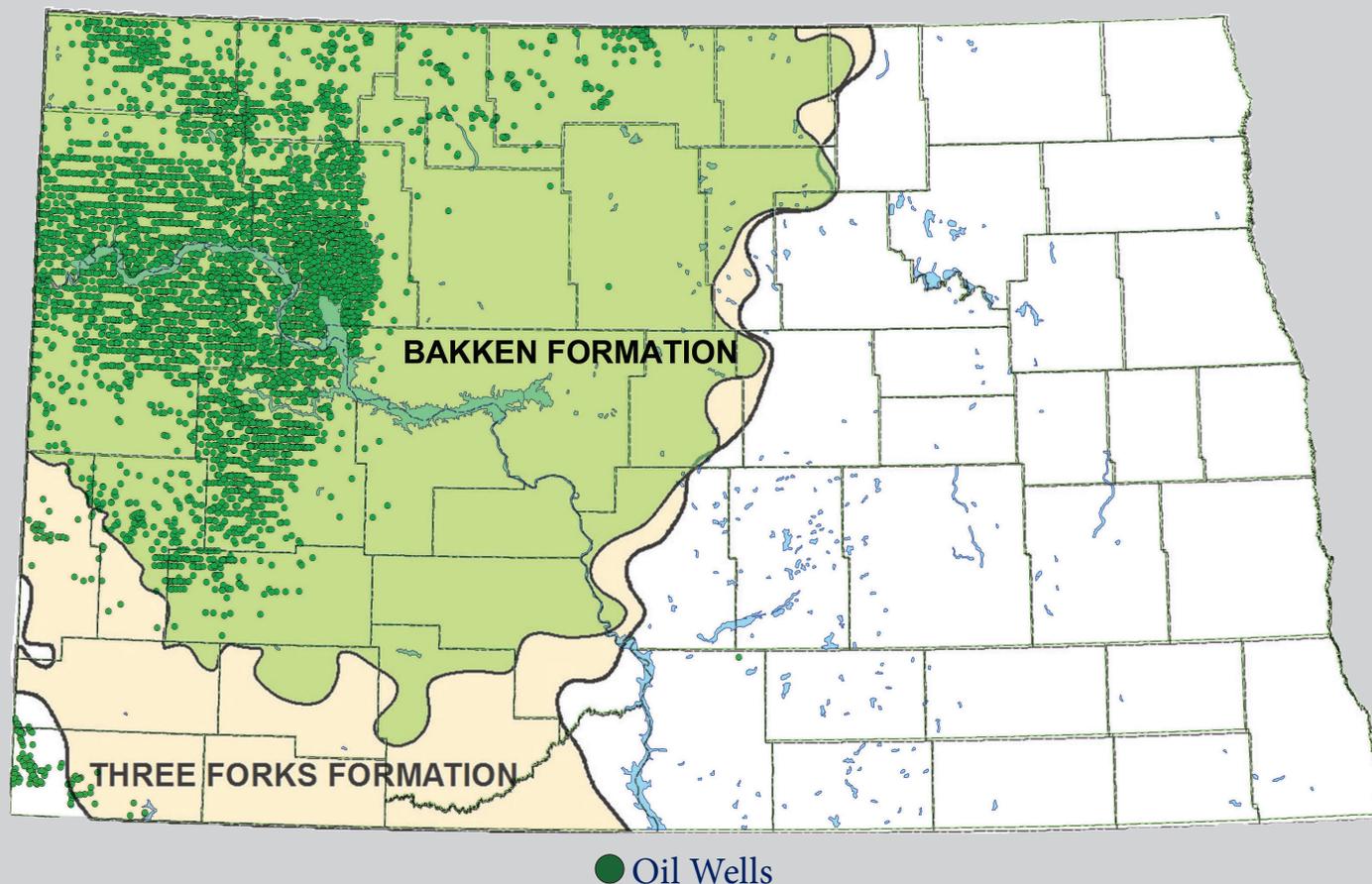


Figure 23. The location of the 7,471 oil wells in North Dakota drilled between 2007 and July 1, 2013. Not all drilled wells end up producing oil.

The Red River basin is well known for its fertile, high-value farmland, which supports a strong agricultural production industry. Fargo, the largest city in North Dakota, is situated in the central portion of the basin at the crossroads of I-94 and I-29, along the border with Minnesota. Fargo is a major commerce hub, as well as Grand Forks and Wahpeton, North Dakota. Moorhead, East Grand Forks, and Breckenridge are major towns along the Red River in Minnesota. A significant portion of North Dakota’s population lives in the narrow stretch of land between I-29 and the Red River.

A History of Flooding

The Red River Basin is characterized by periodic and serious flooding (Figure 24). Depending on the year, flooding can be local or widespread. Local flooding can take place in rural areas along tributaries of the Red River, causing damage to cropland, farmsteads, and small towns situated along tributaries. It also causes economic hardship to farmers when floodwaters delay the planting of

crops. In years with heavy snowpack, depending on the spring melt conditions, widespread flooding can occur. Because of the flat topography, floodwaters can spread and threaten every city and town on the bed of what used to be Glacial Lake Agassiz.

For the past 21 years, North Dakota has been in a wet cycle, and the Red River basin has had more frequent occurrences of major flooding. In 1997, cities throughout the basin experienced major flooding. Grand Forks, ND and East Grand Forks, MN experienced the worst of the flooding, which destroyed large sections of the two cities. After that flood, the U.S. Army Corps of Engineers built a system of levees to help protect the communities from future flooding in the footprint of structures that had been destroyed by the flood. Fargo has been threatened by major flood events since 1997, including most recently in 2009 and 2011. But Fargo has been able to wage large scale and expensive food fights to protect the city. Wahpeton, ND and Breckenridge, MN have traditionally encountered

Top Ten Red River Floods At Fargo

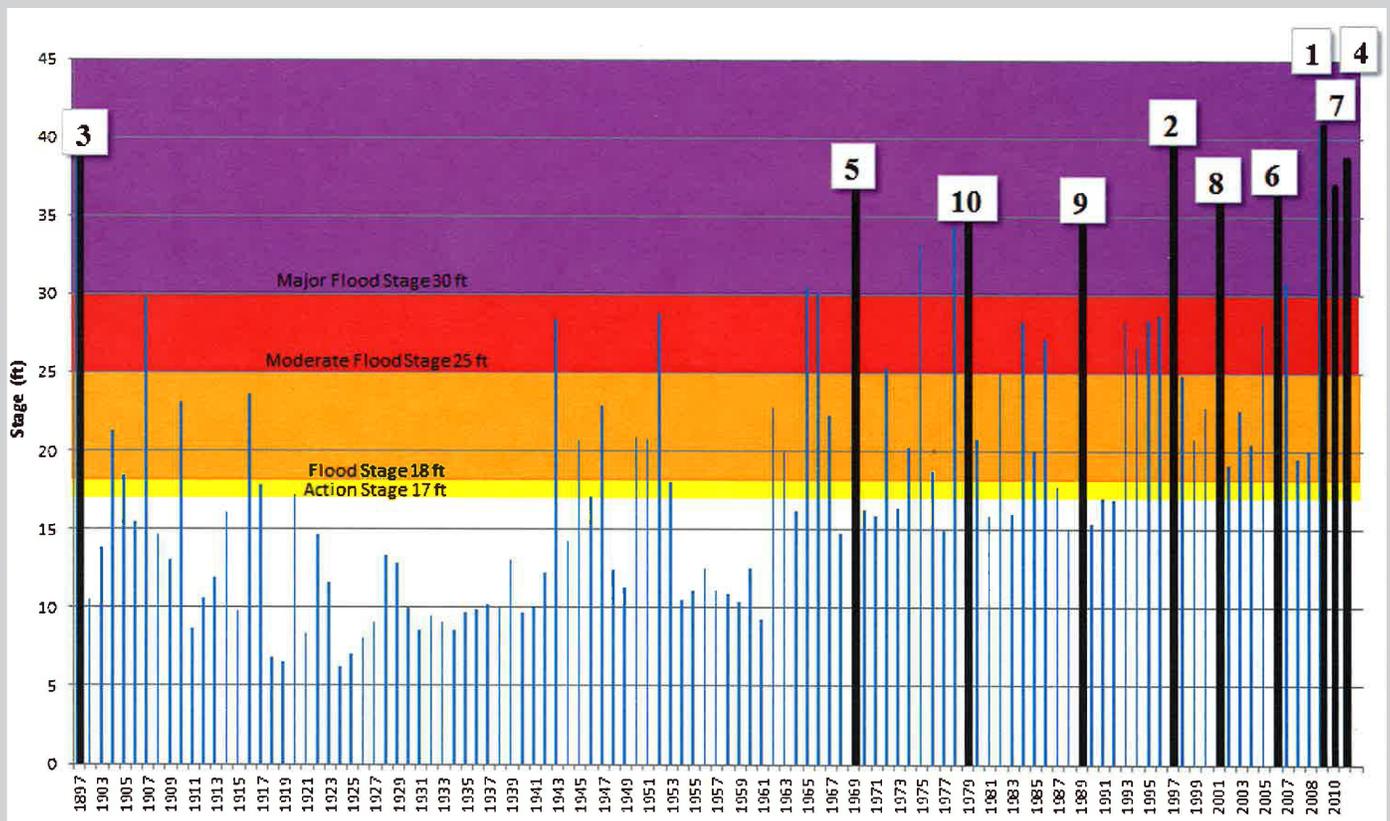


Figure 24. The top ten Red River floods at Fargo. Five of the top ten Red River floods have occurred since 2001.



flooding problems by the Red River. These communities were also severely flooded in 1997, and have since pursued and developed permanent flood protection.

Flood Damage Reduction

To combat the “Disaster-Relief-Repair-Disaster” cycle that the Red River basin has historically experienced, a multi-faceted approach has been taken to help reduce flooding impacts within the region. The work is continual, and will take many years to fully implement. The strategy takes a basin-wide approach and includes, structural and non-structural methods of flood mitigation.

Floodplain Management has been the main focus for land use practices for most of the last century. Floodplain management focuses on the avoidance of building new structures within the 100-year floodplain. This allows the regulation of human actions, rather than the regulation of humans. It requires planning on how to best develop, build, or redevelop relative to the flood hazard.

In areas of dense development, such as those that were developed adjacent to rivers, municipalities have, and are currently using buyouts in order to provide structural flood protection such as levees. Levees have been used successfully in portions of, or entire communities throughout the Red River basin to hold back floodwaters. Levees do have their drawback though; they can be intrusive, and they require a lot of maintenance and monitoring, and they run the risk of being overtopped or breached by floodwaters that exceed the design parameters of the structure.

An ongoing project in the Red River basin is the Fargo-Moorhead area diversion. This project is being led by the U.S. Army Corps of Engineers. The Red River Diversion is intended to reduce floodwaters that run through the Red between Fargo and Moorhead. To do this, floodwater staging upstream from the diversion must be approved and acquired. Further, a diversion channel is being planned that would run excessive flows around the communities and deposit the water back into the main channel further north. There are some challenges associated with this, including environmental concerns, routing, cooperation between the States of North Dakota and Minnesota, funding, and providing appropriate flood protection that would not further impact areas both to the north and south of Fargo-Moorhead.

Red River Valley Retention

The Red River Basin Commission and the Red River Retention Authority have identified floodwater retention (retention) as an important element in easing flood impacts during high water flows within the Red River Valley. Retention can be defined as the temporary holding of water in an area upstream of the area protected. Retention generally will hold back water and temporarily flood an area, while offering flood relief to areas downstream. After a period of high flow has passed, water collected in the retention area is released downstream. In recent years, the Red River Basin Commission has set a goal for 20% reduction in flood flows for each tributary of the Red River.

Recently, the State Water Commission assisted in the funding of several studies to identify potential

areas where floodwater could be retained. A large number of potential areas have been identified through computer analysis of elevations produced with LiDAR data.

TELEMETRY PILOT STUDY



The city of Parshall’s water depot during the installation of their new telemetry system in February 2012. The old billing system of 53 clipboards are still hanging on the walls. The new telemetry system is at the far right of the picture.

In 2011, in response to legislative concerns about monitoring of water withdrawals in North Dakota, especially in the process of oil extraction, the Office of the State Engineer initiated a telemetry (remote, real-time data collection) pilot study at the request of Governor Dalrymple.

To address these concerns, the State Engineer took the following actions:

- An increase in the frequency of monitoring of meters by staff;
- A monthly report to be submitted by water permit holders;
- And the implementation of a pilot study, examining the feasibility of deploying telemetry at water depots.

The pilot study was divided into three phases. The first phase was research and review of existing technologies and monitoring regimes in comparable situations to avoid duplication of previous efforts, and making the process as cost effective and efficient as possible. The second phase tested the methods and feasibility of data transmission from field sites to the Office of the State Engineer using telemetry. This was potentially a large obstacle, with some regions of the state receiving sporadic or no cell phone coverage. The last phase was the installation of telemetry at four test sites, and subsequent analysis of those sites (Figure 25).

During the first phase, four possible methods of data transmission were investigated, with satellite and cell phone technologies determined to be the most effective and cost efficient.

In the second phase, sites with existing telemetry were analyzed. Only one site had existing telemetry at the beginning of the pilot study. Data communication effectiveness from that site was evaluated.

For the third phase, telemetry was installed in January 2012 at four water depots; Dodge Depot, Timber Creek, Trenton Depot, and Schaper Depot.

The end of the testing phase, which concluded in late 2012, resulted in several preliminary findings.

- Each telemetry vendor provides useful and convenient tools for analyzing data. However, all of that data is in a file format unique to that vendor. Conversion of that data into a format useful for the Office of the State Engineer would be time consuming and unmanageable for a greater number of depots than were included in the pilot study. While technology provided a manageable hurdle for telemetry, the greatest obstacles were on the data processing side, where no simple options existed to collect, process and interpret the large volumes of data that would result from telemetry for all water withdrawals.

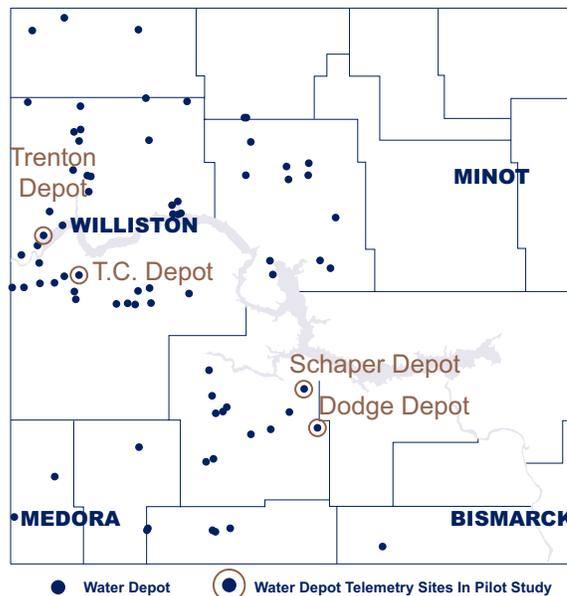
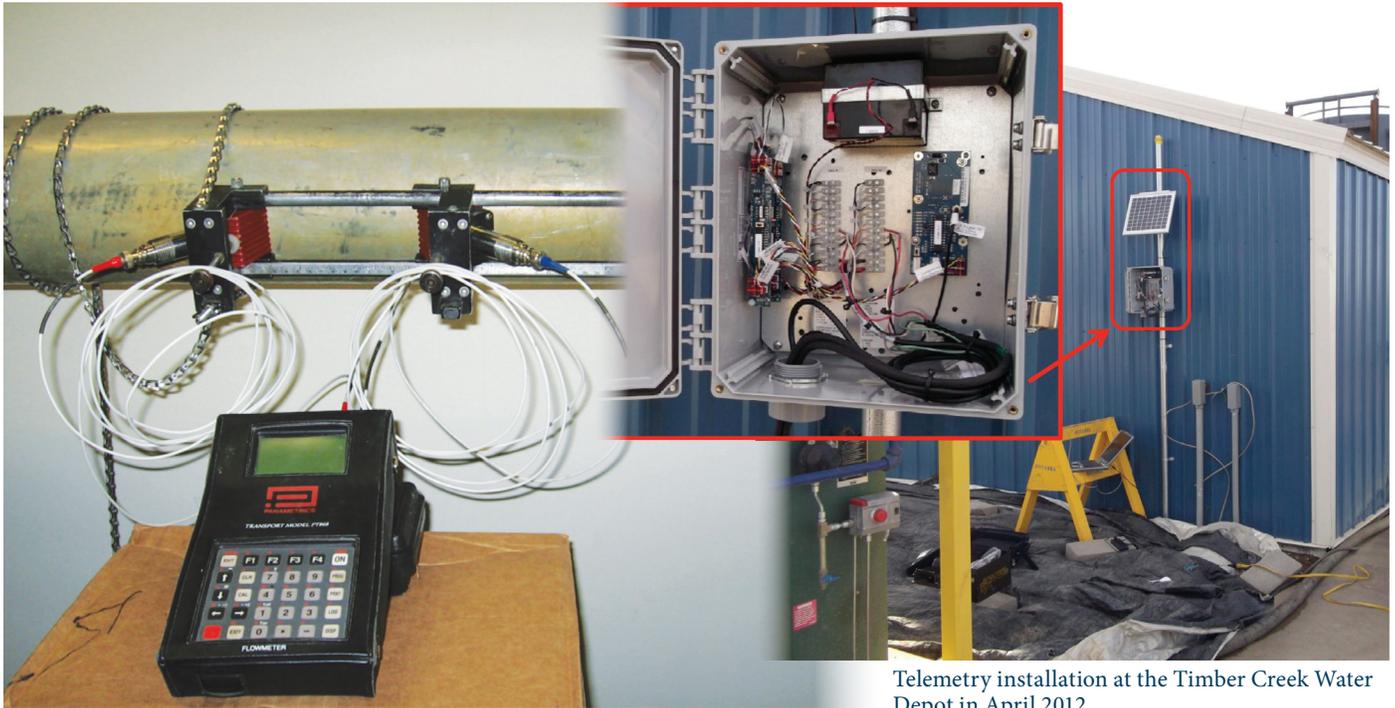


Figure 25. The location of the four telemetry sites during the pilot study in 2012.



Telemetry installation at the Timber Creek Water Depot in April 2012.

A Panametrics Ultrasonic Flow Meter - one of the devices used to measure water use.

- Any solution for statewide telemetry monitoring of water withdrawals will incur additional costs, ranging from \$1,000 to \$40,000 per site, and \$200 to \$500 in annual costs for communication and data storage services.

The completed Telemetry Pilot Study resulted in the following conclusions:

- a. One additional staff member to accommodate the increased workload will be needed in order to prevent long-term, cumulative impacts to the water resources of the state, with changes in the reporting interval at depots for water permits were determined to be sufficient, without the addition of telemetry.
- b. If telemetry is ultimately utilized, there are several alternatives.
 - i A comprehensive, completely state-controlled system, essentially creating a state-controlled supervisory control and data acquisition (SCADA) system for water depots.
 - ii A “pull” system, where the depot client chooses the telemetry vendor and associated technology from the wide variety and quality available, and the state

accesses that data periodically, resulting in what would likely be an extremely expensive and time consuming effort.

- iii A “push” system, which would result in the state mandating that water use permit holders follow consistent technologies, methodologies and data outputs, in order to facilitate rapid and accurate data analysis.
- c. That water supply depot water permit holders should pay the cost of any telemetry system, plus operations and maintenance.
- d. Even if telemetry is pursued, regular field inspections in order to verify telemetry accuracy will still be necessary.
- e. It is impossible to guarantee freedom from inaccuracies in the reporting of water withdrawals using telemetry. Further, the existence of telemetry data does not imply state responsibility, or liability for notification of water suppliers when they utilize the water resource beyond the permitted amount, or serve as justification for mitigation of penalties.

In addition to the telemetry pilot study, during the 2013 legislative session and during the 2014 interim

period, additional staff were approved for the Water Commission to handle the dramatic increase in water permit related workload.

WATER EDUCATION

During the 1984 public planning process, the State Water Commission identified the need to include water education as one of the agency's functions to help ensure that future generations become good stewards of the state's water resources. During the period of 1987 through 1992, the WET (Water Education for Teachers) program was developed and refined to offer a variety of hands on curriculum aimed at educating the public regarding the nature and occurrence of North Dakota's water resources.

Since 1993, WET became Project WET and expanded into an international supplemental and interdisciplinary water science education program for k-12 students and educators. The WET program that began here in North Dakota has now grown to having a Project WET program in every state in the U.S. and several other countries.

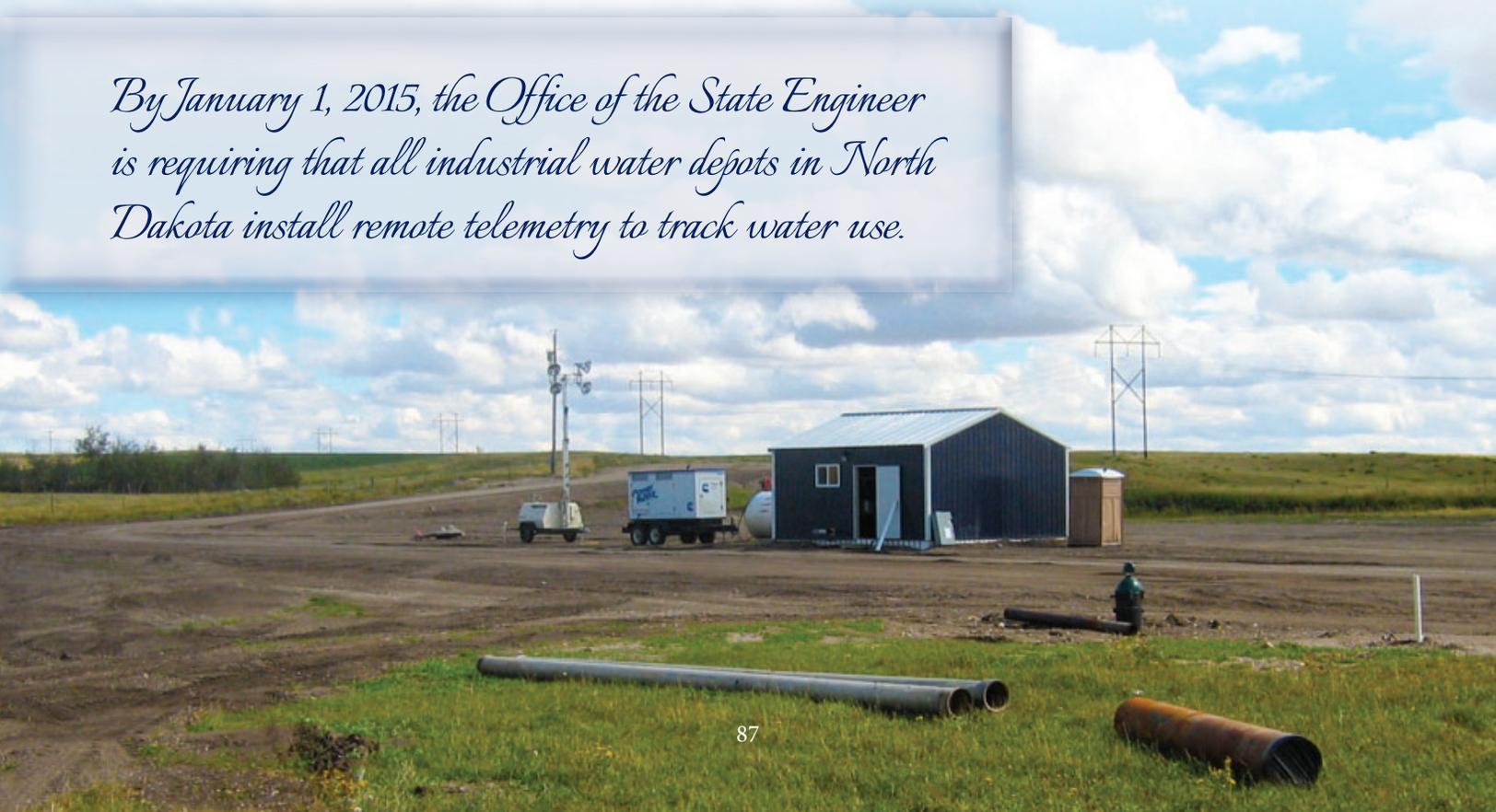
Today, North Dakota Project WET is know as the North Dakota Water Education Program. This program encompasses Project WET curriculum materials and educational resources in conjunction

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

North Dakota's K-12 students receive water education through classroom programs, water festivals hosted across the state, or by participating in other educational programs such as environmental awareness events, camps, and community programs. The Explore Your Watershed program provides adult educational programs through credited institutes, workshops, seminars, inservice sessions for teachers, facilitator training and university preservice programs.

North Dakota Water Education programs, resources, and materials address a wide range of issues and topics in many water-related disciplines, while considering the various learning styles of

By January 1, 2015, the Office of the State Engineer is requiring that all industrial water depots in North Dakota install remote telemetry to track water use.





adults and youth. These programs are designed to enhance and compliment North Dakota’s educational standards. All programs are self contained, easy to use, non-biased, and age appropriate to develop problem solving skills and understanding of today’s water issues.

Messages are transferred to youth through informed educators, natural resource professionals, and community leaders that have participated in a Project WET, Explore Your Watershed or other water resource programs offered in North Dakota.

Since 1993, North Dakota’s Water Education Program served approximately 179,000 youth and adults. In 2013-2014 the North Dakota Water Education Program increased the Make a Splash Water Festival programs from 7 festivals to 11 festivals to ensure that students across the state have an opportunity to participate in a water program. Make A Splash Water Festivals are now hosted in Williston, Dickinson, Bottineau, Minot, Grand Forks, Fargo, Wahpeton, Kathryn, Bismarck, Fort Totten, and Mandan.

The dramatic increase in the diversity and number of residents, the prominent occurrence of flooding and drought, and other water issues that have surfaced in the oil fields have been the driving force behind the need to expand water education programs across the state.

The North Dakota Water Education Program has embraced technology as another avenue to promote stewardship and best practices. Through the use of social media, webpages and promotion of Discoverwater.org, the program is able to have a greater impact. Using social media,

such as Facebook, and flicker, the public is able to be informed of upcoming events, meetings and educational opportunities in their area. The program is able to distribute education and informational materials and resources by posting them on the state webpage that is accessible to the public at any time. Both students and adults can learn basic water principles through a fun, interactive, educational program at Discoverwater.org.

As we continue to grow, North Dakota Water Education Program will explore different avenues to ensure the public has the opportunity to learn more about how water impacts their lives every day, and how to guarantee tomorrow’s generation access to clean and useable water.

WATER USE TECHNOLOGY INNOVATIONS

Horizontal Wells

Irrigation development in some areas has been limited due to thin saturated thickness and/or fine textured sediments resulting in very low yields per well. There are limits to the number of small wells that can practically be grouped closely together. Horizontal well technology, first introduced to the state in 2012, has proven to be a cost effective means of improving water supply yields in these types of areas. The technique uses large trenching equipment, similar to tiling equipment, capable of placing eight-inch, flexible, perforated plastic tubing at depths of a little over 20 feet. This restricts the use of the technology to areas with relatively shallow water tables. However, in test cases where 800 foot laterals were installed, yields of 800 gallons per minute resulted – making the practice worthwhile where appropriate.

Irrigators are also installing these wells in low areas to help control high water tables in parts of an irrigated field. There are larger machines capable of deeper depths, but this has not been considered cost effective for irrigation development so far.

Aquifer Recharge and Recovery (ARR)

In highly developed unconfined aquifers having sufficient drawdown and saturated thickness which are located within the proximity of rivers or streams, water can be captured from streams and stored in the aquifer for supplemental storage and use (Figure 26). ARR methods are particularly useful, because water can be captured during periods of high flow and stored for later use. Both Valley City during the 1930s, and Minot during the 1950s have used ARR in the past. Experimental ARR projects were operated during the late 1980s and early 1990s at Oakes, ND; and a successful ARR facility has been operated by the Forest River Hutterite Community to supply as much as 1,000 additional acre-feet per year for agricultural use.

ARR requires the presence of coarse aquifer materials to within a few feet of land surface to allow for adequate infiltration in an excavated basin. Water stored using ARR is available for short term use (usually about one to three years in North Dakota), but is usually lost to evaporation, returned to the stream through seepage, or transported beyond the area of use over extended periods.

Tile Drain Sub-Irrigation

Researchers in the Department of Agricultural Engineering at North Dakota State University have been investigating the feasibility and cost effectiveness of optimizing soil moisture and yields in agricultural fields using water-table controls on tile drains. This process involves supplementing water during dry periods through sub-irrigation, pumping ground water and distributing it through the tile drains.

Aquifer Recharge & Recovery Project

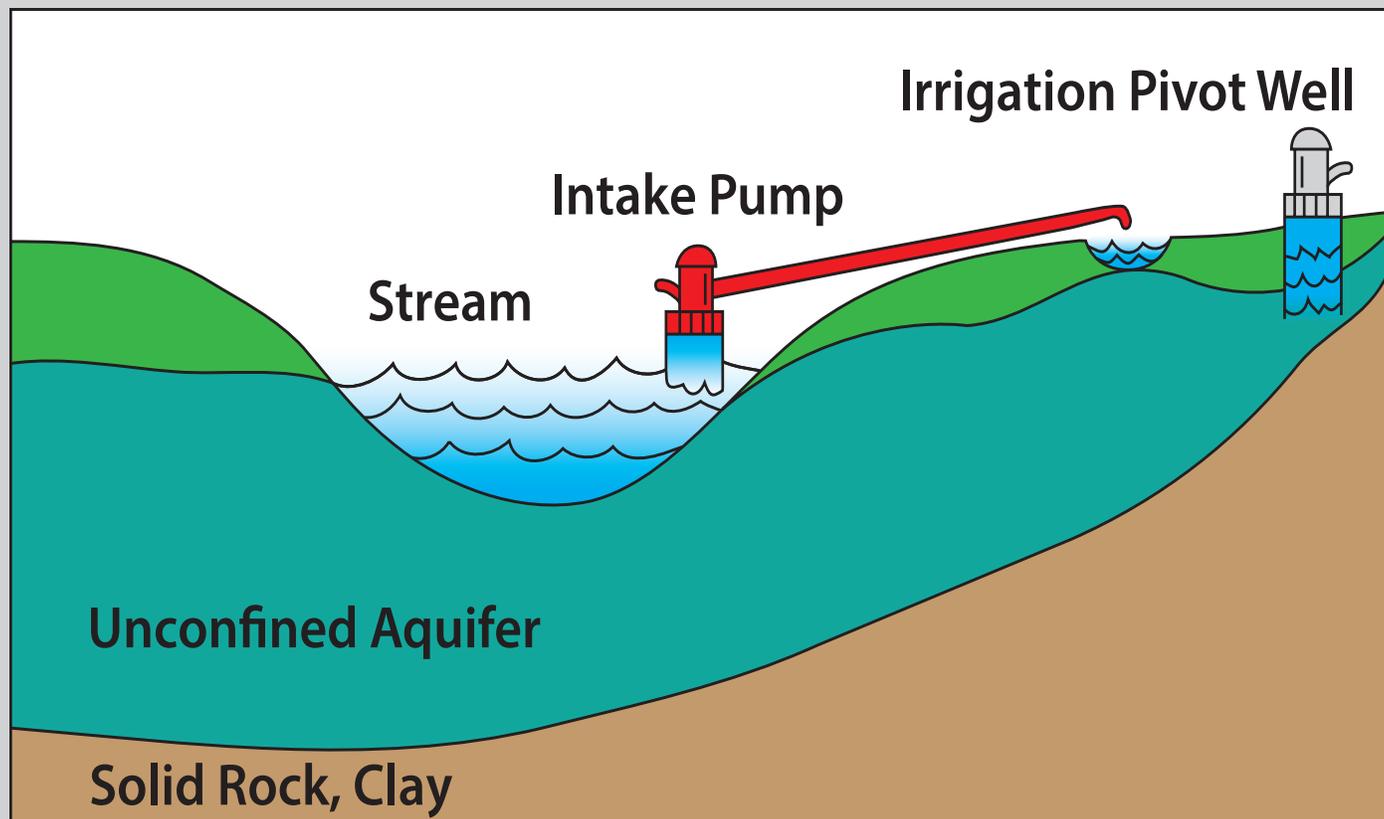


Figure 26. An example of an aquifer recharge and recovery project.

Goals & Objectives - Meeting Challenges

A number of water management and development challenges and issues were covered in the 2015 North Dakota Water Management Plan. In response, the following goals and objectives have been developed to help the state meet those challenges, and to more clearly define where North Dakota's long-term water management and development efforts will be directed in the future.

GOAL:

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

OBJECTIVES:

- Encourage efficient use of water by all users.
- Appropriate water resources in consideration of availability and impacts to exiting permit holders.
- Maintain comprehensive water rights records to ensure that appropriations are based on the best available information.
- Implement requirement of remote telemetry on all industrial water depots.

GOAL:

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

OBJECTIVES:

- Support development and advancement of large regional water supply systems, such as the Northwest Area Water Supply, the Southwest Pipeline Project, Western Area Water Supply, and a Red River Valley water supply.
- Assist communities and rural water associations in developing water supplies as deemed appropriate, per agency policies.
- Support the development of structural flood control projects in population centers, where appropriate.
- Support the development of ring dikes for farmstead protection.

- Support irrigation development in order to encourage growth and diversification in the agricultural industry.
- Develop water supply systems that provide sufficient quantities of Missouri River water to support North Dakota's existing and future municipal, rural, and industrial water demands.
- Develop small dams where appropriate to retain water for flood damage reduction and water supplies for beneficial uses.
- Protect North Dakota's right to Missouri River water, and to appropriate it for beneficial use.

GOAL:

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

OBJECTIVES:

- Permit beneficial water use in support of long-term sustainable use of available water resources.
- Encourage best land management practices.
- Coordinate with and assist other state agencies in the protection of water quality.
- Assist the ND Department of Health in monitoring water quality and wellhead protection.
- Encourage and implement a balance of structural and non-structural techniques to reduce flood damages.
- Ensure all cloud seeding projects are conducted in a scientifically sound and an environmentally safe manner.

Goals & Objectives - Meeting Challenges

- Encourage and assist with the development of a comprehensive state drought mitigation plan.
- Maintain channel flow capacity of rivers and streams.
- Support bank stabilization efforts on public lands.
- Coordinate with federal, state, and local entities to reduce high sediment loads on the Missouri River and other river systems.
- Encourage the recognition of downstream environmental and economic impacts of flooding through more comprehensive floodplain management planning.
- Encourage the consideration of water quality in floodplain management and emergency planning.
- Assist communities with technical evaluations of floodplains for potential future development.
- Improve coordination and communication between state agencies and local entities to improve management of rural flood control issues.
- Coordinate the development of new Digital Flood Insurance Rate Maps (DFIRMS).
- Continue to develop, implement, and maintain a comprehensive State Water Management Plan and database.
- Continue to collaborate to resolve interstate and international water management issues involving the Missouri, Red, and Mouse River basins and Devils Lake.
- Encourage and assist the owners of dams to develop Emergency Action Plans (EAPs) for dams classified as high or median significant hazard dams.
- Promote dam safety by supporting, assisting, and funding dam repairs, restorations and/or demolitions where necessary to return dams to a state of being safe from failure, damage, error or accident.

GOAL:

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

OBJECTIVES:

- Continue support of the Water Education for Teachers (WET) program.
- Continue public information and education efforts regarding our atmosphere and how it works, and the capabilities and limitations of cloud seeding.
- Continue public information and education regarding the use, management, and characteristics of North Dakota's water resources through publications, public events and outreach, and the Internet.
- Enhance public information and education programs on floodplain management.
- Improve training opportunities for floodplain managers.
- Encourage and educate water managers and the general public regarding the reuse, reclamation, and conservation of water.
- Improve public information and education efforts regarding sovereign lands of the state, with particular emphasis on littering, off-road vehicle use, and mineral rights.
- Support efforts that improve water managers' and general publics' understanding of drainage techniques, scope, and impacts.

Goals & Objectives - Meeting Challenges

GOAL:

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

OBJECTIVES:

- Evaluate the quality and quantity of surface and ground water resources and provide public inventories of water availability.
- Continue and improve the statewide observation well network used to gather water level and water quality data.
- Continue automated tracking of water use for oil extraction, through state-of-the-art data collection efforts.
- Ensure that adequate records are kept of all cloud seeding operations.
- Continue and improve the statewide growing season and snowfall precipitation reporting network.
- Continue the dissemination of project weather radar and precipitation data, via the Internet.
- Maintain and improve the existing precipitation monitoring network to aid in flood forecasting.
- Continue to implement the Commission's Web-based Map Service.
- Continue to provide and improve the Water Commission's web-based Water Resources Information Management Systems.
- Maintain or enlarge the state's existing stream gage system, particularly in areas subject to overland flooding and around smaller streams, in cooperation with the U.S. Geological Survey.
- Support research to determine how, when, and at what rates water can be applied to various soil types and crops to optimize long-term, cost-effective, and efficient use of water.

GOAL:

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

OBJECTIVES:

- Conduct studies of the nature and occurrence of water to optimize its sustainable use throughout the state.
- Evaluate the impacts of cloud seeding on precipitation patterns and the environment.
- Conduct basic storm research in cooperation with universities and federal agencies.

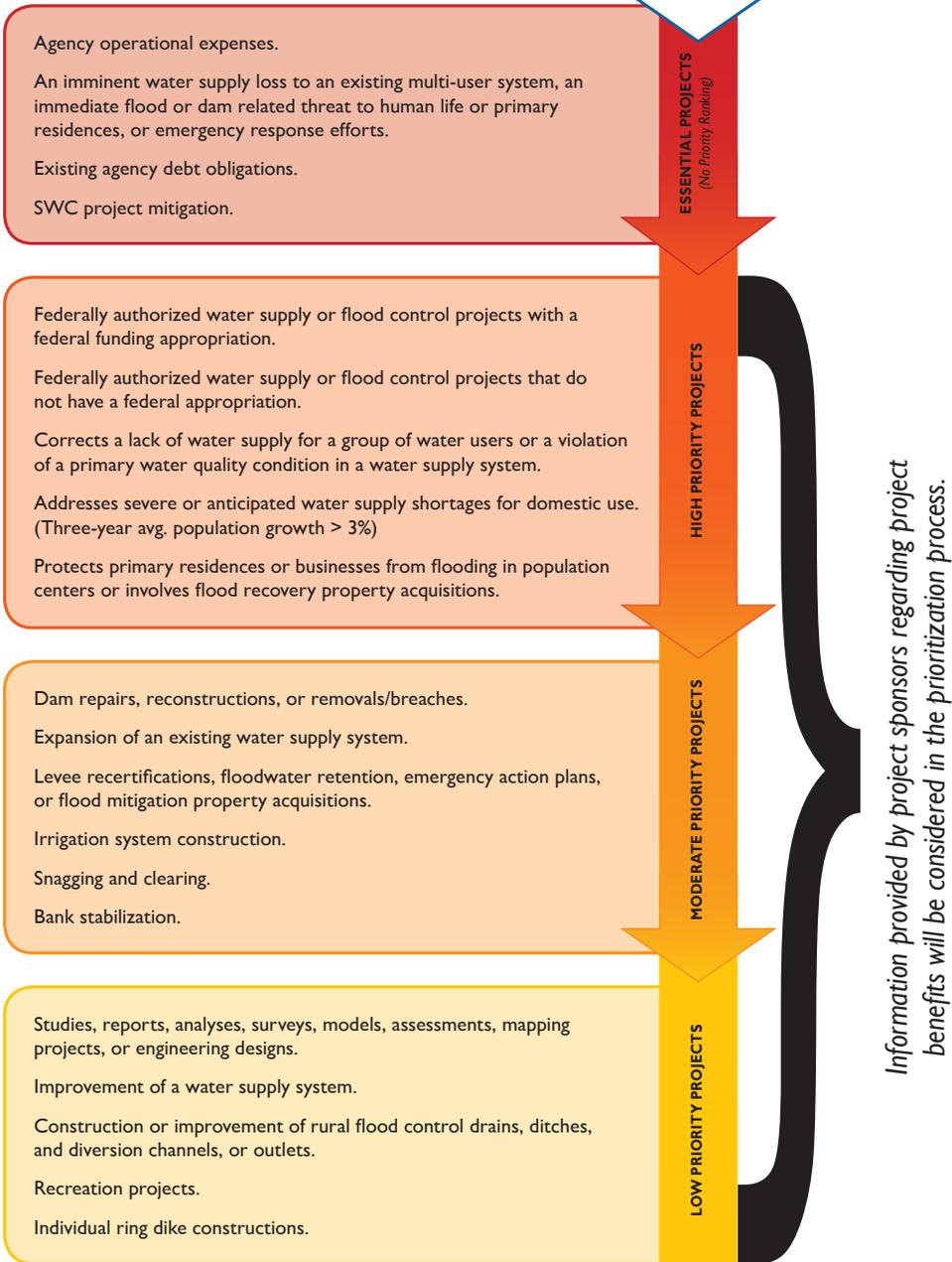


ND State Water Commission Drill Rig

Appendix

SWC WATER PROJECT PRIORITIZATION GUIDANCE CONCEPT

Projects submitted during the project planning inventory process¹ that meet SWC cost-share eligibility requirements will be considered for prioritization. Projects that do not meet local cost-share match requirements, (per SWC cost-share policies), will be dropped to the next lowest priority category. Ineligible projects will be diverted toward alternative funding sources.



Footnotes

1. All local sponsors are encouraged to submit project and study financial needs during the budgeting process. Projects and studies 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.

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.

State Water Commission Cost Share Policy Summary

Effective October 1, 2014

Cost-Share Policy Outline	Description	Prelim Eng	Design Eng	Const Eng	Construction
I. Definitions and Eligibility	Cost-Share defined as a grant or a loan. Engineer services defined relating to pre-construction and construction. Programs defined as typically associated with federal initiatives.	Provides overall guidance and consistency with cost-share			
II. Cost-Share Application and Approval Procedures	Cost-share exceeding \$100M, additional information requested by the State Water Commission will be used to determine cost-share.	\$100,000,000			
III. Cost-Share Categories					
A. Pre-Construction Expenses	Development of feasibility studies, mapping, and engineering designs.	up to 35%	NA		
B. Water Supply Projects					
1. Water Supply Project - Uses state funding - loan funding for all categories, allows combination of grant and loan up to 80%	Addresses upgrades of water supply to SDWA primary standards or expansion into new service areas.	up to 35%	Total up to 80% with up to 60% grant, up to 75% grant in special cases		
	Improvements and expansions of a system serving an area with 3-year average population growth in excess of 3% per year, as determined by the Chief Engineer	up to 35%	Total up to 80% with up to 60% grants.		
	Water treatment improvements that address impacts from other State Water Commission projects. Grant based on level of impact by the State Water Commission project.	Primarily Devils Lake Impacts			
	Provides special consideration for improvements in service areas where the anticipated cost per user divided by the average annual median income per user is in the top quartile of its peer group water systems (large city, small city, and regional) as determined by the Chief Engineer.	up to 80% loans			
	Addresses extraordinary repairs or replacement needs of a water supply system due to damages from a recent natural disaster.	up to 80% loans			
2. MR&I Water Supply Program	Federal Funding - no changes - preliminary engineering not funded	up to 75%			
3. Drought Disaster Livestock Water Supply Project Assist.	Program uses state funding in support of a federal initiative, program is defined in Administrative Code.	Program mentioned in policy, implemented during droughts			
C. Flood Control Projects					
1. Flood Recovery Property Acquisition Grant Program	Flood damage has occurred. Property needed for construction of flood protection.	up to 75%			
	Flood damage has occurred. Property needed for conveyance.	up to 60%			
2. Flood Protection Program	Provide long term flood reduction benefits. (Needed for preventing future damage) SWC may lend portion of local share based on demonstrated financial need.	up to 35%	up to 60%		
	Provide long term flood reduction benefits with Federal participation (Needed for preventing future damage.) SWC may lend portion of local share based on demonstrated financial need.	up to 35%	up to 50%		
3. FEMA Levee System Accreditation Program	FEMA requirement to accredit the levee system for flood insurance mapping purposes.	up to 60%	N/A		
4. Dam Safety and Emergency Action Plans (EAP)	Addresses dam safety issues. SWC may lend portion of local share based on demonstrated financial need.	up to 35%	up to 75%		
	EAP for high or medium/significant hazard dam. Dam break model only on high hazard.	up to 80%			
5. Water Retention Projects	No Federal participation. Includes property purchase.	up to 35%	up to 60%		
	Federal participation. Includes property purchase.	up to 35%	up to 50%		
6. Snagging and Clearing Projects	Snagging and clearing on watercourses.	up to 35%	up to 50%		
D. Rural Flood Control Projects					
1. Drains, Channels, or Diversion Projects	Cost-share for drains, channels, or diversion projects.	up to 35%	up to 45%		
2. Individual Ring Dike Program	Cost-share up to \$40,000, combined NRCS & SWC funding capped at 80% of eligible costs.	up to 35%	up to 60%		
E. Recreation	Water based recreation, typically associated with dams.	up to 35%	up to 40%		
F. Irrigation	Costs associated with principal supply works.	up to 35%	up to 50%		
G. Bank Stabilization	Protects public infrastructure or facilities.	up to 35%	up to 50%		

NORTH DAKOTA STATE WATER COMMISSION

COST-SHARE 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 cost-share funding from the agency's appropriated funds are consistent with the public interest. The State Water Commission values and relies on local sponsors and their participation to 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 AND ELIGIBILITY

- A. CONSTRUCTION COSTS** include earthwork, concrete, mobilization and demobilization, dewatering, materials, seeding, rip-rap, 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, 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** is grant or loan funds provided through the State Water Commission.
- C. 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 project inspection. Administrative services and support services performed and charged by engineering companies are not engineering services. Engineering services are eligible costs if incurred after State Water Commission approval. If cost-share is expected to be greater than \$25,000, the local sponsor must follow the engineering selection process in NDCC 54-44.7 and provide a copy of the selection committee report to the Chief Engineer. The

Effective October 1, 2014

local sponsor will be considered to have complied with this requirement if they have completed this 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.

- D. IMPROVEMENTS** are construction related projects that upgrade a facility to provide increased efficiency or capacity. Improvements do not include any activities that are maintenance, replacement, or reconstruction.

- E. INELIGIBLE ITEMS** excluded from cost-share include:
 - 1 Administrative, easement, and permit related costs;
 - 2 Property acquisitions, property surveys, and legal expenses 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, maintenance, replacement, and reconstruction 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.

- F. EXPANSIONS** are construction related projects that increase the project area or users served. Expansions do not include maintenance, replacement, or reconstruction activities.

- G. 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.

- H. MAINTENANCE COSTS** include repairs, deferred repairs, and general upkeep of facilities to allow facilities to continue proper operation and function.

- I. PROGRAM** is a subcategory of cost-share that is typically associated with a federal initiative and may cover all phases of a study or implementation of a project.

- J. PROJECT** is the water-related construction activity.

- K. REPLACEMENT AND RECONSTRUCTION COSTS** include the removal of portions of facilities or components that have completed their useful life and substitution with different components to obtain the same or similar function of the original facilities or components.

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- 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.

II. COST-SHARE APPLICATION AND APPROVAL PROCEDURES. The State Water Commission will not consider any cost-share applications for water related projects or studies 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 30 days before a State Water Commission meeting will not be considered at that meeting and will be held for consideration at a future meeting. The application form is maintained and updated by the Chief Engineer and must include the following:

- 1 Category of cost-share activity
- 2 Location of the proposed project or study area
- 3 Description, purpose, goal, objective, narrative of the proposed activities
- 4 Delineation of costs
- 5 Potential federal, other state, or other North Dakota state entity participation
- 6 Engineering plans, if applicable
- 7 Status of required permitting
- 8 Potential territorial service area conflicts or service area agreements, if applicable
- 9 Sustainable operation, maintenance, and replacement plan for projects
- 10 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. All local sponsors are encouraged to submit project and study financial needs during the budgeting process. Projects and studies 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.

- 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

Effective October 1, 2014

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

- 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 and budget priorities.

The Chief Engineer is authorized to approve cost-share up to \$75,000 in state funds and also approve cost overruns up to \$75,000 in state funds without State Water Commission action.

- D. NOTICE.** The Chief Engineer will give 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 will be entered 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

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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.

- 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.

III. COST-SHARE CATEGORIES. The State Water Commission supports the following categories of projects and studies for cost-share. Generally, engineering expenses are cost-shared as follows: Pre-construction expenses and pre-construction engineering approved by the State Water Commission are cost-shared up to 35 percent. 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 including:

- 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 **WATER SUPPLY PROJECT.** The State Water Commission supports water supply efforts and will use a grant and loan program. The local sponsor may apply for water supply funding, and the application will be reviewed to

Effective October 1, 2014

determine project priority. Projects will be prioritized within categories (1) thru (5) below. Projects within category (1) may be considered for grant funding up to 60 percent cost-share or in special cases up to 75 percent of cost-share and projects in category (2) may be considered for grant funding up to 60 percent of cost-share. Grant funding within category (3) will be on a case-by-case basis. Projects within categories (1) through (5) may be considered for loan funding. After cost-share for grant funding has been determined, the local sponsor may be considered for loan funding in addition to the grant funding. The combination of grant and loan funding will not exceed 80 percent from the State Water Commission.

- (1) Addresses upgrades to meet primary drinking water standards or expansion into new service areas. If the expansion into a new service area requires at least ten miles of new transmission pipeline, grant funding up to 75 percent may be considered. Factors considered for water system expansions are:
 - (a) Connection of communities to the regional system as part of this expansion as determined by the Chief Engineer.
 - (b) Willingness of water users at far reaches of the system to pay additional costs for water service as an indicator of greater need for access to water and local commitment in the project as determined by the Chief Engineer.
 - (c) Affordable and sustainable water rate as determined by the Chief Engineer.
- (2) Supports improvements and connection of new customers within the existing service area of a water system that has a 3-year average population growth in excess of 3% per year, as determined by the Chief Engineer
- (3) Water treatment improvements that address impacts from other State Water Commission projects. Grant funding to be determined based on level of impact by State Water Commission project.
- (4) Assists with improvements in service areas where the anticipated cost per user each year (based on 5,000 gallons per month) divided by the average annual median income per user is in the top quartile or other ranking as determined by the Commission of its peer group (large city, small city, and regional) water systems that submitted planning information forms for the biennium. The Chief Engineer will rank the projects.
- (5) Addresses extraordinary repairs or replacement needs of a water supply system due to damages from a recent natural disaster.

Debt per capita, either actual or anticipated, may be used as an additional determinant of financial need.

The State Water Commission will periodically set the interest rate on the loan program, taking into consideration other loan programs. If ability to pay for the local share is a concern, the Chief Engineer may provide a recommendation for public finance options or loan funding.

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

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- 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 water service will be contracted, public notice of availability of water service contracts is required when the depot becomes operational.
- c) A portion of the water supply at any depot must be available on a non-contracted basis for public access.

2 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 GRANT 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

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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 grants for up to 60 percent of eligible costs. For projects with federal participation, the cost-share may be up to 50 percent of eligible costs.

Engineering design suitable for permitting by the State Engineer must be completed before any construction cost-share is approved. The cost-share application must include the return interval or design flow for which the structure will provide protection. 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

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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.

- 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-matched 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 non-desirable. 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 flood 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 the operation plan, quantifying the flood reduction benefits for 25, 50, and 100-year events must be submitted with the cost-share application.

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- 6 **SNAGGING AND CLEARING PROJECTS.** Snagging and clearing projects consist of the removal and disposal of fallen trees and associated debris encountered within or along the channel. Snagging and clearing projects are intended to prevent damage to structures such as bridges, and maintain the hydraulic capacity of the channel during flood flows. The State Water Commission may provide cost-share for up to 50 percent of the eligible items for snagging and clearing as well as any sediment that has accumulated in the immediate vicinity of snags and any trees in imminent danger of falling in the channel on watercourses as defined in N.D.C.C. § 61-01-06. Items that are not eligible include snagging and clearing of man-made channels; the dredging of watercourses for sediment removal; the clearing and grubbing of cattails and other plant vegetation; or the removal of any other unwanted materials.

D. RURAL FLOOD CONTROL. The primary purpose of rural flood control projects is to manage runoff or drainage from agricultural sources or to provide flood control in a rural setting. Typically, rural flood control projects consist of drains, channels, diversion ditches, or ring dikes. Items that are not eligible include projects that are managing runoff or drainage from residential or urban sources.

- 1 **DRAINS, CHANNELS, OR DIVERSION PROJECTS.** 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. Expansions and improvements may be cost-shared on the basis of increased drainage capacity achieved or increased area served. 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.

- 2 **RING DIKE PROGRAM.** This program is intended to protect individual rural homes and farmsteads. All ring dikes within the program are subject to the Commission's Individual Rural and Farmstead Ring Dike Criteria provided in Attachment A. Cost-share is limited to \$40,000 per ring dike. 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.

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

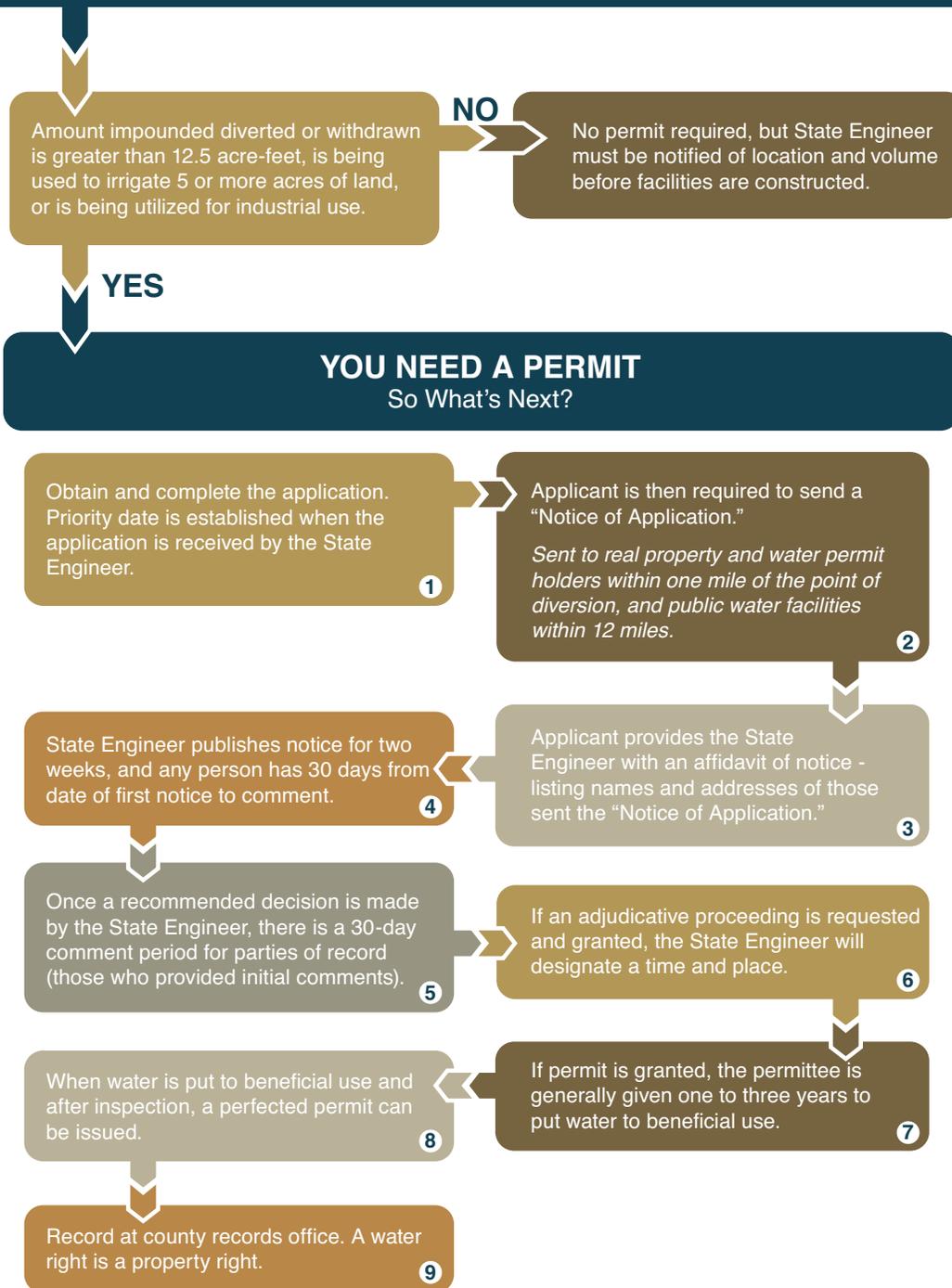
Effective October 1, 2014

construction payment, limited to a combined NRCS and State Water Commission contribution of 80 percent of eligible project costs.

- 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 new central supply works, including water storage facilities, intake structures, wells, pumps, power units, primary water conveyance facilities, and electrical transmission and control facilities.
- G. 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.

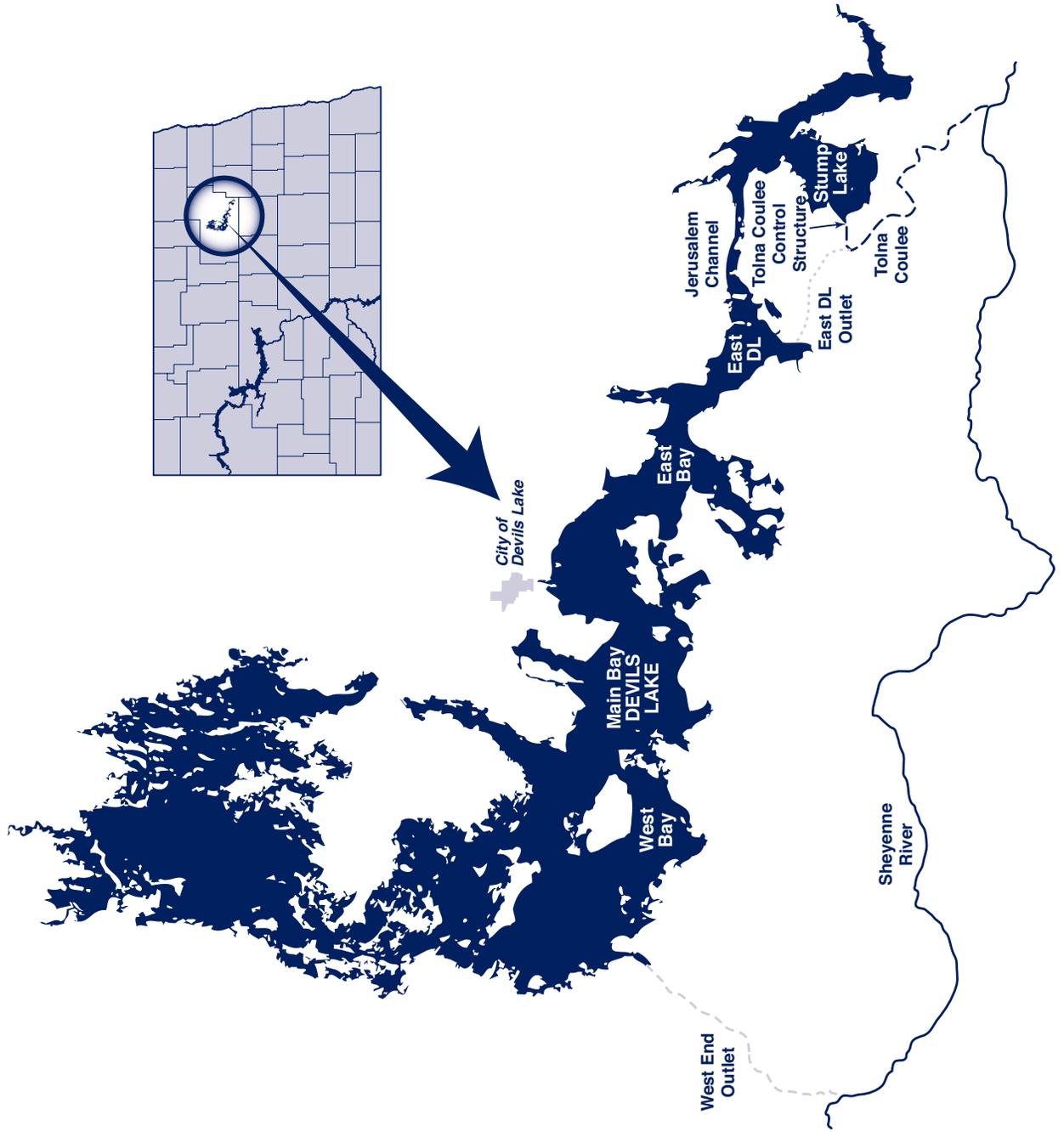
Effective October 1, 2014

North Dakota's Water Permitting Process

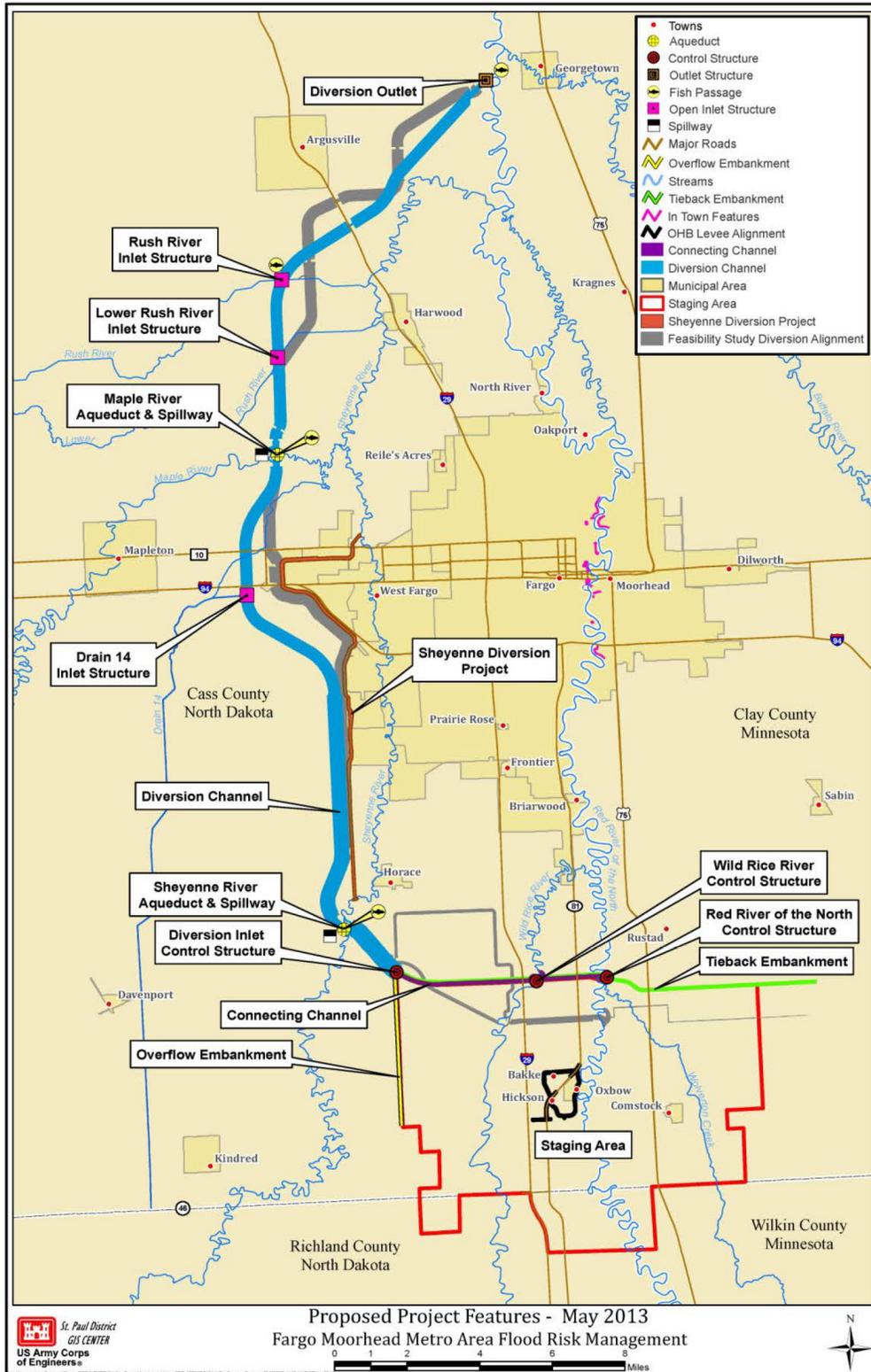


Map Appendix

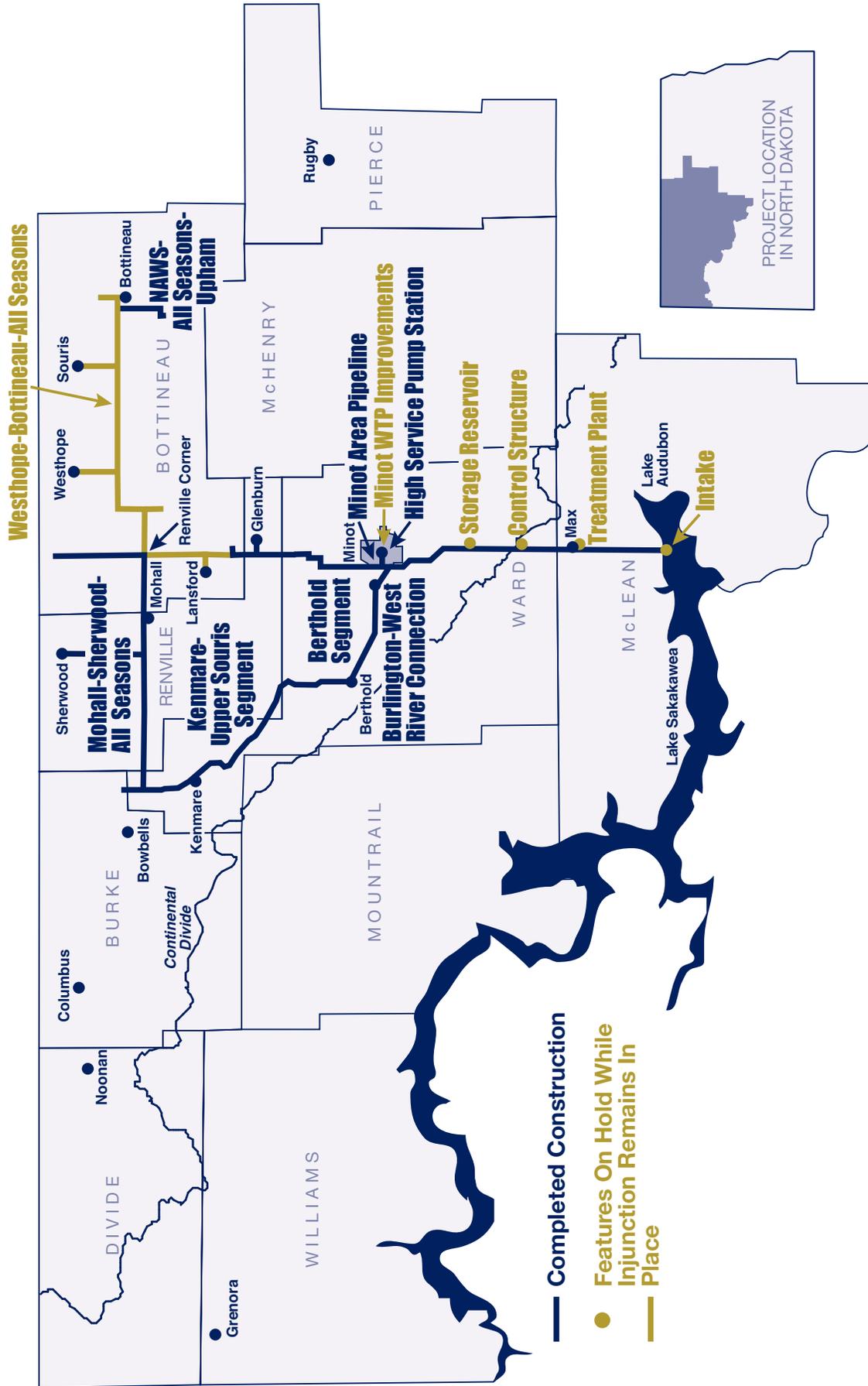
Devils Lake & Outlets



Fargo-Moorhead Area Diversion

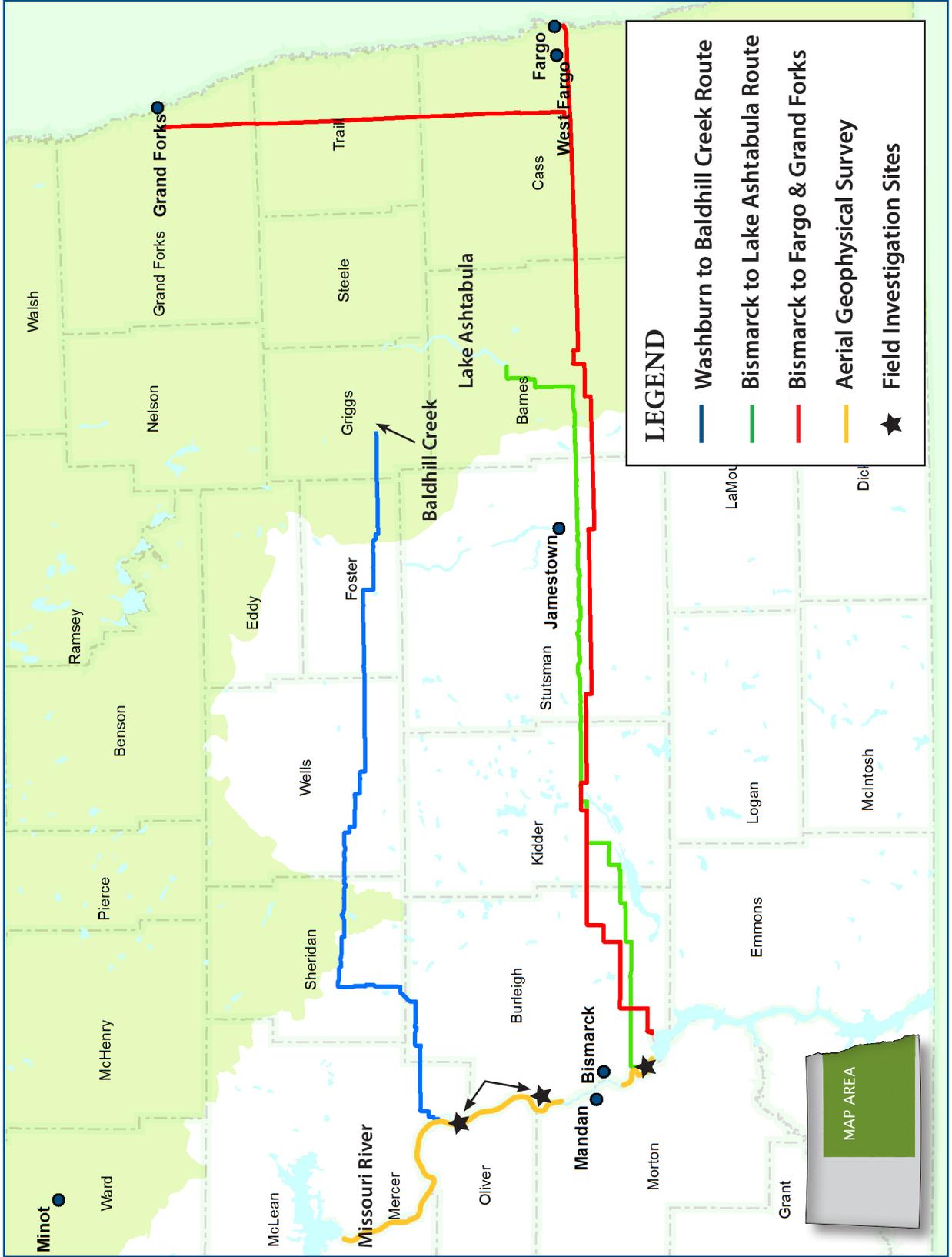


Northwest Area Water Supply

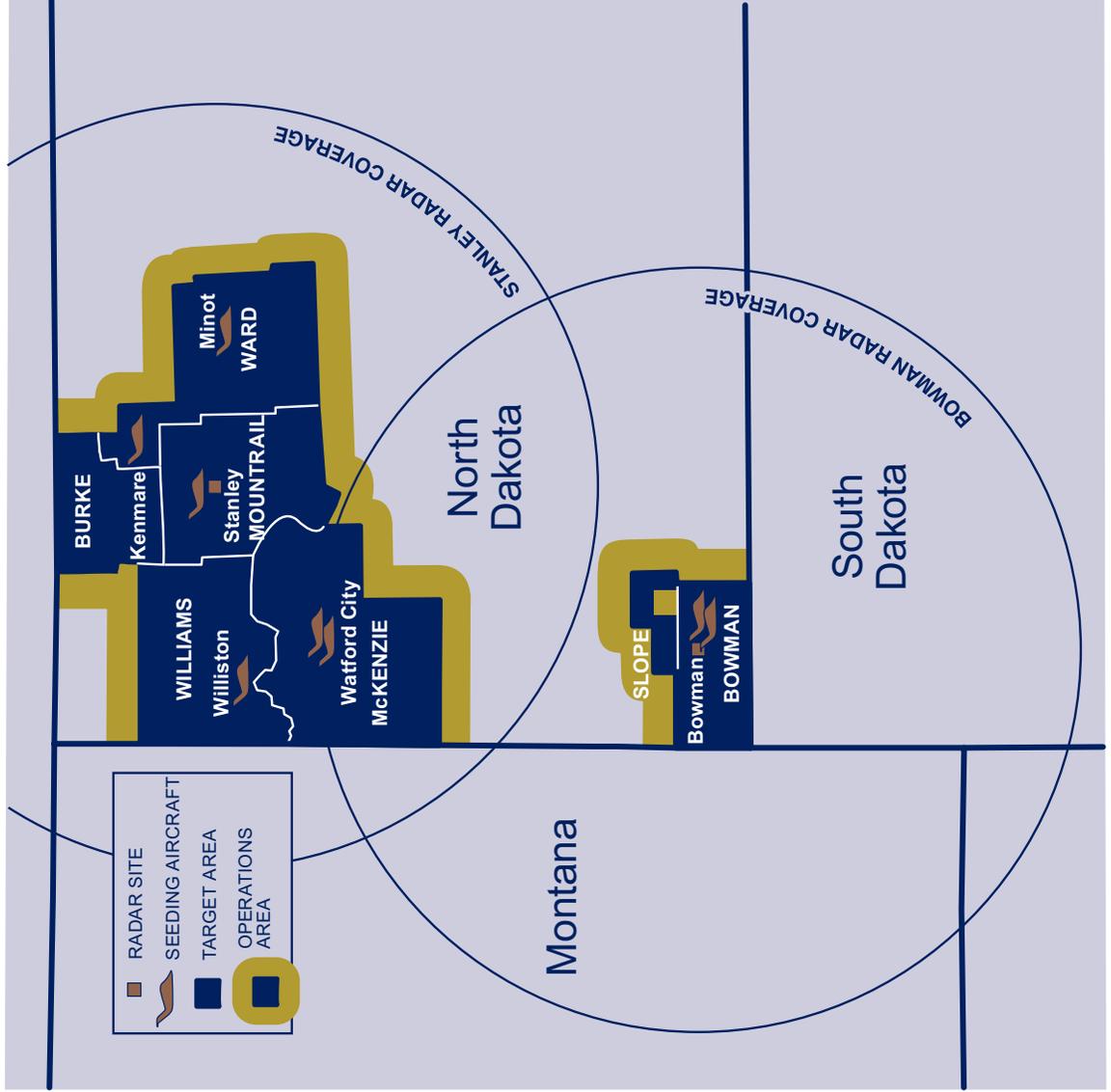


Red River Water Supply Potential Alignments

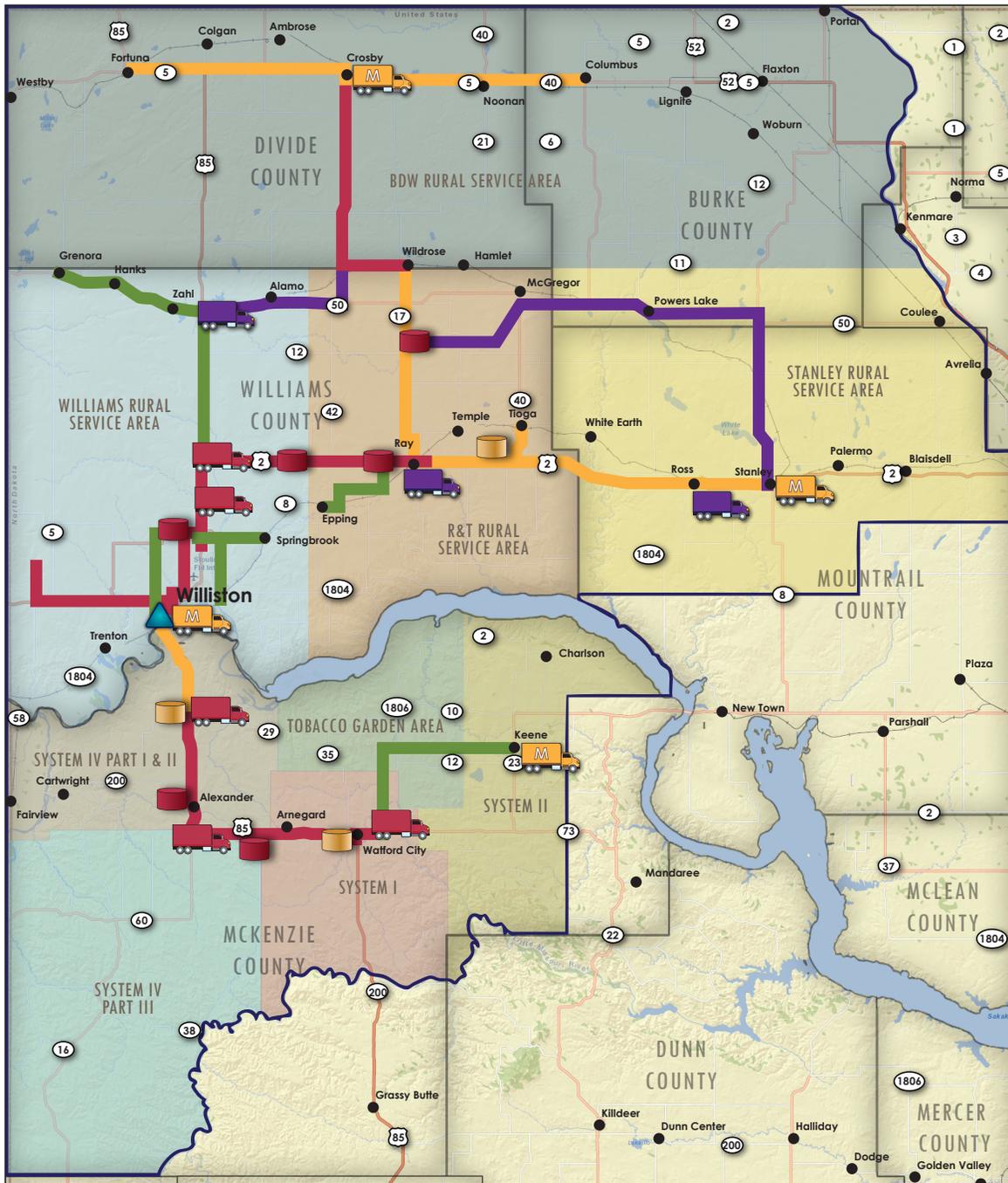
These alternatives were identified in a value engineering study as being the most likely for future consideration.



North Dakota Cloud Modification Project Area



Western Area Water Supply

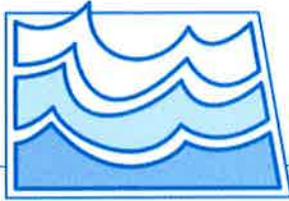


- Existing Transmission Lines
- 2011/2012 Improvements
- 2013/2014 Improvements
- 2015/2016 & Beyond Improvements
- WAWSA Project Boundary Line
- Existing Reservoir
- 2011/2012 Reservoir
- 2013/2014 Reservoir
- WTP/Intake Expansion/Improvements
- Existing Member Depots in Operation
- WAWSA Depots in Operation
- Future WAWSA Depots





North Dakota State Water Commission
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Bismarck, ND 58505-0850
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North Dakota State Water Commission

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701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: <http://swc.nd.gov>

Agenda F

MEMORANDUM

TO: Governor Jack Dalrymple
State Water Commission Members

FROM: *TS* Todd Sando, P.E., Chief Engineer-Secretary

DATE: November 25, 2014

SUBJECT: 2015-2017 State Water Commission and Office of the State Engineer Strategic Plan

A new Final Draft 2015-2017 State Water Commission (SWC) and Office of the State Engineer (SE) Strategic Plan is attached for your consideration. I respectfully request that you review the draft agency strategic plan, and provide any comments or changes that you may have to Patrick Fridgen, the Director of our Planning and Education Division, by December 5, 2014.

Background

Regular maintenance of a strategic plan provides agencies with an opportunity to set the bar for itself, and to more effectively measure performance in the future.

To develop the 2015-2017 SWC and Office of the SE Strategic Plan, project and program managers were asked to provide input regarding their expectations for future progress through June 30, 2017. As part of that effort, they were asked to provide project and/or program objectives that they will strive to accomplish during the strategic planning timeframe, as well as specific tasks that will be completed to achieve their objectives.

It should be noted that the 2015-2017 plan does not comprehensively cover *all* efforts pursued by the SWC and the Office of the SE. Rather, it includes the key projects and programs that were deemed appropriate to be included in the strategic planning process.

I recommend that the State Water Commission approve the 2015-2017 State Water Commission and Office of the State Engineer Strategic Plan – including changes Commission members have provided.

TS:pf:dm/322

NORTH
DAKOTA

2015
2017

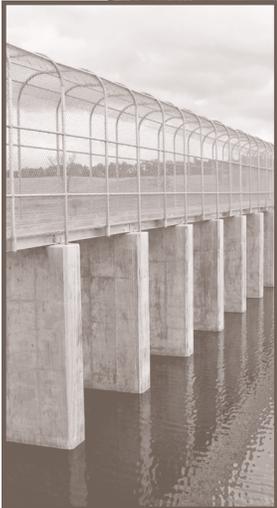
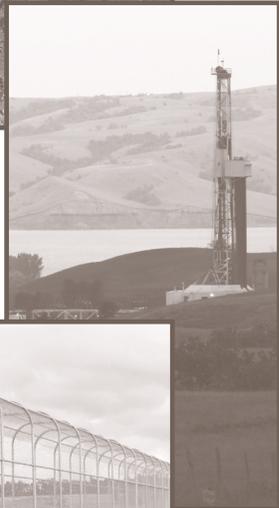
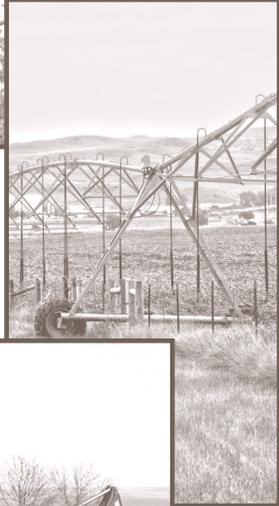
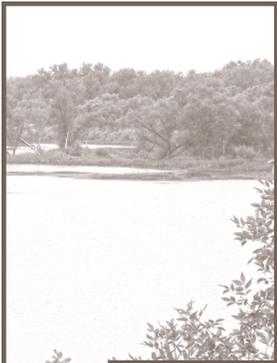
STATE WATER COMMISSION & OFFICE OF THE STATE ENGINEER

STRATEGIC PLAN



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A MESSAGE FROM THE STATE ENGINEER:

We are proud to present the North Dakota State Water Commission and Office of the State Engineer's 2015-2017 Strategic Plan. This new plan was completed to incorporate and adjust for new expectations that have developed since our previous plan was published back in 2013.

As in the past, the primary purpose of our 2015-2017 Strategic Plan is to clearly document agency direction and expectations we have set for ourselves through our strategic planning timeframe. Through the planning process, we have reevaluated our agency's goals to ensure that we are achieving the standards expected by the people of North Dakota. In addition, we have laid out objectives for many of our key projects and programs, to help us more effectively meet our goals. More specifically, we have defined tasks and actions that our divisions and management need to take to achieve desired outcomes.

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

Sincerely,

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

Vision

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

Mission

To improve the quality of life and strengthen the economy of North Dakota by managing the water resources of the state for the benefit of its people.

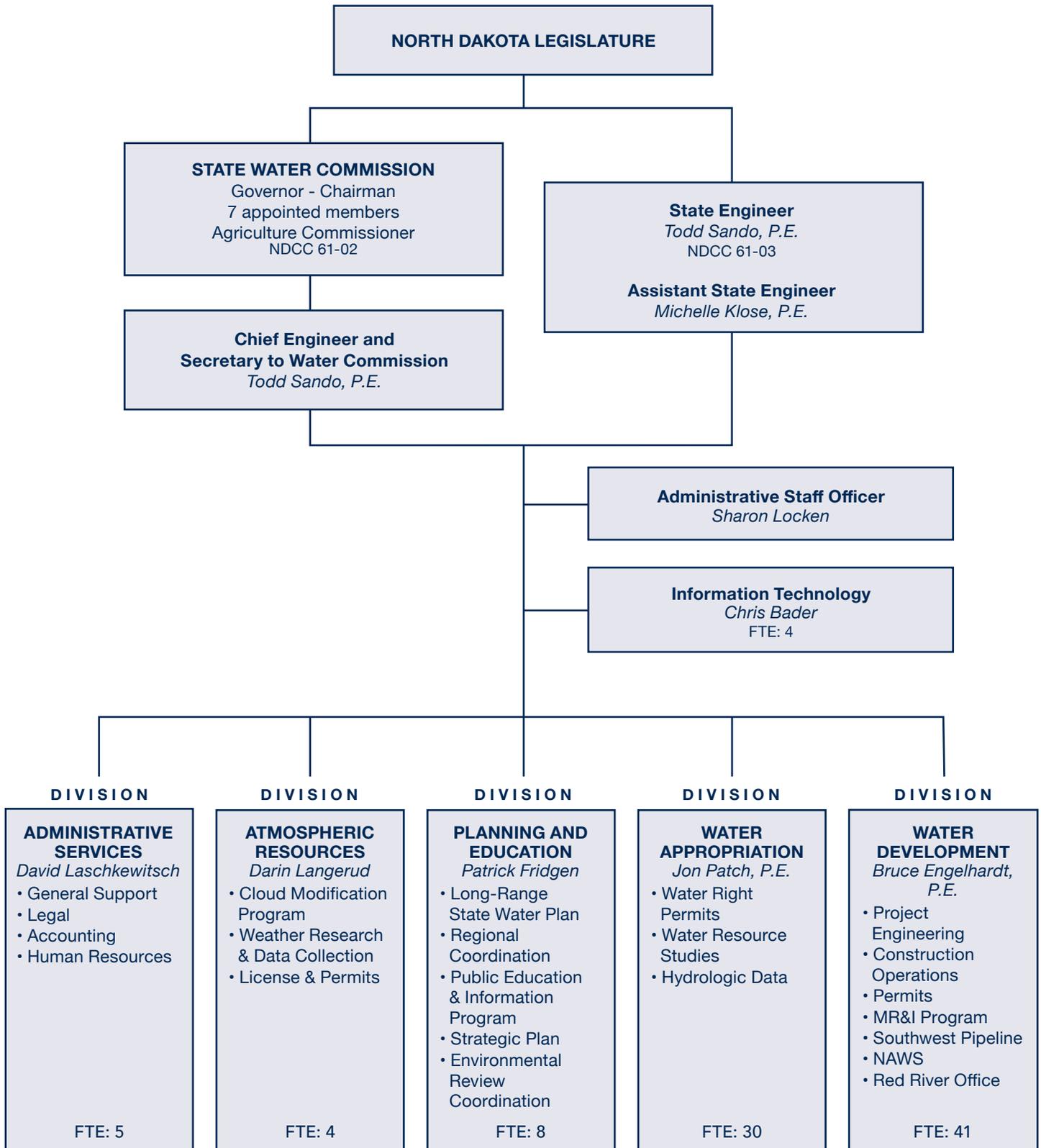
Philosophy & Values

In the delivery of services to the citizens of North Dakota, we the employees of the State Water Commission and the Office of the State Engineer value fairness, objectivity, accountability, responsiveness, and credibility. We pledge to use professional and scientific methods to maintain only the highest of standards in our delivery of services to our constituents.

Agency Goals

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

Organizational Chart



TOTAL FULL TIME EQUIVALENTS OF 95 PERSONNEL

Strategic Planning Focus Projects & Programs

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

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

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

Administration - *Dave Laschkewitsch, Director*

Administration & Support Services

Atmospheric Resources - *Darin Langerud, Director*

ARB Cooperative Observer Network

Atmospheric Research Program

North Dakota Cloud Modification Project

Water Appropriations - *Jon Patch, Director*

Community Water Supply Studies

Water Resource Data
Information Dissemination

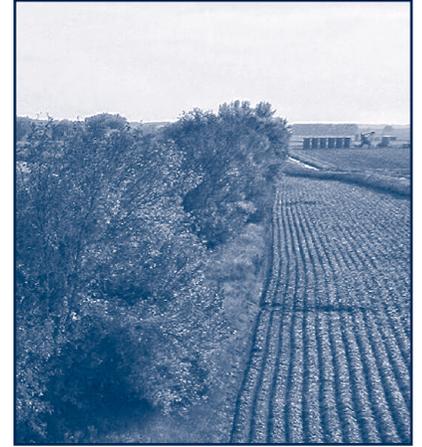
Water Resource-Related
Economic Development

Water Resource Monitoring

Water Resource Research

Water Rights Administration & Processing

Water Rights Evaluation & Adjudication



Water Development - *Bruce Engelhardt, Director*

Cost-Share Program

Dam Safety Program

Design and Construction

Devils Lake Flood Control

Floodplain Management

Investigations

Municipal, Rural & Industrial Water Supply

Northwest Area Water Supply

Regulatory Program

Silver Jackets Program

Southwest Pipeline Project

Planning & Education - *Patrick Fridgen, Director*

State Water Management Plan

Water Education

Watershed Planning & Coordination

Administration & Support Services

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

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

Project/Program Overview:

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

Budget and fiscal control work is accomplished within the provisions of statutory law and principles or rules of that law. Agency accounting consists of keeping adequate financial records, preparation of financial statements and reports, project and program cost accounting, preparation of budgets, responding to audit requests and recommendations, and proper control of various funds appropriated by the Legislature.

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

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

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



ACTION PLAN	TASKS	TARGET DATES
	Coordinate the timing of agency bonding	As needed
	Maintain accounting records, and provide information technology and records management services	Ongoing
	Bill federal, state, and local entities for their share of project costs	Ongoing
	Provide legal support, including research and contract development.....	Ongoing
	Maintain an agency I.T. strategic plan, and coordinate agency I.T. efforts with external and statewide initiatives.....	Ongoing
	Support, maintain, and evolve agency I.T. infrastructure	Ongoing
	Prepare and submit the agency’s budget.....	Sept. 2016
	Coordinate development of agency testimony for legislative appropriations hearings.....	Dec. 2016

ARB Cooperative Observer Network

Agency Goal(s) Satisfied:

- To educate the public regarding the nature and occurrence of North Dakota’s water resources.
- To collect, manage, and distribute information to facilitate improved management of North Dakota’s water resources.

Project/Program Objectives:

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

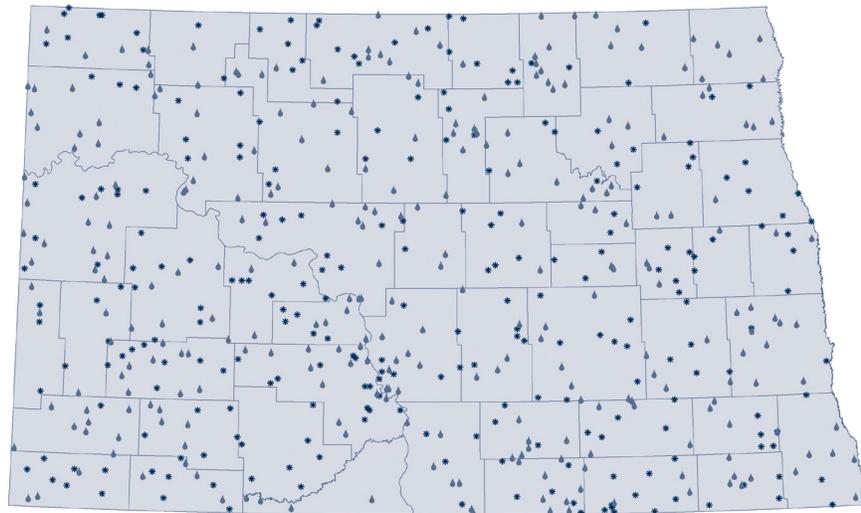
Project/Program Overview:

The Atmospheric Resource Board’s (ARB) Cooperative Observer Network has collected growing season rainfall and hail data from volunteer observers statewide since 1977. Since that time, participation has ranged between 550 and 1,000 observers annually, making it one of the highest density precipitation observation networks in the U.S. In all, more than three million daily precipitation observations, and over twelve thousand hail observations have been reported.

Assumptions and Obstacles:

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

2014 ARBCON OBSERVERS



△ Summer Only ★ Year-Round

ACTION PLAN	TASKS	TARGET DATES
	Manage the program for daily observation of rainfall, hail, and snow, including data entry, quality control, and GIS mapping	Ongoing
	Produce growing-season map products and manage volunteer renewal for following years	Fall, annually
	Recruit new volunteers	Spring, annually
	Mail reporting instructions, reporting cards, and rain gages to volunteer observers	March 2016 & 2017
	Expand the online reporting program	Winter, annually
Expand snowfall measurements in critical areas.....	Winter, annually	

Atmospheric Research Program

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

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

Project/Program Overview:

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

Assumptions and Obstacles:

Funding is the primary obstacle for the Atmospheric Research Program.



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

Community Water Supply Studies

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

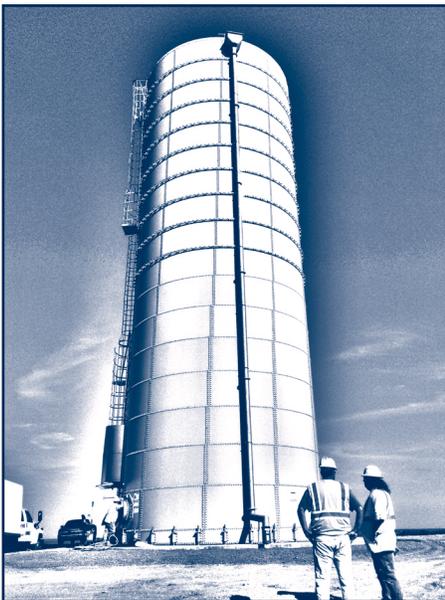
- Provide interpretation of existing water resource data.
- Conduct studies of potential water resources.
- Publish reports on water resource studies.
- Provide guidance and/or recommendations with regard to water supply concerns.
- Process appropriate paperwork to establish or maintain water rights.

Project/Program Overview:

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

Assumptions and Obstacles:

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



ACTION PLAN	TASKS	TARGET DATES
	Conduct water supply studies	As requested

Cost-Share Program

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

- To financially assist federal and state agencies and political subdivisions with eligible projects categorized as rural flood control, water supply, flood control, flood protection, flood acquisitions, dam safety, recreation, snagging and clearing, studies, irrigation, bank stabilization, dam removal/breach, Federal Emergency Management Agency (FEMA) levee accreditation, water retention, engineering and technical assistance.

Project/Program Overview:

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

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

Upon determining a proposed project’s eligibility and approval of funding, an agreement/contract is entered into with the project’s sponsor describing the scope of work, how funds will be disbursed, and insurance and indemnification requirements, and other terms as applicable. Request for payments are processed per the terms of the agreement. At the discretion of the SWC, projects are reviewed and/or inspected upon final payment.

Assumptions and Obstacles:

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

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

Dam Safety Program

Agency Goal(s) Satisfied:

- To regulate the use of water resources for the future welfare and prosperity of the people of North Dakota.
- To educate the public regarding the nature and occurrence of North Dakota’s water resources.
- To collect, manage, and distribute information to facilitate improved management of North Dakota’s water resources.

Project/Program Objectives:

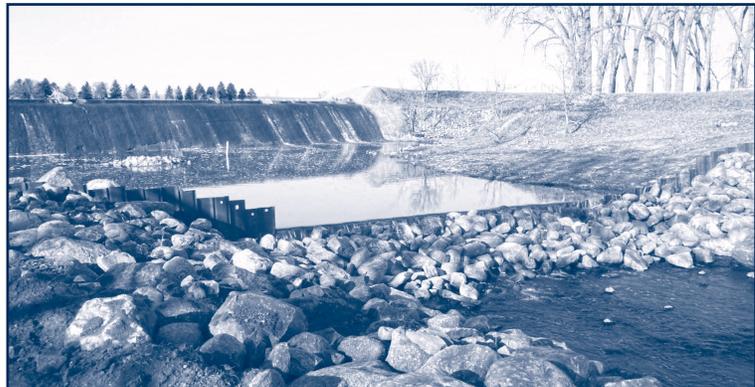
- Conduct dam inspections in order to identify dams in need of maintenance or repair.
- Report inspection findings and recommendations to the dam owners.
- Maintain and update an inventory of all dams in North Dakota.
- Encourage the development of Emergency Action Plans (EAPs) for high and medium hazard dams, including the development of inundation maps for high hazard dams.
- Increase awareness of dam safety issues among dam owners and the public.

Project/Program Overview:

The purpose of North Dakota’s Dam Safety Program is to minimize the risk to life and property associated with the potential failure of dams in the state. A national dam inspection program took place in 1978-1981 under the direction of the U.S. Army Corps of Engineers following a series of dam failures across the country in the 1970s. The North Dakota Dam Safety Program, administered by the SWC, was initiated to continue and build on that inspection program. There are currently 3,119 dams in North Dakota’s dam inventory. Of those, 44 dams are classified as high hazard and 88 are classified as medium hazard, meaning there is the potential for loss of life or significant property damage downstream if one of those dams were to fail.

Assumptions and Obstacles:

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



ACTION PLAN	TASKS	TARGET DATES
	Conduct full periodic inspections of non-federally owned high hazard dams and medium hazard dams greater than 10 feet high on a rotational basis, approximately 20 dams per year	Oct. 31, annually
	Conduct partial inspections of approximately 140 dams each spring following spring runoff.....	June 30, annually
	Report inspection findings and recommendations to dam owners	Ongoing
	Maintain and update North Dakota’s dam inventory	Ongoing
	Submit data to the National Inventory of Dams (NID)	As requested
	Assist dam owners with developing EAPs and inundation mapping, and review and approve EAPs as they are submitted	Ongoing
	Review and update the hazard classification of dams in North Dakota’s inventory.....	Ongoing

Design & Construction

Agency Goal(s) Satisfied:

- To develop water resources for the future welfare and prosperity of the people of North Dakota.
- To educate the public regarding the nature and occurrence of North Dakota’s water resources.
- To collect, manage, and distribute information to facilitate improved management of North Dakota’s water resources.

Project/Program Objectives:

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

Project/Program Overview:

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



Assumptions and Obstacles:

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



ACTION PLAN	TASKS	TARGET DATES
	Assist dam owners with design and repairs of existing water facilities	Ongoing
	Repair and maintain North Dakota’s stream gage network through cooperative efforts with the USGS	Summer, annually
	Conduct general construction projects	Summer, annually

Devils Lake Flood Control

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

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

Project/Program Overview:

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

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

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

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

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



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

Floodplain Management

Agency Goal(s) Satisfied:

- To manage water resources for the future welfare and prosperity of the people of North Dakota.
- To educate the public regarding the nature and occurrence of North Dakota’s water resources.
- To collect, manage, and distribute information to facilitate improved management of North Dakota’s water resources.

Project/Program Objectives:

- Manage the state’s floodplains to reduce flood damages throughout the state.
- Collect and distribute information relating to flooding and floodplain management.
- Coordinate local, state, and federal floodplain management activities.
- Assist communities in their floodplain management activities.
- Fulfill responsibilities under the annual Community Assistance Program (CAP) of FEMA.
- Support the Risk Mapping and Assessment Planning (MAP) program, which updates and revises identification of flood hazards.

Project/Program Overview:

The National Flood Insurance Program (NFIP) works on a partnership formed of federal, state, and local governments. Local governments use state laws concerning planning, zoning and development as a basis to practice floodplain management. The NFIP trades availability of flood insurance for structures, in return for communities guiding development in identified flood hazard areas. The North Dakota Floodplain Management Act of 1981 adopts the NFIP by reference in Chapter 61-16.2 of the North Dakota Century Code. This chapter was amended in 1999 and again in 2003 by the State Legislature, which broadened and refined the duties of the State Engineer.

FEMA provides partnership funding to states for their role in the Community Assistance Program, Risk MAP and Map Modernization Management Support programs.



Assumptions and Obstacles:

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

ACTION PLAN	TASKS	TARGET DATES
	Monitor community floodplain management compliance under the CAP and provide technical assistance regarding the NFIP	Sept. 30, annually
	Conduct floodplain management training workshops and participate in related training workshops under CAP.....	Sept. 30, annually
	Manage the selection and study process of community candidates for initial flood hazard identification or flood hazard revision relative to the NFIP	Annually
	Promote the availability and use of mapping products produced as part of Risk MAP	Sept. 30, annually

Investigations

Agency Goal(s) Satisfied:

- To develop water resources for the future welfare and prosperity of the people of North Dakota.
- To manage water resources for the future welfare and prosperity of the people of North Dakota.
- To collect, manage, and distribute information to facilitate improved management of North Dakota's water resources.

Project/Program Objectives:

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

Project/Program Overview:

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

In addition, the Investigations Section provides technical expertise in dealing with the management of the Missouri River, flood response, and other water issues, as well as providing government survey information to the public. The Section provides coordination for the Mouse River Enhanced Flood Protection Project and develops tools for GIS techniques in water resources engineering.

Assumptions and Obstacles:

Severe flooding problems throughout the state, flood response and recovery activities, and concerns over changes to management of the Missouri River system have consumed much of the Investigations Section's time over the course of the last decade. In addition, the collection, analysis, and interpretation of data from these floods continue well beyond the events. With those issues expected to be in the forefront in the coming years, that trend will likely continue.



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

Municipal, Rural, & Industrial Water Supply Program

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

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

Project/Program Overview:

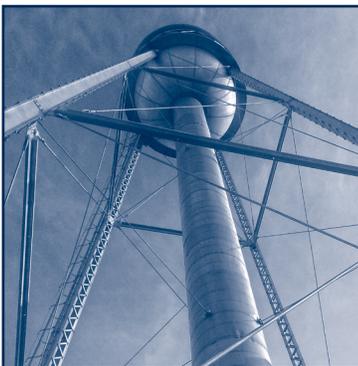
The Municipal, Rural, and Industrial (MR&I) water supply program is one source of federal funding used for public water systems. North Dakota's MR&I program was originally established by the 1986 Garrison Diversion Reformulation Act. At that time, Congress authorized \$200 million in the form of a maximum grant of 75 percent. The state has since received the original \$200 million from the 1986 Act. Later, the Dakota Water Resources Act of 2000 added an additional \$200 million for the MR&I program, which is indexed, and the state has received \$135 million. Funding used for the MR&I program is provided through the U.S. Bureau of Reclamation (USBOR). The Garrison Diversion Conservancy District (GDCCD) signed a cooperative agreement with the USBOR to receive the federal funding. Further, the SWC and GDCCD signed a joint powers agreement to administer the program based on a memorandum of understanding.

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

Assumptions and Obstacles:

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

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



ACTION PLAN

TASKS	TARGET DATES
Implement a five-year plan for MR&I project funding requests	Ongoing
Participate in meetings with communities and rural water districts to provide technical and planning assistance.....	Ongoing
Provide MR&I budget estimates for project development	Ongoing
Coordinate meetings with various funding entities to discuss projects.....	Ongoing
Work with the Garrison Diversion Conservancy District and the Congressional Delegation on federal appropriations	Ongoing
Coordinate with the GDCCD in the prioritization and allocation of MR&I funds.....	Ongoing

North Dakota Cloud Modification Project

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

- Reduce hail damages in the North Dakota Cloud Modification Program (NDCMP) target area.
- Enhance summer rainfall from thunderstorms in NDCMP target area.

Project/Program Overview:

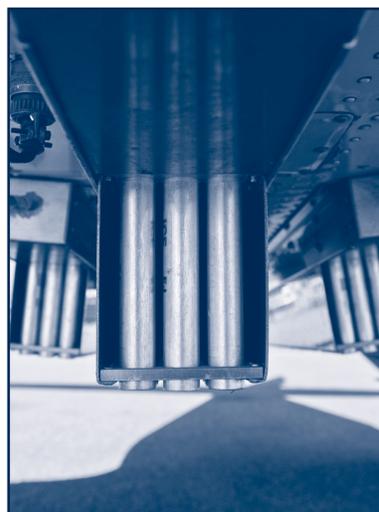
The NDCMP is a long-running, operational cloud seeding program with the dual purposes of hail suppression and rainfall enhancement. The target area covers more than 11,500 square miles in seven western North Dakota counties during the months of June, July, and August. Counties partner with the state through the ARB, employing contractors that provide the aircraft, pilots, seeding equipment, and radar maintenance services. The ARB owns and operates two radar systems and employs the meteorologists to coordinate seeding operations. In addition, the program offers two intern programs; one for students studying meteorology, and another for pilots studying at the University of North Dakota's J.D. Odegaard School for Aerospace Sciences.

Evaluations of the NDCMP indicate that the program reduces hail damage to crops by 45 percent, increases wheat yields by 5.9 percent, and increases rainfall between 5 and 10 percent. A 2009 economic study estimates the NDCMP increases the value of agricultural production by \$12 million to \$19.7 million annually, producing a benefit to cost ratio of 12-20 to 1.

Assumptions and Obstacles:

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

For a map of the North Dakota Cloud Modification Project, see the Appendix.



ACTION PLAN

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

Northwest Area Water Supply

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

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

Project/Program Overview:

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

The SWC began construction on the Northwest Area Water Supply (NAWS) project in April 2002. The first four contracts involving 45 miles of pipeline from the Missouri River to Minot were completed in the spring of 2009. The project is currently serving Berthold, Kenmare, Burlington, West River Water District, Upper Souris Water District, Mohall, Sherwood, All Seasons Water District, and Minot (also serves North Prairie Water District and Minot Air Force Base). NAWS is getting interim water supply through a 10-year contract with Minot, which expires in 2018.

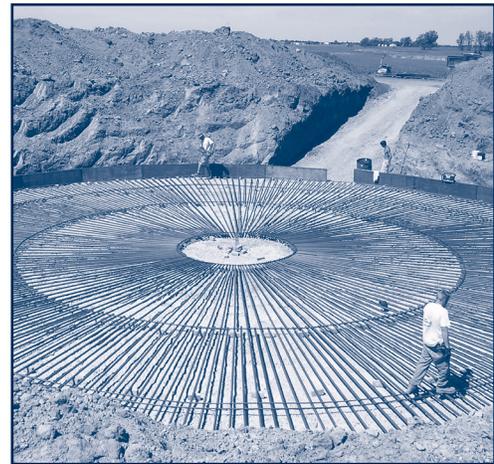
In 2002, a lawsuit was filed by Manitoba; primarily arguing that NAWS could increase the risk of transferring non-native biota between the Missouri River and Hudson Bay drainage basins. In 2009, the state of Missouri filed against the U.S. Bureau of Reclamation and the Corps of Engineers; primarily arguing NAWS would negatively affect depletions of the Missouri River. The Missouri filings were ultimately combined with Manitoba's. Various elements of project construction were allowed to proceed by court order, despite the pending lawsuit. The court found that the Environmental Impact Statement (EIS) completed in 2009 was not adequate and needed to address impacts to Canada and Missouri River depletions. Scoping for a Supplemental EIS to address the court's May 2009 order was started in July 2010. The draft Supplemental EIS was made available for public comment in June 2014. The public comment period ended September 10, 2014.

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

Assumptions and Obstacles:

Adequate federal funding must be received in a manner that does not impede progress. Completion of the Supplemental EIS in 2015, and decisions on the level of treatment greatly affect funding needs, and design and construction schedules. If Minot's aquifers continue to decline, and progress is not made in getting a necessary water supply, then the existing communities and rural water systems will need to return to their inadequate ground water supplies.

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



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

Regulatory Program

Agency Goal(s) Satisfied:

- To regulate the use of water resources for the future welfare and prosperity of the people of North Dakota.
- To manage water resources for the future welfare and prosperity of the people of North Dakota.
- To collect, manage, and distribute information to facilitate improved management of North Dakota’s water resources.

Project/Program Objectives:

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

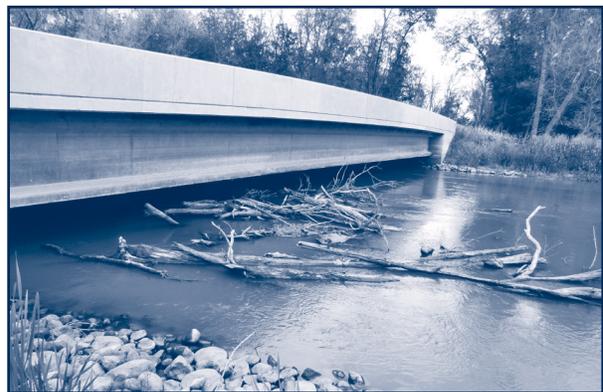
Project/Program Overview:

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

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

Assumptions and Obstacles:

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



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

Silver Jackets Program

Agency Goal Satisfied:

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

Project/Program Objectives:

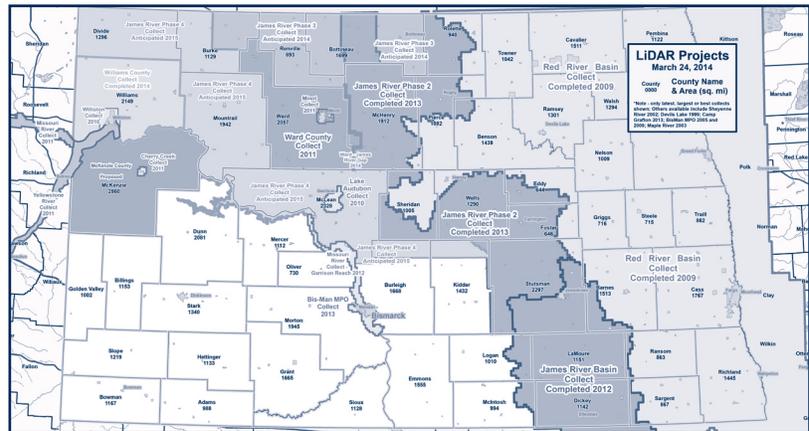
- Educate state agencies, county water boards, and communities on the Silver Jackets Program.
- Assist communities with FEMA's levee recertification requirement or Provisionally Accredited Levee (PAL) program.
- Assist communities with project requests in support of flood control or long term flood mitigation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

Project/Program Overview:

North Dakota's Silver Jackets Program was initiated in January 2010 (in response to the extensive flooding of 2009) with the intent to identify comprehensive, long-term flood solutions through a collaborative, interagency effort between state and federal authorities. A Silver Jackets charter was completed and signed between the SWC, North Dakota Division of Emergency Services, FEMA Region VIII, and the U.S. Army Corps of Engineers (St Paul and Omaha districts) in May 2010. The charter was then updated in 2014, with the addition of the National Weather Service, U.S. Geological Survey, ND Geological Survey, U.S. Fish and Wildlife Service, and the Natural Resources Conservation Service. The Corps of Engineers initiated the Silver Jackets concept through a partnership with FEMA in 2005 with a goal of establishing Silver Jackets teams in at least one state in each Corps division, and ultimately one in each state.

Assumptions and Obstacles:

The potential for flooding in North Dakota will continue annually due to both rain and spring snow melt events. The need for local, state, and federal coordination in support of comprehensive long-term flood control and mitigation efforts must continue throughout the state to ensure success. Continued funding of this program is critical to its existence.



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

Southwest Pipeline Project

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

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

Project/Program Overview:

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

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

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

Assumptions and Obstacles:

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

For a map of North Dakota's Southwest Pipeline Project, see the Appendix.

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

State Water Management Plan

Agency Goal(s) Satisfied:

- To develop comprehensive plans in order to meet North Dakota’s water resource needs.
- To manage water resources for the future welfare and prosperity of the people of North Dakota
- To educate the public regarding the nature and occurrence of North Dakota’s water resources, and water development efforts.

Project/Program Objectives:

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

Project/Program Overview:

By virtue of North Dakota Century Code (NDCC), Section 61-02-14, Powers and Duties of the Commission; Section 61-02-26, Duties of State Agencies Concerned with Intrastate Use or Disposition of Waters; and Section 61-02-01.3, Comprehensive Water Development Plan, the Commission is require to develop and maintain a comprehensive water development plan. The most recent comprehensive Water Management Plan was completed in 2015. Following major water plan revisions, Water Development Reports (WDR) are published on a biennial basis to assist with agency budgeting efforts, and to provide updated project and funding information during Legislative Assemblies.



Assumptions and Obstacles:

Active participation and accurate input from local water managers and project sponsors regarding project funding needs will be critical for more accurate budget development, and successful statewide water planning efforts.

ACTION PLAN	TASKS	TARGET DATES
	Contact local water managers to request updated water project/program information, including funding timeframes for the 2017-2019 biennium and beyond	Jan. 2016
	Coordinate project information collection efforts with the North Dakota Water Coalition and its membership.....	Spring 2016
	Develop a preliminary water resource project/program inventory for the 2017-2019 biennium and beyond	May 2016
	Review and update SWC water planning goals, objectives, and policies.....	Spring/Summer 2016
	Process project information for use in SWC budget development.....	Aug. 2016
	Conduct SWC-hosted basin meetings as required per NDCC 61-02-01.3.....	Fall 2016
	Develop a final 2017 WDR.....	Dec. 2016
	Present the 2017 WDR to the Legislative Assembly – outlining funding needs.....	Jan. 2017

Water Education

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

- Develop, promote, and provide opportunities statewide to K-12 formal and non-formal educators and students to expand their knowledge and understanding of water resources by:
 - Maintaining supplies and availability of indoor and outdoor water science/education programs and training resources.
 - Acquiring and distributing a balanced inventory of water resource information, education tools, services, programs, and resource materials.
 - Conducting institutes, workshops, in-service and pre-service educational opportunities.
 - Conducting and supporting classroom events, youth camps, water festivals, community water awareness, and youth service events.

Project/Program Overview:

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

Assumptions and Obstacles:

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



ACTION PLAN	TASKS	TARGET DATES
	Maintain Project WET classroom-ready teaching aids and service contracts in support of water resource education efforts	As needed
	Provide in-service and pre-service credit and non-credit educational programs for K-12 educators and resource personnel.....	Ongoing
	Provide varying educational programs/events for K-12 students, communities and general public statewide	Ongoing
	Recruit and maintain a Project WET facilitator network by providing leadership training and development opportunities	March 2016
	Provide funds for the Keep North Dakota Clean water education poster contest.....	March 2016 & 2017
	Complete all Section 319 EPA grant development and reporting requirements.....	Ongoing
Complete one Watershed Institute	Summer 2016	

Water Resource Data Information Dissemination

Agency Goal(s) Satisfied:

- To educate the public regarding the nature and occurrence of North Dakota’s water resources.
- To collect, manage, and distribute information to facilitate improved management of North Dakota’s water resources.

Project/Program Objectives:

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

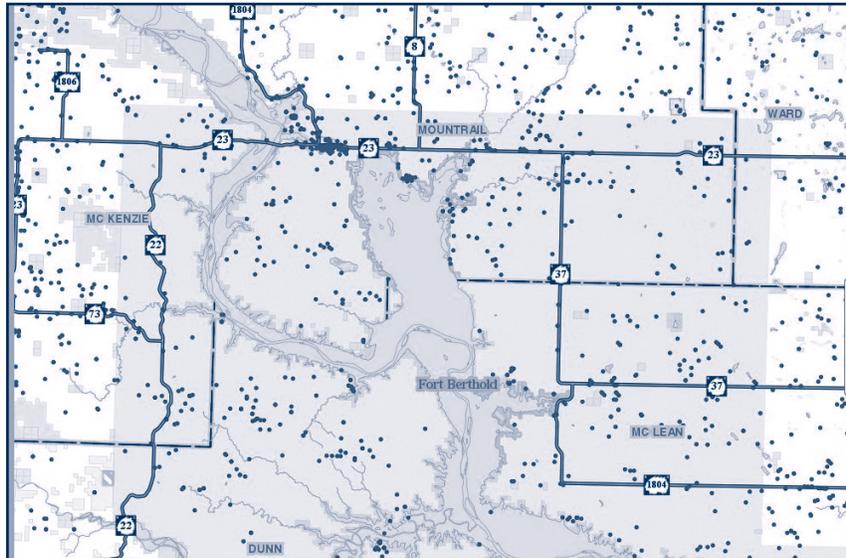
Project/Program Overview:

Significant volumes of data are contained in the SWC’s Water Resources Information Management Systems (WRIMS). Private individuals and private enterprise, as well as local, county, state, federal, and international entities routinely make use of various portions of these data sets. Staff facilitate the ability of interested parties to access data of interest to them. A web-based interactive interface is available to allow for direct access to the data on the part of the interested parties. Additionally, numerous interpretive reports are available for various water resources in the state.

Assumptions and Obstacles:

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

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



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

Water Resource Monitoring

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

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

Project/Program Overview:

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

Assumptions and Obstacles:

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



ACTION PLAN	TASKS	TARGET DATES
	Install test holes and plug obsolete observation wells	Apr.-Dec., annually
	Install 125-175 monitoring wells	Apr.-Dec., annually
	Install 20-30 staff gages, and monitor water levels and flows	Apr.-May, annually
	Measure 25,000-30,000 water levels in wells and surface water bodies	Apr.-Dec., annually
	Collect data from 60-70 continuous water level recorders.....	Jan.-Dec., annually
	Upgrade 60-70 continuous monitoring locations with real-time telemetry.....	Dec. 2015
	Collect 1,500-2,000 samples from wells and surface-water bodies.....	Apr.-Dec., annually
	Analyze samples for various chemical constituents	Apr.-Jan., annually
	Repair and maintain 3,500-4,000 measurement and sampling locations.....	Apr.-Dec., annually
Enter data into database.....	Ongoing	
Coordinate USGS cooperative water resource monitoring program to continue funding support for approximately 46 surface water gage sites, 84 observation wells monitored monthly, 22 observation wells monitored real-time, and 150 water quality analyses collected from co-op monitoring network.....	Ongoing, annually	
Conduct one or two aquifer tests per year	Summer, annually	

Water Resource-Related Economic Development

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

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

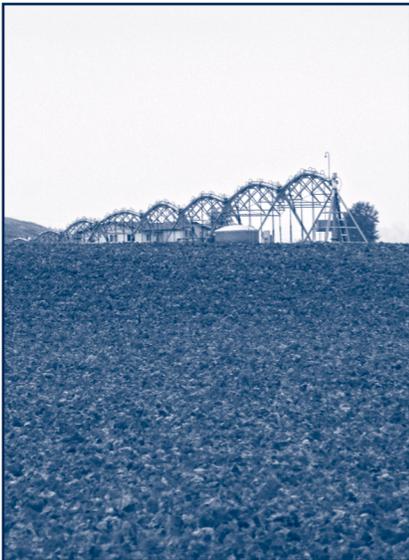
Project/Program Overview:

Water utilization is a key ingredient to many potential opportunities for economic development. Numerous studies and reports have documented potential water supplies for economic development. Additionally, existing reports and/or water resource data are interpreted by staff in the form of short reports to aid industries in determining the viability of various water resources with respect to their water needs in their consideration of locating in North Dakota.

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

Assumptions and Obstacles:

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



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

Water Resource Research

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

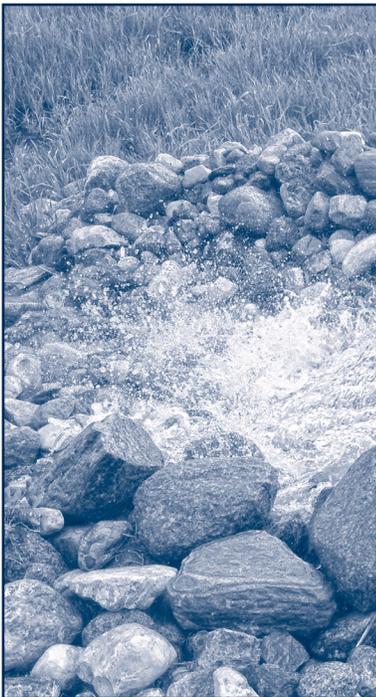
- Support research into water resources of the state.
- Conduct studies of the nature and occurrence of water in order to optimize its conservation and development throughout the state.

Project/Program Overview:

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

Assumptions and Obstacles:

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



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

Water Rights Administration & Processing

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

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

Project/Program Overview:

NDCC 61-04-02 requires that all water uses except for domestic, livestock, fish, wildlife, and other recreational uses (unless the aforementioned are greater than 12.5 acre-feet per year) apply for a water permit before putting water to beneficial use. Set procedures are mandated by NDCC and regulations. Staff guide applicants through this process. In addition, records, documents, and a relational database are meticulously maintained. Upon completion of water use development, inspections are conducted to verify the ability of the applicant to put water to beneficial use. Based on the inspection report, a conditional water permit is perfected and filed with the county recorders office as a water right associated with the land. Annual, self-reported, water use forms are verified and recorded to document that water is being put to beneficial use and the water right is being maintained. Technicians in the Water Appropriations Division periodically inspect water meters at water depots serving the oil industry. Beginning July 1, 2014, all temporary permits required an application fee. An online permit application system has been developed, which includes an E-Commerce compliant system for the submission of water permit applications and their associated filing fees. Beginning Jan. 1, 2015, all water depots selling water to the oil industry will be required to have a telemetry system that can communicate with the SE Water Depot Database using the SOAP service. The SOAP data is periodically reviewed and compared with meter readings to help ensure data integrity.

Assumptions and Obstacles:

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

ACTION PLAN	TASKS	TARGET DATES
	Guide applicants through the water permit application process	Ongoing
	Maintain records in each water permit application file.....	Ongoing
	Enter appropriate data into water permit database.....	Ongoing
	Conduct 50-75 inspections of “completed” conditional water permits	Annually
	Perfect 25-50 inspected, completed, and conditional water permits	Annually
	Send out requests for annual use reports to permit holders	Nov. & Jan., annually
	Complete the annual water use data collection process	May, annually
	Develop a summary report on annual water use in North Dakota	Sept., annually
	Measure pumping rates to help establish water rights	Ongoing
	Maintain water use records to quantify water rights.....	Ongoing
	Monitor telemetry compliance for industrial water depots	Ongoing
	Processing of meter reports from industrial water depots.....	Ongoing
Inspect all active water depot sites associated with conditional, perfected, and temporary permits	Annually	
Maintain & enhance the On-Line Temporary Water Permit Database system for the processing of 900 to 1,200 temporary water permit applications	Annually	

Water Rights Evaluation & Adjudication

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

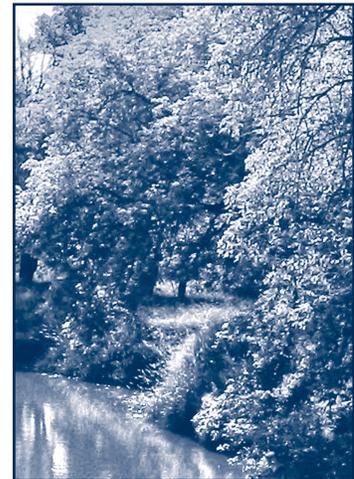
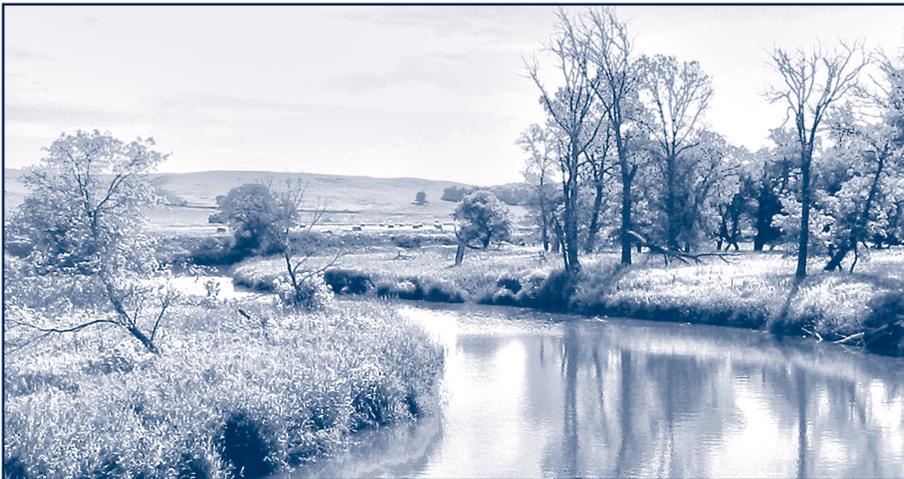
- Pursue cooperative efforts with neighboring states and provinces to plan for beneficial water management of shared water resources.
- Cooperate with agencies that have regulatory authority over North Dakota’s water to protect and enhance the quality and quantity of North Dakota’s water resources.
- Evaluate water permit applications and recommend decisions to the State Engineer.

Project/Program Overview:

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

Assumptions and Obstacles:

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



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

Watershed Planning & Coordination

Agency Goal(s) Satisfied:

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

Project/Program Objectives:

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

Project/Program Overview:

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

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

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

Assumptions and Obstacles:

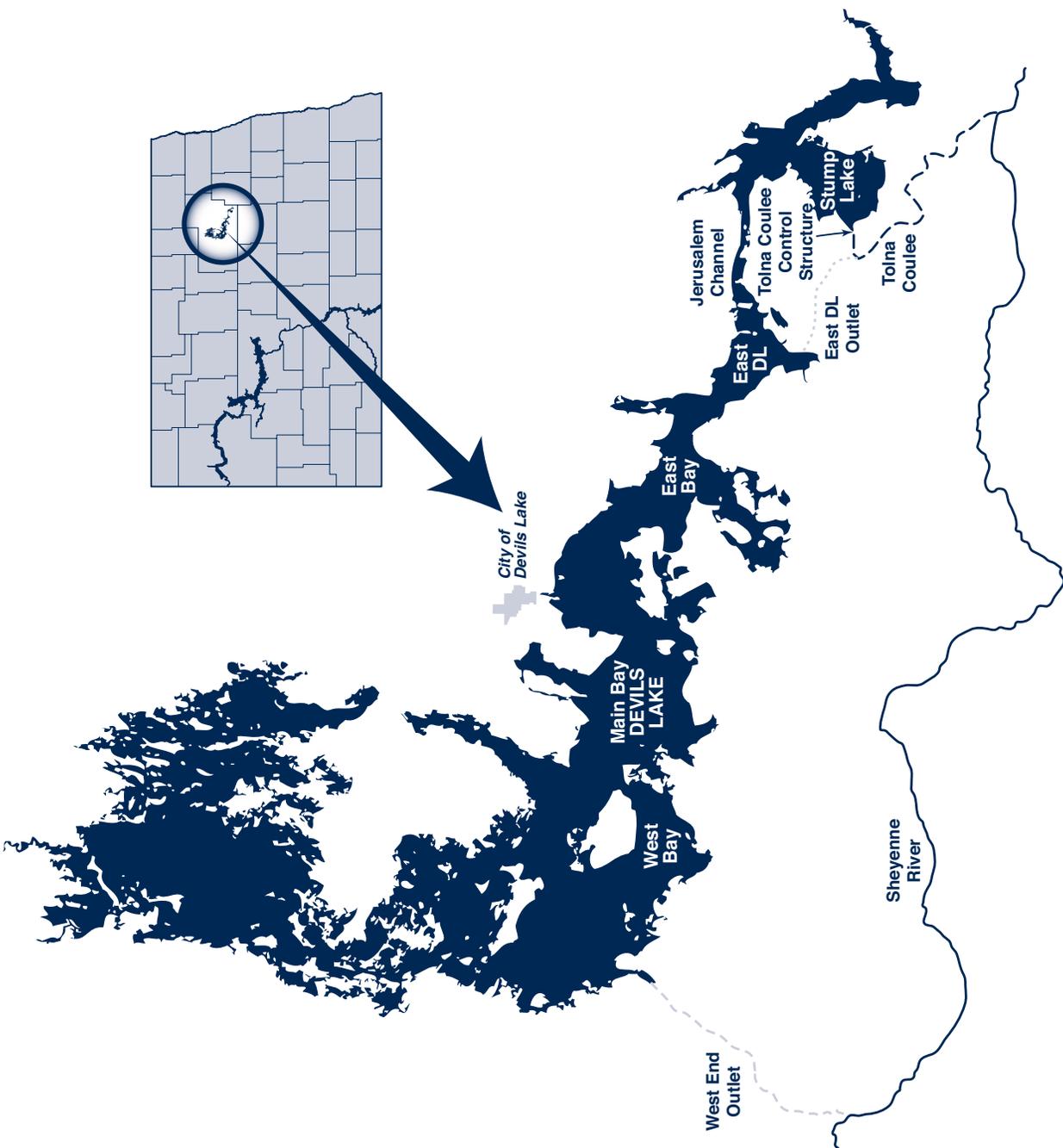
In order for all of the above organizations and planning/coordination efforts to succeed in the future, they will require continued commitment and dedication from all stakeholders involved in those processes.



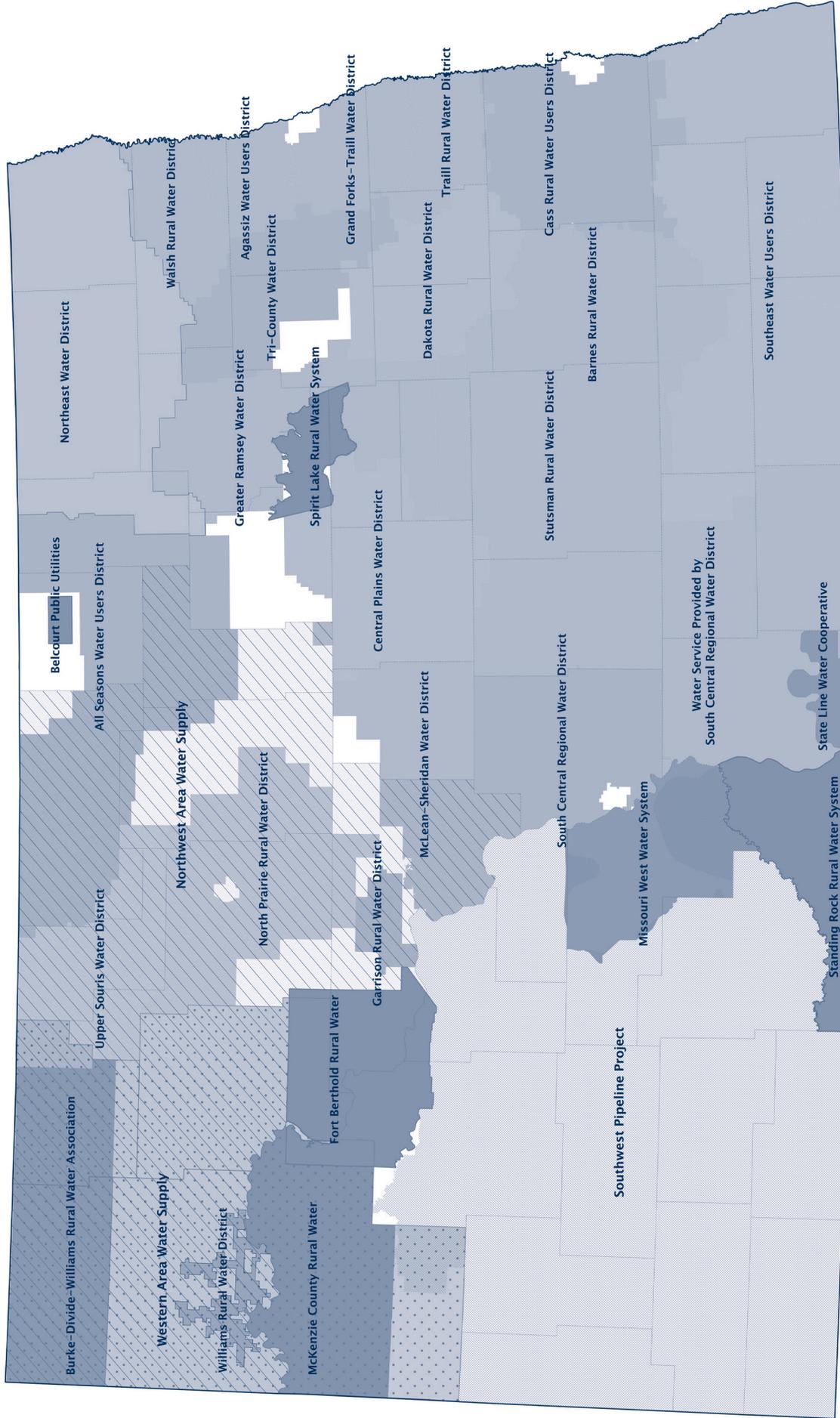
ACTION PLAN	TASKS	TARGET DATES
	Provide technical assistance toward the implementation of the Red River Basin Commission's Natural Resource Framework Plan	Ongoing
	Provide technical assistance toward the implementation of joint water board, water management plans	Ongoing
	Continue to participate as board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

Map Appendix

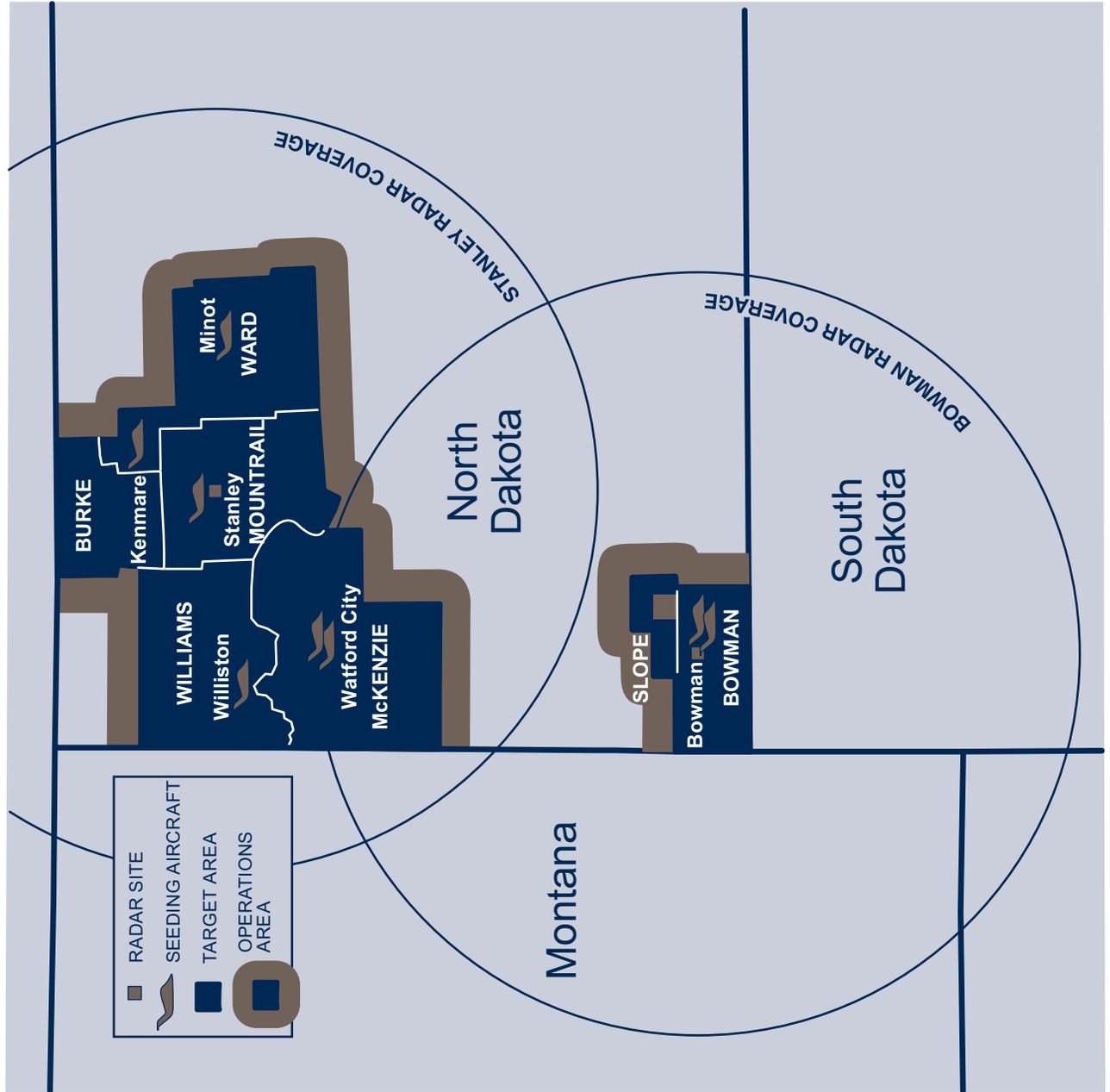
Devils Lake Outlet Project



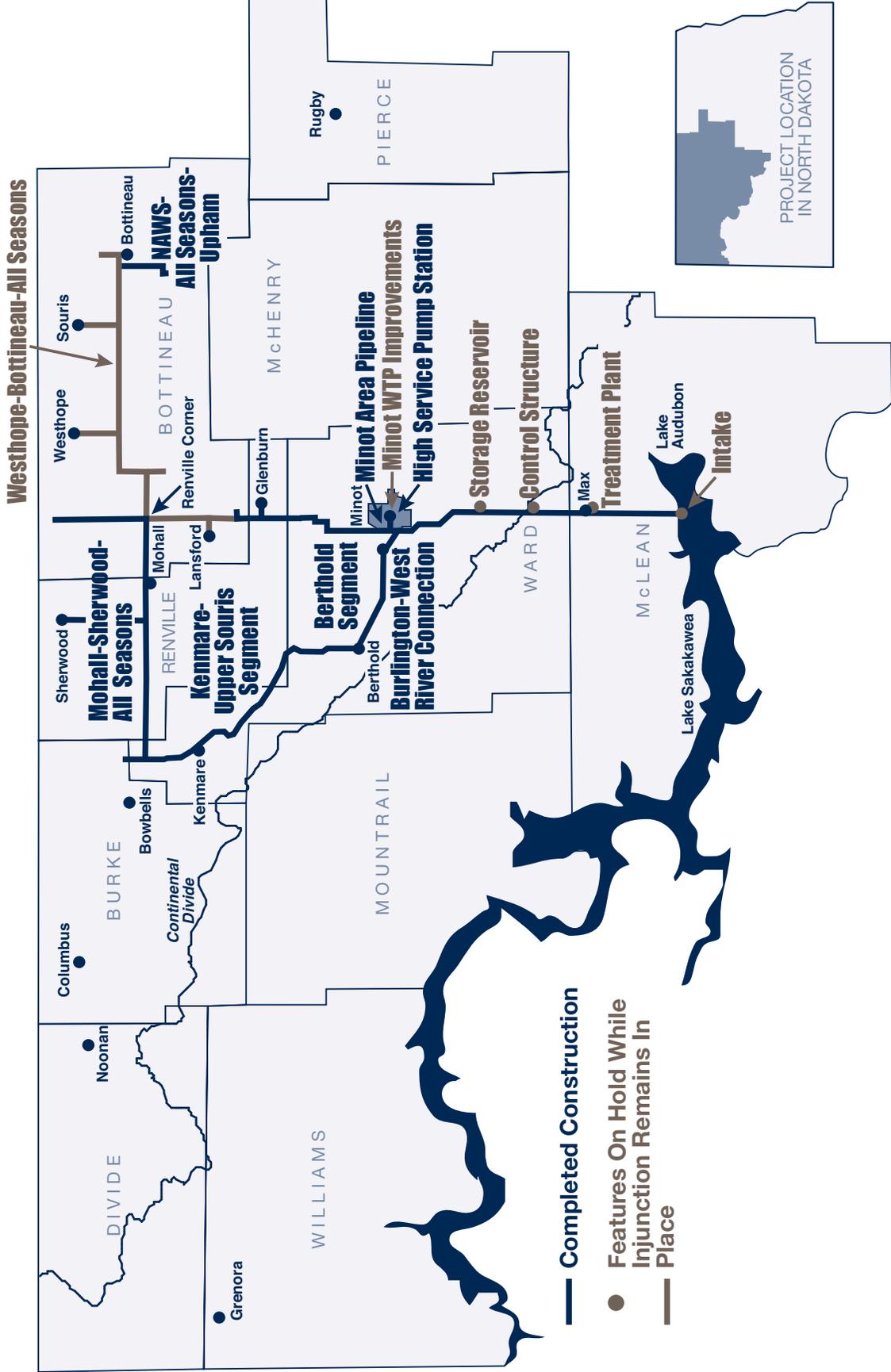
Rural & Regional Water Supply Systems



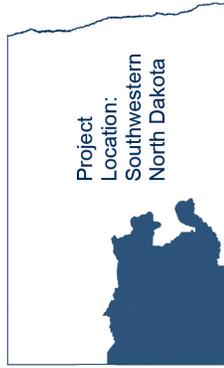
North Dakota Cloud Modification Project



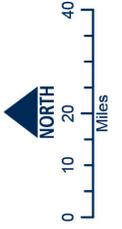
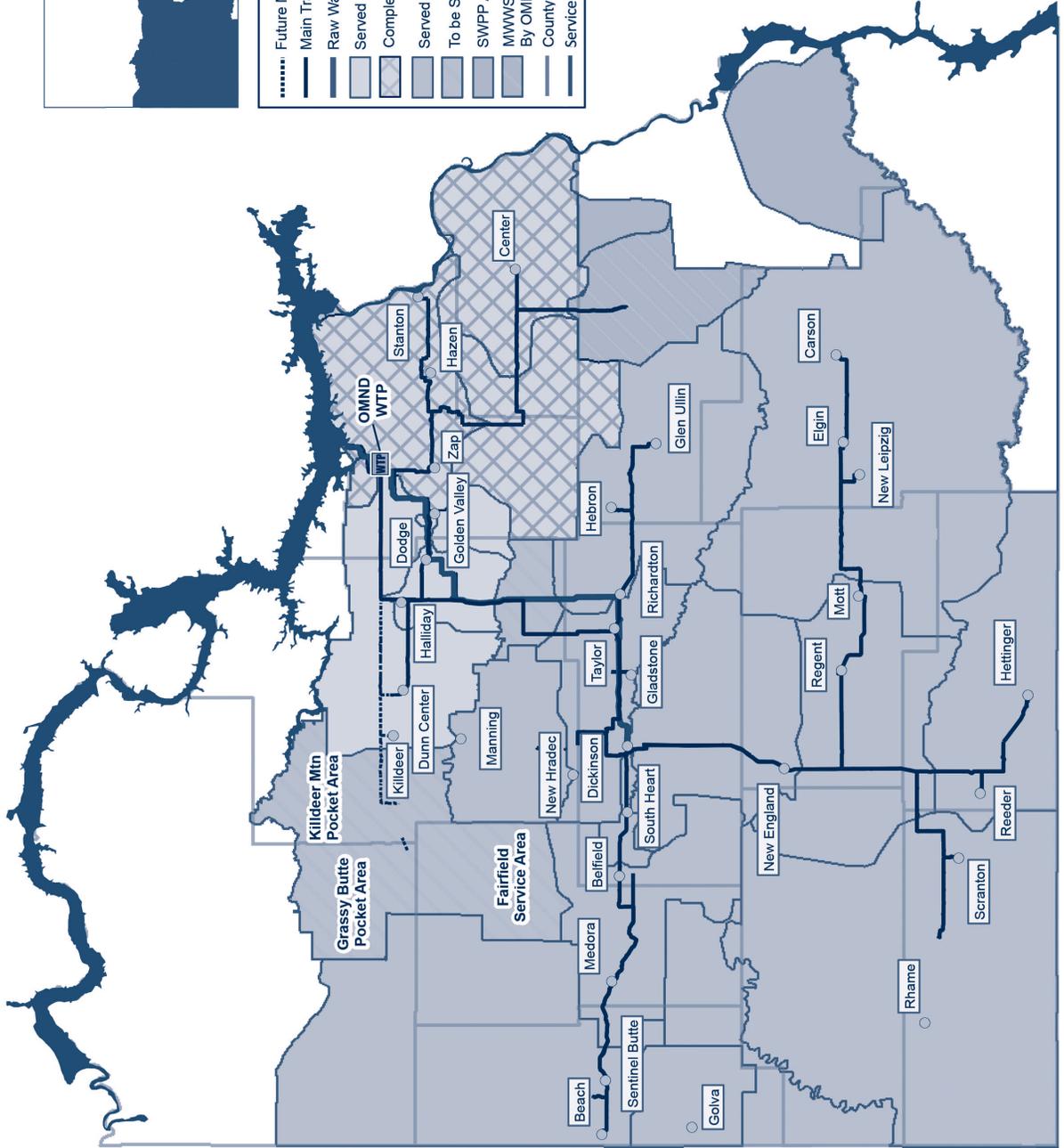
Northwest Area Water Supply Project



Southwest Pipeline Project



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





North Dakota State Water Commission
900 East Boulevard Ave. Dept. 770
Bismarck, ND 58505-0850
www.swc.nd.gov



North Dakota State Water Commission

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Agenda 4

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *Todd* Todd Sando, PE, Chief Engineer/Secretary
SUBJECT: NDSWC New Cost Share Policy
DATE: November 24, 2014

The State Water Commission's new cost share policy became effective October 1, 2014. Even though there have only been a limited number of new cost share requests submitted and processed under the new policy guidelines, so far things have been going well. It should be noted that the new submissions from the City of Grafton Flood Risk Reduction and the Sheyenne River Snagging and Clearing Projects were processed according to the revised policy.

That being said, the new policy has two additional requirements in it that were not a part of the previous policy which are causing some confusion. The first is a requirement that if cost-share is expected to be greater than \$25,000 for engineering services, then the local sponsor is required to follow the engineering selection process found in North Dakota Century Code 54-44.7 and provide a copy of the selection committee report to the Chief Engineer. The other requirement is that a cost share application must include a "Sustainable operation, maintenance, and replacement plan for projects." To date, all applicants have had to be reminded of this requirement.

TS:MW/1753



North Dakota State Water Commission

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Agenda H 1)

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *TS* Todd Sando, P.E, Chief Engineer - Secretary
SUBJECT: NDSWC Cost-Share Request City of Grafton Preliminary and Design
Engineering for the Grafton Flood Risk Reduction Project
DATE: November 24, 2014

In their correspondence dated July 23, 2014, the City of Grafton requested state cost-share participation for their Preliminary and Design Engineering for the Grafton Flood Risk Reduction Project.

In March 2010 the State Water Commission approved \$7,165,000 as a match to a federally funded flood control project. Since that time, the federal funding has changed and there are no federal funds available. The City is pursuing the project with a combination of state and local funds.

The initial study of the Park River in Grafton was performed by the US Army Corps of Engineers (Corps) in the late 70's. Twenty years later, the Corps completed a re-evaluation of the initial study titled "US Army Corps of Engineers 2003 General Re-evaluation Report and Environment Assessment". Since then, the City has spent \$300,000 to update the Corps efforts and continues to work towards a solution to remove the City from the 100-year floodplain.

Based on review of eight alternatives, the City has decided on a flood bypass channel with tie back levees as the preferred alternative to be pursued through this effort.

The project is estimated to cost \$5,000,000, of which all is eligible for 35% cost share assistance, as a preconstruction engineering project, for an amount not to exceed \$1,750,000.

I recommend the State Water Commission approve this request by the City of Grafton for state cost-share participation in their Preliminary and Design Engineering for the Grafton Flood Risk Reduction Project, at an amount not to exceed \$1,750,000 from the funds appropriated to the Commission in the 2013-2015 biennium. This approval is subject to the entire contents of the recommendation contained herein and to the availability of funds.

TS:MW/1771

City of Grafton

www.graftongov.com

July 23, 2014 PO Box 578 • 5 East 4th Street • Grafton, ND 58237
Phone: (701)352-1561 • Fax: (701)352-2730 • TDD: (701)352-1411

Mr. Todd Sando, PE, State Engineer
North Dakota State Water Commission
900 East Boulevard Avenue, Dept. 770
Bismarck, ND 58105-0850

RE: City of Grafton Request for Preliminary and Design Engineering
Grafton Flood Risk Reduction Project

The City of Grafton is requesting State Water Commission (SWC) funding for the Preliminary and Design Engineering for the City's Flood Risk Reduction Project. Previously in 2010 the City had secured \$7,165,000 from the SWC as a match to a federally funded project. Since that time the federal funding has changed and there are no federal funds available, see Exhibit B. Accordingly, the City is pursuing the project with a combination of state and local funds so a new request is being made for a portion of the money that was approved in 2010. The City is making this request based on the proposed SWC cost-share policy of 65% local and 35% state. The City has estimated Preliminary and Design Engineering to be \$5,000,000 and is requesting \$1,750,000 from the SWC.

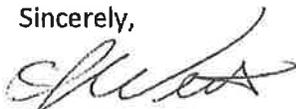
Over the past 6 months the City has spent \$300,000 local dollars to update previous work performed on this project by the USACE. The USACE performed an initial study of the Park River in Grafton in the late '70s. The final document from that study was the "USACE 1983 General Design Memorandum Phase I and Final Supplement to the Final Environmental Impact Statement". About 20 years later, the USACE completed a Re-evaluation of the initial study. The final document from this study was the "USACE 2003 General Re-evaluation Report and Environmental Assessment". Since this study, city leaders have continued to work towards a solution to remove the City from the 100-year floodplain in Grafton.

Our Consultant has reviewed the 6 alternatives from the USACE 2003 Environmental Assessment as well as two additional alternatives. Based on this review and meetings with the City, Plan 2A – Flood Bypass Channel with Tie Back Levees, is being moved forward as the preferred alternative and will be looked at in more detail, see Exhibit C. The current project estimate for Plan 2A was last updated by the USACE in 2013 with a cost of \$52,703,000.

The City is currently looking at starting construction of the project in 2016 and has completed and submitted SFN 60440 and SFN 60551 to the NDSWC for budgeting. A future request for construction and construction engineering will be made as the project progresses.

Thank you for your assistance with our project. If you need additional information please feel free to contact me at 701-352-1561.

Sincerely,



Chris West
Mayor, City of Grafton

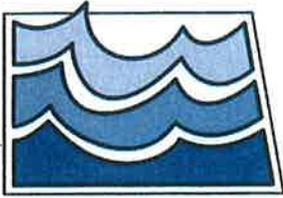


Chris West
Mayor

Nick Ziegelmann
City Administrator

Connie A. Johnson
Auditor-Treasurer

Nicholas B. Hall
Attorney



North Dakota State Water Commission

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Agenda #2

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *TS* Todd Sando, P.E, Chief Engineer - Secretary
SUBJECT: NDSWC Cost-Share Request Southeast Cass WRD 2013/2014 Southeast Cass
Water Resource District's Sheyenne River Snagging and Clearing Project –
Reaches 1, 2 and 3
DATE: November 24, 2014

In their correspondence dated October 28, 2014, the Southeast Cass Water Resource District requested state cost-share participation for their project to snag and clear three reaches of the Sheyenne River. The removal of trees and woody debris will assist with the flow of the river and prevent damage to structures.

Reach 1 consists of snagging and clearing the Sheyenne River from Highway 46 along the Cass County-Richland County line, proceeding downstream to the Horace Diversion Inlet Structure in Section 19 of Stanley Township.

Reach 2 is from the Horace Diversion Inlet Structure in Section 19 of Stanley Township proceeding downstream to the Sheyenne River Closure Structure, north of County Road 10.

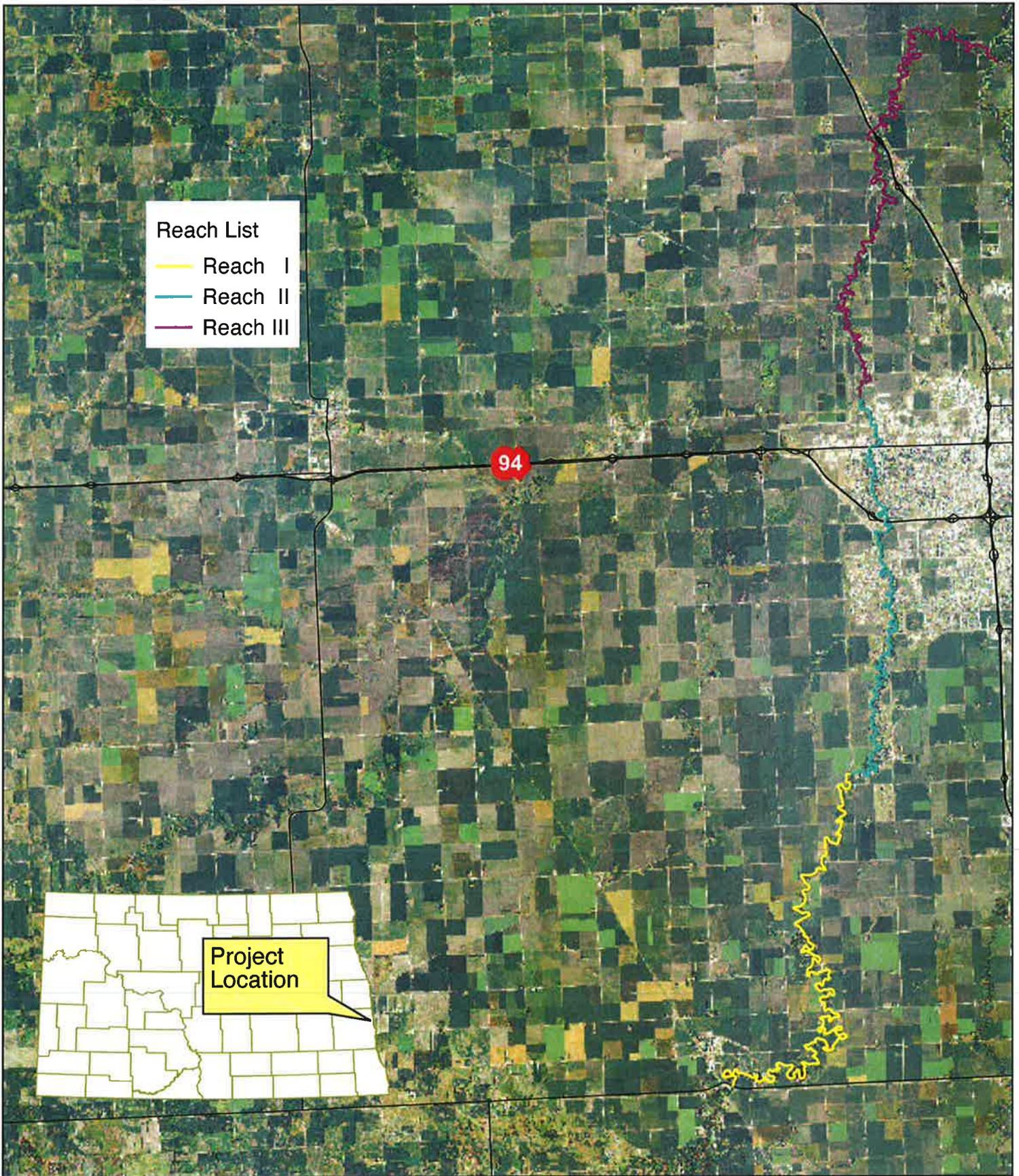
Reach 3 is from the Sheyenne River Closure Structure, north of County Road 10, proceeding downstream to the Red River of the North.

The snagging and clearing work includes the removal of all fallen trees, standing trees in imminent danger of falling into the channel, driftwood, snags, loose stumps and trunks, standing stumps which are encountered within the Sheyenne River channel and which are lodged/leaning on the immediate bank slopes between upstream and downstream limits. All snagged material will be disposed of by removing to an offsite disposal location or by burning onsite.

The project is estimated to cost \$588,000, of which all is eligible for 50% cost share assistance, which includes 10% contingencies, for an amount not to exceed \$294,000.

I recommend the State Water Commission approve this request by the Southeast Cass Water Resource District for state cost-share participation in their Sheyenne River 2014/2015 Reaches 1, 2 and 3 Snagging and Clearing Project, at an amount not to exceed \$294,000 from the funds appropriated to the Commission in the 2013-2015 biennium. This approval is subject to the entire contents of the recommendation contained herein and to the availability of funds.

TS:MW/568



Southeast Cass County Water Resource District

2014/2015 Sheyenne River Snagging & Clearing Project



Date: 11/18/2014
Prepared by: DEC



Consulting Engineering
Land Surveying

2014-2015 SHEYENNE RIVER SNAGGING &
CLEARING PROJECT - REACH I
SOUTHEAST CASS WRD
CASS COUNTY, NORTH DAKOTA

Engineer's Report

The 2014-2015 Sheyenne River Snagging & Clearing - Reach I Project will begin at State Highway 46 along the Cass County-Richland County line and will proceed downstream to the Horace Diversion Inlet Structure in Section 19 of Stanley Township. Types of work anticipated for the Sheyenne River Snagging and Clearing Project include removal and disposal of fallen trees and debris along the Sheyenne River, removal and disposal of accumulated sediment in the vicinity of the fallen trees and debris, and removal and disposal of trees in imminent danger of falling in the Sheyenne River.

The project will be administered on a cost plus basis with a representative of Moore Engineering observing the construction and assisting with the notification of the adjoining landowners. The Southeast Cass WRD plans to hire a competent and experienced contractor to complete the 2014-2015 Sheyenne River Snagging and Clearing - Reach I Project. Following is a summary of the estimated costs for this project.

Summary of Estimated Costs

Construction	\$165,000.00
Engineering & Administration	\$16,500.00
Contingency	\$16,500.00
Total Estimated Costs	\$198,000.00
Less Estimated ND SWC Funds	\$99,000.00
Total Local Cost	\$99,000.00

Dated this 14th day of October, 2014


Kurt Lysne, P.E.
ND Reg # PE-6871
Engineer for the SE Cass WRD



925 10th Avenue East
West Fargo, ND 58078

T: 701.282.4692
F: 701.282.4530

SPECIFICATIONS FOR DEBRIS REMOVAL

SCOPE

The snagging and cleaning work to be performed under these specifications consists primarily of the removal and disposal of standing and fallen trees, snags, driftwood, stumps and debris occurring in the River Channel within the downstream and upstream limits for snagging work as established. The work will also include removal and disposal of fallen timber, driftwood and debris which is lodged on the immediate bank slopes of the channel, and cutting down, removal and disposal of leaning trees overhanging the channel and in eminent danger of falling into the channel.

Contractor will remove all items as shown in these specifications regardless of the number or locations of set-ups and approaches to the river which are required.

All items which, in the opinion of the engineer in charge, are beneficial or helpful in reducing bank erosion and which do not interfere with streamflow will be allowed to remain. Contractor will not be required to move any earth in this project except that which is incidental to other operations.

RIGHT-OF-ENTRY

Access to the river will be provided by the local sponsoring agency as much as possible, however, it will be the contractor's responsibility to make agreements with landowners for access and to reimburse them for damages.

REQUIREMENTS FOR SNAGGING AND DISPOSAL

a) Phase I - Snagging

The snagging work shall include the removal of all fallen trees, standing trees in eminent danger of falling into the channel, driftwood, snags, loose stumps and trunks, standing stumps or objectionable material, which is encountered within the River Channel between upstream and downstream limits established under this contract. Bank clearing, as such, is not required but the snagging work shall also include the removal of fallen trees and driftwood which are lodged on the immediate bank slopes of the channel, and the removal of prominently leaning trees which overhang the channel and are in danger of falling into the channel area. Standing trees shall be cut one foot or less from the ground, measured on the uphill side, except that underwater cutting during normal stages of the river, will not be required. Material and debris resulting from the snagging operations shall be disposed of as stipulated in paragraph (b) below.

b) Phase II - Disposal

All snagged material shall be disposed of in one of the following ways:

- 1) With written consent of the landowner, the snagged material may be piled on property adjacent to the river channel for disposal by burning and burying, burying, or by removal. No burning or burying may begin without a written notice from the engineer authorizing the work.
- 2) Burning during snagging in a "Burning Sled" designed to allow minimum spillage of ashes while being operated on the ice. Ashes from this operation will not be allowed to be disposed of on the ice. Any ashes piled adjacent to the channel shall be disposed of as outlined in item b) 1) above.

In no case shall material be thrown into or left in the river. Care shall be exercised that timber or debris is disposed of in such a manner as to preclude it from being washed into the channel during periods of high water. The placing of stumps, timber, and debris upon private property without the prior written consent of the owner and approval of the engineer in charge, will not be considered satisfactory removal and the contractor will be required to move such materials as is directed by the engineer in charge. Upon completion of the disposal operation, all affected areas shall be cleaned up and left in a neat and clean condition.

SALVAGE OF TIMBER

Property owners shall be afforded an opportunity to acquire any or all timber to be snagged or cleared from their respective properties. When directed by the engineer in charge, all timber and pole wood encountered within the contract limits for snagging shall be neatly trimmed and arranged for removal by respective property owners. In the event that said property owners do not remove this timber, such materials shall become the property of the contractor and shall be disposed of as specified above.

REGULATIONS GOVERNING BURNING

The contractor shall be responsible for burning operations and shall be in compliance with all Federal, state and local laws and regulations relative to burning. The contractor may be required to suspend burning operations because of hazardous weather conditions. At no time shall any fires be left unattended. The proper Fire District shall be notified prior to beginning any burning operation. No burning will be allowed within city limits, in close proximity to buildings, or in areas where the smoke may cause dangerous traffic conditions.



Consulting Engineering
Land Surveying

2014-2015 SHEYENNE RIVER SNAGGING &
CLEARING PROJECT - REACH II
SOUTHEAST CASS WRD
CASS COUNTY, NORTH DAKOTA

Engineer's Report

The 2014-2015 Sheyenne River Snagging & Clearing - Reach II Project will begin at the Horace Diversion Inlet Structure in Section 19 of Stanley Township and will proceed downstream to the Sheyenne River Closure Structure that is located just north of County Road 10. Types of work anticipated for the Sheyenne River Snagging and Clearing Project include removal and disposal of fallen trees and debris along the Sheyenne River, removal and disposal of accumulated sediment in the vicinity of the fallen trees and debris, and removal and disposal of trees in imminent danger of falling in the Sheyenne River.

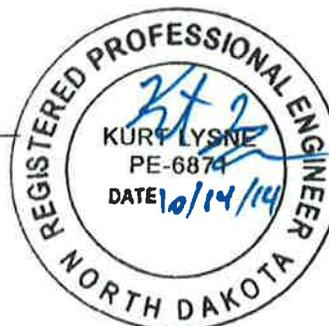
The project will be administered on a cost plus basis with a representative of Moore Engineering observing the construction and assisting with the notification of the adjoining landowners. The Southeast Cass WRD plans to hire a competent and experienced contractor to complete the 2014-2015 Sheyenne River Snagging and Clearing - Reach I Project. Following is a summary of the estimated costs for this project.

Summary of Estimated Costs

Construction	\$175,000.00
Engineering & Administration	\$17,500.00
Contingency	\$17,500.00
Total Estimated Costs	\$210,000.00
Less Estimated ND SWC Funds	\$105,000.00
Total Local Cost	\$105,000.00

Dated this 14th day of October, 2014

Kurt Lysne, P.E.
ND Reg # PE-6871



925 10th Avenue East
West Fargo, ND 58078

T: 701.282.4692
F: 701.282.4530

SPECIFICATIONS FOR DEBRIS REMOVAL

SCOPE

The snagging and cleaning work to be performed under these specifications consists primarily of the removal and disposal of standing and fallen trees, snags, driftwood, stumps and debris occurring in the River Channel within the downstream and upstream limits for snagging work as established. The work will also include removal and disposal of fallen timber, driftwood and debris which is logged on the immediate bank slopes of the channel, and cutting down, removal and disposal of leaning trees overhanging the channel and in eminent danger of falling into the channel.

Contractor will remove all items as shown in these specifications regardless of the number or locations of set-ups and approaches to the river which are required.

All items which, in the opinion of the engineer in charge, are beneficial or helpful in reducing bank erosion and which do not interfere with streamflow will be allowed to remain. Contractor will not be required to move any earth in this project except that which is incidental to other operations.

RIGHT-OF-ENTRY

Access to the river will be provided by the local sponsoring agency as much as possible, however, it will be the contractor's responsibility to make agreements with landowners for access and to reimburse them for damages.

REQUIREMENTS FOR SNAGGING AND DISPOSAL

a) Phase I - Snagging

The snagging work shall include the removal of all fallen trees, standing trees in eminent danger of falling into the channel, driftwood, snags, loose stumps and trunks, standing stumps or objectionable material, which is encountered within the River Channel between upstream and downstream limits established under this contract. Bank clearing, as such, is not required but the snagging work shall also include the removal of fallen trees and driftwood which are lodged on the immediate bank slopes of the channel, and the removal of prominently leaning trees which overhang the channel and are in danger of falling into the channel area. Standing trees shall be cut one foot or less from the ground, measured on the uphill side, except that underwater cutting during normal stages of the river, will not be required. Material and debris resulting from the snagging operations shall be disposed of as stipulated in paragraph (b) below.

b) **Phase II - Disposal**

All snagged material shall be disposed of in one of the following ways:

- 1) With written consent of the landowner, the snagged material may be piled on property adjacent to the river channel for disposal by burning and burying, burying, or by removal. No burning or burying may begin without a written notice from the engineer authorizing the work.
- 2) Burning during snagging in a "Burning Sled" designed to allow minimum spillage of ashes while being operated on the ice. Ashes from this operation will not be allowed to be disposed of on the ice. Any ashes piled adjacent to the channel shall be disposed of as outlined in item b) 1) above.

In no case shall material be thrown into or left in the river. Care shall be exercised that timber or debris is disposed of in such a manner as to preclude it from being washed into the channel during periods of high water. The placing of stumps, timber, and debris upon private property without the prior written consent of the owner and approval of the engineer in charge, will not be considered satisfactory removal and the contractor will be required to move such materials as is directed by the engineer in charge. Upon completion of the disposal operation, all affected areas shall be cleaned up and left in a neat and clean condition.

SALVAGE OF TIMBER

Property owners shall be afforded an opportunity to acquire any or all timber to be snagged or cleared from their respective properties. When directed by the engineer in charge, all timber and pole wood encountered within the contract limits for snagging shall be neatly trimmed and arranged for removal by respective property owners. In the event that said property owners do not remove this timber, such materials shall become the property of the contractor and shall be disposed of as specified above.

REGULATIONS GOVERNING BURNING

The contractor shall be responsible for burning operations and shall be in compliance with all Federal, state and local laws and regulations relative to burning. The contractor may be required to suspend burning operations because of hazardous weather conditions. At no time shall any fires be left unattended. The proper Fire District shall be notified prior to beginning any burning operation. No burning will be allowed within city limits, in close proximity to buildings, or in areas where the smoke may cause dangerous traffic conditions.



Consulting Engineering
Land Surveying

2014-2015 SHEYENNE RIVER SNAGGING &
CLEARING PROJECT - REACH III
SOUTHEAST CASS WRD
CASS COUNTY, NORTH DAKOTA

Engineer's Report

The 2014-2015 Sheyenne River Snagging & Clearing - Reach III Project will begin at the Sheyenne River Closure Structure that is located just north of County Road 10 and will proceed downstream to the Red River of the North. Types of work anticipated for the Sheyenne River Snagging and Clearing Project include removal and disposal of fallen trees and debris along the Sheyenne River, removal and disposal of accumulated sediment in the vicinity of the fallen trees and debris, and removal and disposal of trees in imminent danger of falling in the Sheyenne River.

The project will be administered on a cost plus basis with a representative of Moore Engineering observing the construction and assisting with the notification of the adjoining landowners. The Southeast Cass WRD plans to hire a competent and experienced contractor to complete the 2014-2015 Sheyenne River Snagging and Clearing - Reach I Project. Following is a summary of the estimated costs for this project.

Summary of Estimated Costs

Construction	\$150,000.00
Engineering & Administration	\$15,000.00
Contingency	\$15,000.00
Total Estimated Costs	\$180,000.00
Less Estimated ND SWC Funds	\$90,000.00
Total Local Cost	\$90,000.00

Dated this 14th day of October, 2014


Kurt Lysne, P.E.
ND Reg # PE-6871
Engineer for the SE Cass WRD



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West Fargo, ND 58078

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SPECIFICATIONS FOR DEBRIS REMOVAL

SCOPE

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Contractor will remove all items as shown in these specifications regardless of the number or locations of set-ups and approaches to the river which are required.

All items which, in the opinion of the engineer in charge, are beneficial or helpful in reducing bank erosion and which do not interfere with streamflow will be allowed to remain. Contractor will not be required to move any earth in this project except that which is incidental to other operations.

RIGHT-OF-ENTRY

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REQUIREMENTS FOR SNAGGING AND DISPOSAL

a) Phase I - Snagging

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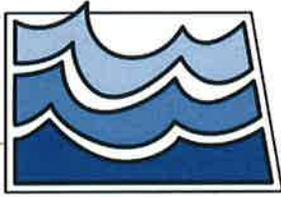
In no case shall material be thrown into or left in the river. Care shall be exercised that timber or debris is disposed of in such a manner as to preclude it from being washed into the channel during periods of high water. The placing of stumps, timber, and debris upon private property without the prior written consent of the owner and approval of the engineer in charge, will not be considered satisfactory removal and the contractor will be required to move such materials as is directed by the engineer in charge. Upon completion of the disposal operation, all affected areas shall be cleaned up and left in a neat and clean condition.

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North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TTY 800-366-6888 • FAX 701-328-3696 • INTERNET: <http://swc.nd.gov>

Agenda (3)

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *Todd* Todd Sando, PE, Chief Engineer/Secretary
SUBJECT: NDSWC Cost-Share Participation Request – City of Valley City Permanent
Flood Protection Project – Cost Overrun
DATE: November 24, 2014

In their correspondence dated November 13, 2014, the City of Valley City requested additional state cost-share participation for their Permanent Flood Protection Project.

In May 2014 the State Water Commission approved \$8,679,680 (80%) grant funding (engineering, legal and administrative are ineligible for grant) and a \$3,860,614 (20%) loan for the remaining costs for the Valley City Permanent Flood Control Project.

The project will create permanent flood protection, reroute utilities out from underneath the proposed levees and install storm water pumping stations for the area behind the flood protection system. The flood protection design height will account for 3 feet of freeboard above the 100-year (1.0% chance) flood event for the clay levee portion of the project and 4 feet of freeboard at the floodwall locations.

The flood protection will consist of a combination of permanent structures, such as clay levees and concrete floodwalls, as well as removable floodwall closures for protection from the floodwaters.

Bids were opened on November 6, 2014. In reviewing the bids, the total project cost increased to \$13,850,506. Previous total cost of the project was \$12,540,294. In reviewing the bids and original estimates, the change in project costs are tied to the concrete floodwalls and bid alternatives. Discussion with the local contractor has shown that material costs and work force shortage have contributed to the cost increase.

The flood control project is estimated to now cost \$13,850,505, of which \$12,696,296 is eligible for 80% cost share, as a flood control project for an amount not to exceed grant funding of \$10,157,037. Engineering, legal and administrative costs are considered ineligible for grant. In addition, the City will be eligible for a loan for the remaining costs, not to exceed the previously approved \$3,860,614. With the already approved \$8,679,680 in grant funding and \$3,860,614 in loan funding, an additional grant of \$1,477,357 is recommended.

In June, 2013, preliminary and design engineering for the project were approved at 85% state cost share under a separate Water Commission approval and agreement. Total cost of the project was \$412,500 for a cost share amount of \$350,625. Engineering costs have increased due to an increase in design engineering for bank stabilization (bio-engineering), backup generators at the storm water lift stations and three architectural designs for the floodwalls. Total cost of the preliminary and design engineering now is \$597,500.

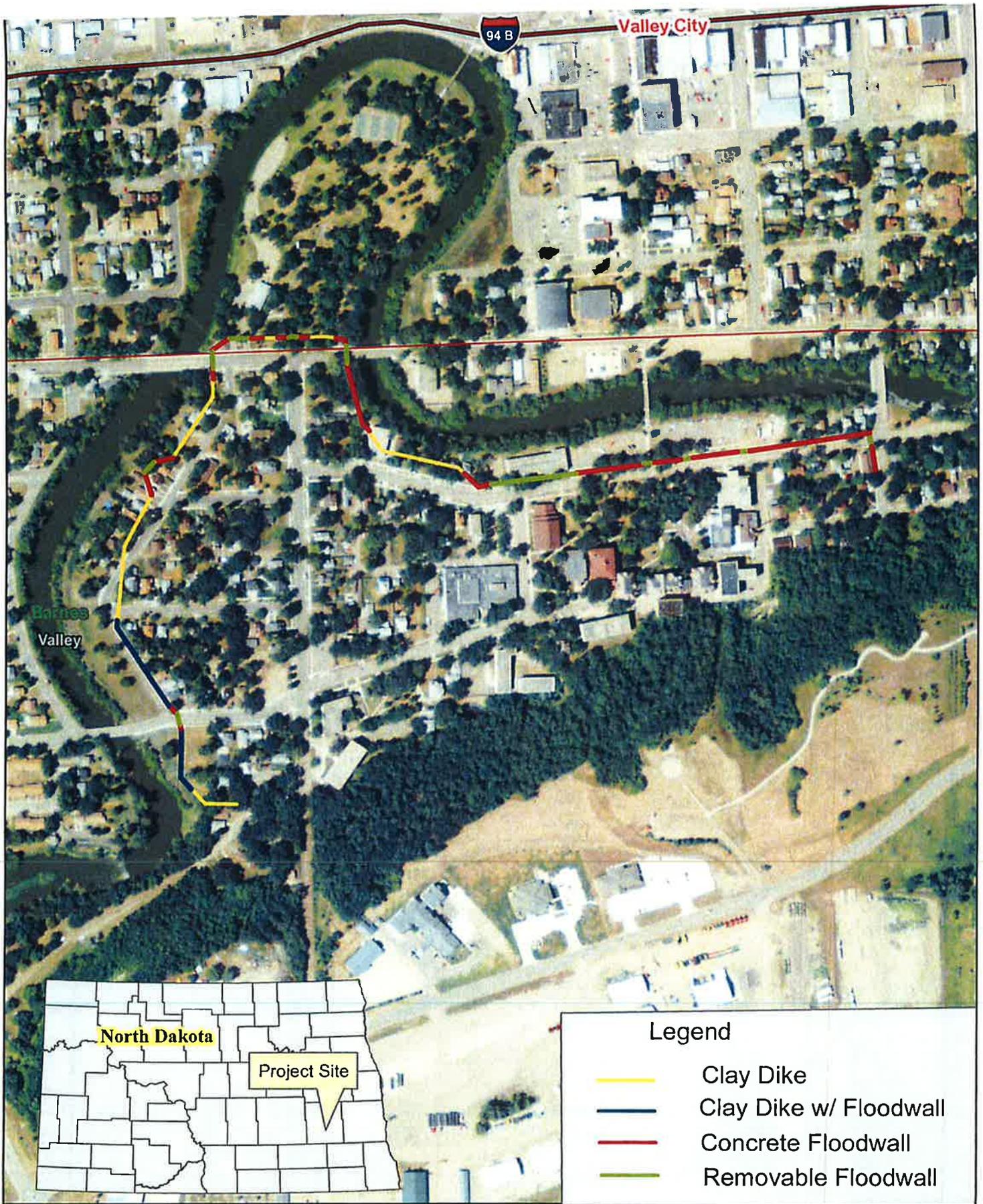
JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
CHIEF ENGINEER AND SECRETARY

The preliminary and design engineering portion of the project is now estimated to cost \$597,500 of which all is eligible for 85% cost share assistance for an amount not to exceed \$507,875. With the previously approved \$350,625, an additional \$157,250 is recommended. There was no loan funding previously approved for this project.

I recommend that the State Water Commission approve this request by the City of Valley City for state cost share grant participation cost overrun in the Valley City Permanent Flood Control Project at 80%, for an amount not to exceed \$1,477,357 in additional grant funding (\$10,157,037 total) and the preliminary and design engineering at 85% for an additional amount not to exceed \$157,250 in grant funding (\$507,875 total) from the funds appropriated to the State Water Commission in the 2013-2015 biennium. In addition, the City is eligible for a loan from the State Water Commission to cover the remaining cost of the construction portion of the project. This approval is subject to the entire contents of the recommendation contained herein, obtaining all necessary permits and availability of funds.

TS:MW/1504



Legend

-  Clay Dike
-  Clay Dike w/ Floodwall
-  Concrete Floodwall
-  Removable Floodwall

City of Valley City
 Permanent Flood Protection



◇ November 13, 2014

Melissa Ward
North Dakota State Water Commission
900 E. Boulevard Ave
Department 770
Bismarck, ND 58505-0850

Re: City of Valley City
Permanent Flood Protection - Phase 1

Dear Ms Ward:

On behalf of the City of Valley City, please find attached the Cost Share Request form, updated Cost Estimate, and Tabulation of Bids for the Valley City Permanent Flood Protection - Phase 1 project. The request reflects increases in the construction costs, completion of the design engineering for the project, and inclusion of construction engineering.

Bids were opened on November 6, 2014, increasing the total project costs to \$14,488,004.52. The original state participation was \$9,030,307.88 of the \$11,262,103.60 total project as approved at previous State Water Commission meetings. This request is for an additional \$2,557,970.74 of state participation in the project. The requested state participation amount is based on the 85% level for preliminary and design engineering approved at the June 19, 2013 meeting and the 80% level for construction approved at the May 29, 2014 meeting.

In reviewing the bids and original estimates the change in project costs can be tied to the concrete flood walls and Bid Alternates. Discussion with a local contractor has shown that material costs (concrete prices have risen 20%) and a work force shortage have contributed to the increase. The work force shortage has been seen across the state and is being observed locally at the CHS fertilizer plant under construction 20 miles west of Valley City. The projected project costs assumes that all Bid Alternates will be chosen. A final determination on Bid Alternates will take place at the November 18th Valley City Commission meeting. Following that meeting, updated total project costs will be provided. Bid Alternates 1 and 2 are associated with upgraded architectural aspects. Bid Alternate 3 is in regards to backup generators at the proposed storm water lift stations.



The Preliminary and Design Engineering was approved at \$412,500 at the June 19, 2013 meeting. Since that meeting the scope and complexity of the project has changed significantly. The final project included design for bank stabilization (bio-engineering), backup generators at the storm water lift stations, and three architectural designs for the flood walls.

This request also includes inclusion of Construction Engineering for the construction phase of the project in the amount of \$1,154,208.71. This will complete all state requests for the Phase 1 project.

If you have any questions or concerns please contact me at 701-845-9439.

Sincerely,

KLJ

A handwritten signature in blue ink, appearing to read 'Erik Gilbertson'. The signature is fluid and stylized, with a long horizontal stroke at the end.

Erik Gilbertson, PE
Project Engineer

Project #: 5413103

Attachments: Cost Estimate, Cost Share Form, Tabulation of Bids



North Dakota State Water Commission

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Agenda Item

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *Todd* Todd Sando, P.E., Chief Engineer-Secretary
SUBJECT: USGS Stream Gage Joint Funding Agreement
DATE: November 24, 2014

The State Water Commission participated in a cooperative statewide hydrologic monitoring program with the US Geological Survey since the 1950s. Joint Funding Arrangement for data collection consisting of three components: stream gaging to measure flow rate and volume, stream and lake water quality monitoring, and aquifer water level and water quality monitoring. This data collection system consists of:

Surface Water gage sites (49 Total, of which SWC shares in the cost of 44)

- 16 Seasonal
- 27 Continuous
- 5 Lake
- 1 Miscellaneous

Groundwater Observation Wells

- 88 most measured monthly
- 23 Groundwater Observation Wells equipped with real-time monitoring

Water Quality monitoring

- 43 Surface water sites (semi-annually)
- 9 Chain of Lakes network (quarterly)
- About 1/3 of Groundwater network (25-30 wells, annually)

The stream gaging network provides stream flow statistics that are needed for a wide variety of applications including the design of flood control structures, bridges, culverts, general water resource planning, floodplain mapping, water management and permitting. Many of the gaging sites provided real-time stream stage data which was crucial in responding to the flood events that occurred in 2009 and 2011.

Water samples are collected for chemical analysis at specific stream sites during high and low-flow periods and at selected lakes. This data is used to determine the suitability of the chemical quality for beneficial use, interpret area hydrology, and to assess changes in the quality resulting from the stresses of both man-induced activities and natural processes caused by climatic variations. The water quality data also provides planners with a basis to assess if waste-water resulting from beneficial use can be discharged into surface water bodies.

Monitoring ground-water levels and quality in wells completed in selected aquifers throughout the state provides essential information used to allocate and manage the state's ground-water

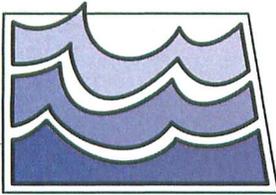
NDSWC MEMORANDUM
RE: USGS STREAM GAGE JOINT FUNDING AGREEMENT
CONTINUED

resources. Recently, the data collection system was upgraded to include real-time monitoring capabilities to the continuous recorder wells.

The total cost of the monitoring program for FY2015 is \$980,930. The State Water Commission portion of this amount is \$529,085 or 54%. Of this amount, \$23,190 will be direct laboratory analysis services provided by the State Water Commission in conjunction with the cooperative work, therefore repay from the SWC to the USGS will be \$505,895, or 51.5%.

I recommend that the State Water Commission approve the FY 2015 Joint Funding Arrangement with the USGS North Dakota Water Science Center not to exceed \$505,895 from the funds appropriated to the State Water Commission in the 2013-2015 biennium.

TS:JCP;jk:(2041)



North Dakota State Water Commission

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Agenda

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *TSS* Todd Sando, P.E., Chief Engineer–Secretary
SUBJECT: North Dakota Drinking Water State Revolving Loan Fund
DATE: November 24, 2014

The United States Congress authorized the Drinking Water State Revolving Loan Fund (DWSRF) under the 1996 Safe Drinking Water Act Amendments with the intention of assisting public water systems in complying with the Act. Funding is in the form of a loan program administered by the Environmental Protection Agency through the North Dakota Department of Health (Department). The Department has prepared the 2015 Intended Use Plan, which contains the Comprehensive Project Priority List and the Fundable List. The plan was available to the public for review and comment, with a public hearing held on November 12, with comments accepted until November 18.

In accordance with NDCC Chapter 61-28.1, the Department must administer and disburse DWSRF funds with the approval of the State Water Commission. Also, the Department must establish assistance priorities and expend grant funds pursuant to the priority list for the drinking water treatment revolving loan fund, after consulting with and obtaining the approval of the State Water Commission.

The process of prioritizing new or modified projects is completed on an annual basis. The list includes 220 projects, with a cumulative total project cost of \$724.2 million. Available funding for the DWSRF program for 2015 is anticipated to be approximately \$14 million with 10 projects. The present loan interest rate for eligible public water systems that qualify for tax-exempt financing is 2.5 percent. The present loan interest rate for eligible public water systems that do not qualify for tax-exempt financing is 3.5 percent. All loans include a 0.5 percent administration fee. The repayment period for DWSRF loans is 20 years. New in 2015 is the option for extended term financing beyond the base 20-year loan repayment period. Extended term financing allows for repayment periods to be 30 years or the useful life of the project, whichever is less.

Following Commission approval of the 2015 Comprehensive Project Priority List and Fundable List, the Department will submit an application to the Environmental Protection Agency for the program. Commission approval will enable the Department to proceed with disbursement of funds, once the Environmental Protection Agency has approved the capitalization grant. The Department intends to disburse DWSRF funds according to the fundable list and bypass provisions contained in the 2015 plan.

I recommend that the State Water Commission approve the attached Comprehensive Project Priority List and the Fundable List, and authorize the Department to administer the 2015 Intended Use Plan for the Drinking Water State Revolving Loan Fund. This approval is subject to the entire contents contained herein.

TSS:JNM:pdh/AS-HEA

JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
CHIEF ENGINEER AND SECRETARY



MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission (Commission)

FROM: North Dakota Department of Health (Department)

RE: Drinking Water State Revolving Loan Fund (DWSRF)
Request for Approval of the Comprehensive Project Priority List and Fundable List, as Shown in the Final 2015 Intended Use Plan (IUP) for the North Dakota DWSRF, and Approval to Administer and Disburse DWSRF Funds Pursuant to the List and the Final 2015 IUP

DATE: November 19, 2014

On December 5, the Department will appear before the Commission, as required by state law, to request the above approval. This approval will enable the Department to: apply to the Environmental Protection Agency (EPA) for additional federal capitalization funds for the DWSRF of \$9,000,000 for FY2015; and, administer and disburse DWSRF funds pursuant to the 2015 project list and IUP.

The IUP is a document required by the EPA as part of the DWSRF capitalization grant application process. IUPs must include, among other things, a comprehensive project priority list and fundable list that are based on an EPA-approved priority ranking system.

The comprehensive project priority list and fundable list are included as Attachment 2 of the IUP. The comprehensive project priority list represents an updated master list of projects submitted to the Department for potential DWSRF loan assistance. The fundable list represents the highest ranked projects from the comprehensive list that are anticipated to apply for DWSRF assistance by December 31, 2015. All projects have been ranked in accordance with an EPA-approved priority ranking system, which was developed by the Department using a consultative process.

Both project lists are dynamic. The comprehensive list changes yearly as projects are added, completed, reranked, or withdrawn. The fundable list will change if higher ranked projects not on the list become ready to proceed, if projects on the list do not proceed, if project costs change, or if other funding sources are involved. Also, the Department, through the issuance of leveraged bonds, is prepared to assist additional projects (beyond those on the fundable list) that become ready to proceed in the short term.

In summary, the Department has met EPA requirements in this matter. Therefore, the Department respectfully requests the above approval to enable continued DWSRF assistance for needed drinking water projects statewide.

Questions may be directed to David Bruschwein at 328-5259.

**2015 INTENDED USE PLAN
FOR THE
NORTH DAKOTA DRINKING WATER STATE REVOLVING LOAN FUND**

**PREPARED BY THE
DRINKING WATER STATE REVOLVING LOAN FUND PROGRAM
MUNICIPAL FACILITIES DIVISION
ENVIRONMENTAL HEALTH SECTION
NORTH DAKOTA DEPARTMENT OF HEALTH**

November 19, 2014

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ATTACHMENTS

- Attachment 1- Eligible and Ineligible Projects and Project-Related Costs Under the Drinking Water State Revolving Loan Fund (DWSRF) Program
- Attachment 2- Comprehensive Project Priority List And Fundable List
- Attachment 3- Priority Ranking System for Financial Assistance Through the Drinking Water State Revolving Loan Fund (DWSRF) Program
- Attachment 4- Nonproject Set-Aside and Loan Fee Activity Table
- Attachment 5- Amounts Available to Transfer Between State Revolving Fund Programs
- Attachment 6- Sources and Uses Table

A. Introduction

On August 6, 1996, President Clinton signed into law the Safe Drinking Water Act (SDWA) Amendments of 1996 (P.L. 104-182). Section 1452 of the SDWA authorizes a Drinking Water State Revolving Loan Fund (DWSRF) program. It further requires the U.S. Environmental Protection Agency (EPA) to enter into agreements with and make capitalization grants to eligible states to assist public water systems (PWSs) in financing the costs of infrastructure needed to achieve or maintain compliance with the SDWA and to protect public health.

North Dakota's DWSRF federal allotments for fiscal years (FY) 1997 through 2014 totaled \$171,083,767 and the anticipated 2015 allotment is \$9,000,000. Allotted funds are provided by the EPA through capitalization grants and matched 20% by North Dakota.

DWSRF funds may be used for: loans, loan guarantees, as a source of reserve and security for leveraged loans (the proceeds of which must be placed in the DWSRF), to buy or refinance existing local debt obligations (publicly-owned systems only) where the initial debt was incurred and construction started after July 1, 1993, and to earn interest prior to disbursement of assistance. To the extent that there are a sufficient number of eligible projects, at least 15 percent of the funds available for construction must be annually used to provide loan assistance to PWSs that serve fewer than 10,000 persons. Up to 30 percent of the funds available for construction may also be used to provide subsidized loans to disadvantaged communities. A portion of the DWSRF allotments may also be used for nonproject set-aside activities such as: administration (up to 4 percent), state program assistance (up to 10 percent), small system technical assistance (up to 2 percent), and local assistance and state programs including the delineation and assessment of source water protection areas (up to 10 percent for any one activity with a maximum of 15 percent for all activities combined).

PWSs eligible for DWSRF assistance include community water systems, both publicly- and privately-owned, and nonprofit noncommunity water systems. Federally-owned PWSs are not eligible to receive DWSRF assistance. Attachment 1 depicts the types of projects and project-related costs that are eligible and ineligible for DWSRF assistance.

Section 1452(b) of the SDWA requires each state to annually prepare an Intended Use Plan (IUP). The IUP must describe how the state intends to use the DWSRF funds to meet the objectives of the SDWA and further the goal of protecting public health. The IUP must be made available to the public for review and comment prior to submitting it to the EPA as part of the capitalization grant application. Specifically, the IUP must include:

1. A priority list of projects, including a description of the projects and the present size of the PWSs served.

2. A description of the criteria and methods to be used for the distribution of funds.
3. A description of the financial status of the DWSRF program, including the use of set-asides along with funds reserved, and the amount of funds that will be used to assist disadvantaged communities; and,
4. A description of the short and long-term goals of the DWSRF program, including how the capitalization grant funds will be used to ensure compliance and protect public health.

This document is intended to serve as the state of North Dakota's IUP for 2015 and will stay in effect until superseded by a subsequent IUP. As per the authority granted to the North Dakota Department of Health (NDDH) under NDCC Chapter 61-28.1, this document, as amended based on comments received from the public, will be incorporated into a capitalization grant application and submitted to the EPA to further capitalize the state's DWSRF program in the amount of \$9,000,000 (anticipated amount). State match bonds were issued in 2011 to provide the 20 percent match for capitalization grants from FY2012-FY2017.

B. Priority List of Projects

Background

States are required to develop and maintain a comprehensive priority list of eligible projects for funding and identify projects that will receive funding in the first year after the capitalization grant award. In determining funding priority, states must ensure, to the maximum extent practicable, that priority for the use of funds be given to projects that: 1) address the most serious risks to human health, 2) are necessary to ensure compliance under the SDWA, and 3) assist systems most in need on a per household basis (i.e., affordability).

Development Process

As part of the IUP development process, all potential DWSRF loan recipients were requested to notify the NDDH if they had a drinking water project not presently on the list for which they were interested in pursuing DWSRF financial assistance. Systems with already ranked and listed projects were requested to provide the NDDH with a written update for each project either not yet under construction, or under construction using other than DWSRF funds. The updates were to include a detailed project description and cost estimate, the amount of DWSRF funds needed, and, as applicable, the anticipated construction start date. In lieu of this information, systems were asked to inform the NDDH if they no longer intended to complete a project, or no longer intended to complete a project using DWSRF assistance. Systems requesting

ranking of new projects were provided ranking questionnaires. Requests for project reranking or deletion were evaluated on a case-by-case basis, with ranking questionnaires provided as needed. Several projects were deleted due to completion (with or without DWSRF assistance) or the acquisition of other funding sources.

Finalized Project Priority Lists may be amended to include new non-emergency projects. Amendments are subject to public review and comment and may require State Water Commission approval.

Comprehensive Project Priority List

See Attachment 2.

Fundable List

The fundable list represents those projects from the comprehensive project priority list anticipated to receive loan assistance this year. The list of projects is based on anticipated start dates, projected funding needs, and expected available loan funds (see Section E). The list will change if such information or assumptions vary, if higher ranked projects not on the list become ready to proceed, or if projects on the list are bypassed (see Section C).

C. Criteria and Methods for the Distribution of Funds

Background

A DWSRF may provide assistance only for expenditures (excluding operation, maintenance, and monitoring) of a type or category which will facilitate compliance or otherwise significantly further health protection under the SDWA. Projects eligible for DWSRF financial assistance include investments to: address present SDWA exceedances, prevent future SDWA exceedances (of regulations presently in effect), replace aging infrastructure, restructure or consolidate water supplies, and buy or refinance existing debt obligations (publicly-owned systems only) where the initial debt was incurred and construction started after July 1, 1993. Attachment 1 provides additional information concerning the types of projects and project-related costs that are eligible for DWSRF financial assistance.

To the maximum extent possible, states are required to prioritize projects needed for SDWA compliance, projects that provide the greatest public health protection, and those projects that assist systems most in need based on affordability. The information below describes the process used by the NDDH to select projects for potential DWSRF assistance.

Priority Ranking System

The priority ranking system was developed by the NDDH, the state agency with primary enforcement authority for the SDWA. The priority ranking system is designed to ensure that DWSRF funds are focused on projects that address the most serious risks to human health, rectify SDWA compliance problems, and assist those systems most in need based on affordability considerations. The priority ranking system has received both EPA Region VIII and Headquarter concurrence. The priority ranking system will be amended as needed to reflect the changing nature of the SDWA and the DWSRF Program. Any significant amendments will be presented for public review and comment in an IUP.

Ranking and Project Bypass Considerations

It is the intent of the NDDH that DWSRF funds are directed towards North Dakota's most pressing SDWA compliance problems and public health protection needs. To this end, the NDDH reserves the right to require the separation, if feasible, of project components into separate projects if necessary to focus on critical water supply problems. Project components which are separated will be ranked independently. Projects for existing PWSs, including refinancing projects, will be given preference over projects for the development of new water systems.

Under the SDWA, DWSRF funds may be used to buy or refinance existing local debt obligations (publicly-owned systems only) where the initial debt was incurred and construction started after July 1, 1993. DWSRF assistance requests of this type, if eligible, will be ranked based on the original purpose and success of the constructed improvements. In the event of a tie in project rankings, new projects for existing systems will be given preference over refinancing projects.

The NDDH reserves the right to fund lower-ranked projects ahead of higher-ranked projects based on the considerations below. To the maximum extent possible, the NDDH will work with bypassed projects to ensure that they will be eligible for funding in the following fiscal year. Criteria reviewed in bypassing a project included:

1. Readiness to proceed
2. Willingness to proceed (i.e., applicant withdraws project from consideration, obtains other funding sources, or is nonresponsive)
3. Emergency conditions (i.e., an unanticipated failure occurs requiring immediate attention to protect public health)
4. Financial (includes inability to pay and loan repayment issues), technical, or managerial capability

5. Meet the 15 percent requirement (i.e., funding lower-ranked project would satisfy the requirement that at least 15 percent of the funds available for construction be annually used to provide loan assistance to PWSs that serve fewer than 10,000 persons)
6. Meet the Green Project Reserve requirement
7. Initial ranking score cannot be verified

The NDDH, without going through a public review process, reserves the right to fund unanticipated, non-ranked emergency projects determined to require immediate attention to protect public health. Such assistance will be limited to eligible PWS types and project features, and to situations involving acute contaminants, loss or potential loss of a water supply in the near future, or that otherwise represent an unreasonable risk to health.

Capacity

Section 1452 of the 1996 SDWA Amendments precludes states from providing DWSRF assistance to any eligible PWS that lacks the capacity to maintain SDWA compliance unless the PWS owner or operator agrees to undertake feasible and appropriate changes to ensure compliance over the long term. States are also precluded from providing DWSRF assistance to any eligible PWS that is in significant noncompliance with any requirement of a National Primary Drinking Water Regulation (NPDWR) or variance unless such assistance will ensure compliance. PWS capacity, in the context of the SDWA, refers to the overall technical, managerial, and financial capability of a PWS to consistently produce and deliver drinking water meeting all NPDWRs. The NDDH has the legal authority and responsibility under NDCC Chapter 61-28.1 to ensure PWS capacity.

The NDDH will use the DWSRF loan application as the principal control point for capacity assessment. Information from the loan application, and other available and relevant information (such as SDWA compliance data, sanitary survey reports, and operator certification status), will be evaluated to assess capacity at present and for the foreseeable future. The North Dakota Public Finance Authority (PFA), as financial agent for the DWSRF Program through formal agreement, will evaluate the financial information requested in the loan application. Based upon input provided by the DWSRF Program regarding technical and managerial capability, the PFA will make recommendations to the DWSRF Program concerning financial capability. The final decision regarding overall capacity will be made by the DWSRF Program.

As required by the SDWA, DWSRF assistance will be denied to applicants that are considered a Priority System because they score eleven or higher in the Enforcement

Tracking Tool if it is determined that the project will not ensure compliance. Likewise, DWSRF assistance will be denied to applicants that lack capacity if they are unwilling or unable to undertake feasible and appropriate changes to ensure capacity over the long term. The lack of capacity at the time of loan application will not preclude DWSRF assistance if the project will ensure compliance, or the applicant agrees to implement changes that will rectify capacity problems. On a case-by-case basis, special conditions may be included in loan agreements to rectify compliance and/or capacity problems. As needed and appropriate, the NDDH will utilize other specific legal authorities as control points to ensure capacity. This includes the review and approval of plans and specifications. Under North Dakota Century Code Chapter 61-28.1 and North Dakota Administrative Code Chapters 33-03-08 and 33-18-01, the NDDH is both empowered and required to review and approve plans and specifications for all new or modified drinking water facilities prior to construction.

D. Set-Aside and Fee Activities

Background

Under the SDWA, states are required to set aside a certain percentage of their available DWSRF loan funds to provide financial assistance to small systems. States at their option may also set aside a portion of their federal DWSRF allotment for certain other project and nonproject activities, and assess fees on loans to help support administration costs. A description of the different set-asides and past/proposed activities related to both set-asides and fees follows.

Mandatory Small System Project Set-Aside

States must annually use at least 15 percent of all funds credited to the DWSRF loan fund to provide loan assistance to PWSs that serve fewer than 10,000 people to the extent that there are a sufficient number of eligible projects to fund. States that exceed the 15 percent requirement in any one year are permitted to bank the excess toward future years.

One hundred eighty four (184) loans totaling \$413,683,545 have been approved to date. One hundred fifty nine (159) of these loans (totaling \$196,757,315 or 48 percent of loan total) represent PWSs that serve fewer than 10,000 people. The NDDH envisions that additional loans will be made to small PWSs based on the comprehensive project list and fundable list (See Attachment 2).

Mandatory Additional Subsidization Set-Aside

Congress has mandated in several previous appropriations bills that 20 to 30 percent of assistance provided from DWSRF capitalization grants be in the form of additional subsidies. The DWSRF program provides these additional subsidies as loan

forgiveness. The NDDH has the authority under state law, N.D.C.C. Chapter 61-28.1, to provide financial assistance through the DWSRF as authorized by federal law and the USEPA.

Criteria for determining the amount of loan forgiveness is on a project specific basis. Loan forgiveness will be based on the relative future water cost index (RFWCI). The RFWCI is defined as the ratio of expected average annual residential user charge for water service resulting from the project, including costs recovered through special assessments, to the local median household income (based on 2008-2012 American Communities Survey (ACS) 5-Year Estimate).

Projects with a RFWCI of 2.0 percent or greater will qualify for 60 percent loan forgiveness. Projects with a RFWCI of 1.5 percent to 1.9 percent will qualify for 30 percent loan forgiveness. Projects with a RFWCI less than 1.5 percent will not qualify for any loan forgiveness. Projects that do not qualify for loan forgiveness still qualify for a traditional DWSRF loan. The loan forgiveness cap for any one project is \$1.0 million.

Timely progression of additional subsidization projects is required. To ensure this, there will be an application deadline, a binding commitment deadline, and a loan forgiveness disbursement deadline. If projects identified as receiving additional subsidization do not meet these deadlines the additional subsidization set-aside will be used to fund lower ranked projects on the project priority list.

It is unknown at this time if mandatory additional subsidization will apply to the FY2015 DWSRF allotment. To address this potential requirement, the fundable portion of the 2015 comprehensive project priority list depicts at least 20 percent (\$1,800,000) additional subsidization through loan forgiveness. Adjustments will be made, as necessary, based on the actual required subsidization level and capitalization grant amount.

Mandatory Green Project Reserve (GPR) Set-Aside

Congress has mandated in several previous appropriations bills that 10 to 20 percent of assistance provided from DWSRF capitalization grants, to the extent there are sufficient eligible project applications, be used for water efficiency, energy efficiency, green infrastructure, or other environmentally innovative activities. Where it is not clear that a project or component qualifies to be included as counting towards the requirement, the files for such projects will contain documentation of the business case on which the project was judged to qualify, as described in the 2015 DWSRF capitalization grant requirements. Projects on the PPL meeting one or more objectives are designated as GPR.

It is unknown at this time if mandatory GPR will apply to the FY2015 allotment. To address this potential requirement, the fundable portion of the 2015 comprehensive

project priority list depicts at least 10 percent (\$900,000) of GPR. Adjustments will be made, as necessary, based on the actual GPR requirement and capitalization grant amount.

Optional Project Set-Asides

States may provide additional loan subsidies (i.e., reduced interest or negative interest rate loans, principal forgiveness) to benefit communities meeting the definition of disadvantaged or which the state expects to become disadvantaged as the result of the project. A disadvantaged community is one in which the entire service area of a PWS meets affordability criteria established by the state following public review and comment. The value of the subsidies cannot exceed 30 percent of the amount of the federal capitalization grant for any fiscal year. The EPA is required to provide guidance to assist states in developing affordability criteria.

The NDDH has not developed a disadvantaged community program, and is not proposing to do so in this IUP. This decision is based primarily upon majority opinions obtained during initial development of the DWSRF Program, and the NDDH's desire to maximize the long-term availability of funds for construction purposes.

Optional Nonproject Set-Asides

States may use a portion of their federal DWSRF allotment (up to specified ceilings) for the following nonproject set-aside activities:

- DWSRF Administration - up to 4 percent
- State Program Administration - up to 10 percent
- Public Water Supply Supervision (PWSS) Program, source water protection program(s), capacity development program, and operator certification program
- Small System Technical Assistance (serving 10,000 or fewer people) - up to 2 percent
- Local Assistance and Other State Programs - up to 10 percent for any one activity with a maximum of 15 percent for all activities combined
- Loans to PWSs to acquire land or conservation easements for source water protection programs
- Loans to community water systems to implement source water protection measures, or to implement recommendations in source water petitions
- Assist PWSs in capacity development
- Assist states in developing/implementing an EPA-approved wellhead protection program

States may transfer funds among the nonproject set-aside categories, or between the loan fund and such set-aside categories, provided that the statutory set-aside ceilings are not exceeded. Nonproject set-aside funds may be transferred at any time to the

loan fund. However, loan commitments must be made for the transferred funds within one year of the transfer if payments have already been taken for the set-aside funds. Monies intended for the loan fund may be transferred to nonproject set-asides only if no payments have yet been taken for the monies to be transferred. Otherwise, funds in or transferred to the loan fund must remain in the loan fund. Transfers may be done only if described in an IUP and approved by the EPA as part of a capitalization grant agreement or amendment.

Nonproject Set-Aside and Fee Activity

Attachment 4 depicts nonproject set-aside and fee activity through 2015. The anticipated FY 2015 federal DWSRF allotment for North Dakota is \$9,000,000. The NDDH intends to set aside \$1,025,000 of the allotment for non-project activities. The NDDH also intends to reserve \$415,000 of set-aside funds of the FY2015 capitalization grant for use in future years in addition to funds held in reserve from future years. The state program administration (PWSS Program) set-aside is \$500,000 and an additional \$400,000 will be held in reserve for future years. The 2 percent set-aside for small system technical assistance is \$165,000 and an additional 15,000 will be held in reserve for use in future years. The 4 percent set-aside for DWSRF administration is \$360,000. The 4 percent set-aside will be held for ongoing and future DWSRF program administration. The 10 percent set-aside will also be held for ongoing and future PWSS administration. The 2 percent set-aside will be held for ongoing and future small system technical assistance. Should the FY2015 capitalization grant be different from \$9,000,000, the set-aside for DWSRF program administration will be adjusted to 4 percent of the actual capitalization grant awarded. The amount held in reserve from the 2 percent and state program administration will be changed to hold in reserve the remainder of the set-aside that is not being taking in the FY2015 in addition to funds held in reserve from previous Intended Use Plans.

The NDDH has limited and will continue to limit the usage of set-asides to maximize funds available for construction. Set-aside usage has been restricted to that necessary to administer the program (4 percent set-aside), provide technical assistance to small PWSs (2 percent set-aside), to provide state program administration (10 percent set-aside), and to complete source water assessments mandated under the SDWA (15 percent set-aside).

The 4 percent set-aside is inadequate to cover the cost of administering the DWSRF Program. Also, Congress will choose at some point to no longer capitalize the program, at which time no new funds will be available for program administration. Based on these considerations, the NDDH considers it both prudent and necessary to set-aside and hold the full 4 percent from each grant, and to hold accumulated loan administration fees to enable ongoing and future administration of the program.

Funds from the 2 percent set-aside have been used to assist small PWSs in capacity development, financial capacity, operator certification, managerial capacity and source water protection. Funds from this set-aside will continue to be used for these purposes and for new initiatives such as assisting these communities with operator safety training. The NDDH closely monitors demand and need for this set-aside to avert over-accumulation of funds.

The 10 percent state program administration set-aside will be used to help fund administration of the PWSS program in pursuit of its mission. This set-aside requires 1:1 match by the state. One of the sources of funds for this 1:1 match is the 0.5 percent loan administration fee. Another source of funding for the 1:1 match is credit for state match funds spent in 1993 on administration of the PWSS program. This credit is good for up to half of the 1:1 match with a maximum credit of \$236,359 per year. This match credit does not represent spendable funds.

Under the SDWA, states are permitted to assess fees on loans to support DWSRF administration costs. North Dakota DWSRF loan recipients are required to pay an annual loan administration fee presently set at 0.5 percent of the outstanding loan principal balance. This loan administration fee is payable semiannually on each loan payment date. The fees are held under the master trust indenture and are available to pay DWSRF program administration costs allowable under the SDWA. To enable continued management of the DWSRF once it is no longer annually capitalized through federal grants, loan administration fees will be held and used for loan-bond servicing and DWSRF Program administration as allowed under the SDWA. Also, starting in 2008 the loan administration fees are used as a source of 1:1 match that is required when using the state program administration set-aside to administer the PWSS program.

E. Financial Status

Background

States are required to provide a description of the financial status of their DWSRF Program. The information presented below describes the financial structure of the North Dakota DWSRF, the method used to generate the required state match, transfers between SRF's (State Revolving Loan Funds), the basis for approving loans, loan assistance terms including a discussion concerning market interest rates in North Dakota, sources and intended use of funds, and special considerations for State and Tribal Assistance Grants.

Financial Structure

Bonds for the 20 percent state match are issued by the PFA under a master trust indenture adopted by the Industrial Commission of North Dakota. The PFA may also

issue leveraged bonds under the master trust indenture, the proceeds of which can be used to fund loans.

The current demand for DWSRF loan assistance in North Dakota exceeds authorized federal DWSRF allotments and the required state match for those allotments. Under the financial structure initially established for the DWSRF, excess leveraging and higher loan interest rates would be needed to satisfy this excess demand.

A modified financial structure within the existing master trust indenture has been implemented to better satisfy the continuing high demand for DWSRF financial assistance, yet avert excessive leveraging and higher loan interest rates. Under the modified structure, DWSRF allotments and state match bond proceeds will be used first to fund loans. Leveraged bonds will be issued only if loan demand exceeds the amount of DWSRF allotments and state match available for loans or if deemed in the best interest of the program. If leveraged bonds are issued, they will be sized, together with DWSRF allotments and state match, to satisfy current cash flow needs as represented by the projected annual construction costs of eligible projects. This funding approach will expedite loan assistance to more projects that are ready to proceed to construction, avert premature or unnecessary bond issuances, and ensure a more reliable loan repayment stream to satisfy both bond debt service requirements and future loan demand.

The master trust indenture for the DWSRF provides that, in the event there are insufficient amounts available to make scheduled principal and interest payments on outstanding DWSRF bonds when payments are due, the trustee may transfer available excess revenues from the Clean Water State Revolving Fund (CWSRF) to the DWSRF bond fund to meet the deficiency. Following such a transfer, the DWSRF has an obligation to reimburse the CWSRF with future available DWSRF excess revenues.

State 20 Percent Match Requirement

Under the SDWA, states are required to match their DWSRF allotment at an amount at least equal to 20 percent. North Dakota has issued state match bonds to satisfy the FY 1997 through 2017 match requirements.

Anticipated Proportionality Ratio

Bonds were sold in late 2011 to provide the required 20 percent state match for 2012 through 2017. Payments were made using 100 percent state match funds until all of the match funds were disbursed. The program is in an over-matched condition at this time. Funds will be disbursed at a rate of 100 percent federal, leveraged, or FCLA funds because of this over-match condition.

Disbursement of Funds

Funds will be dispersed in the following order: federal, state match, leveraged bond proceeds, and FCLA. To increase the rate of draw for both capitalization grant and leveraged funds, leveraged bonds proceeds will be used to fund loan payment requests. Capitalization grant funds will be immediately requested to replace the disbursed leveraged bond proceeds and deposited into the FCLA account.

The DWSRF is currently over-matched with no state match funds available for disbursement. Set-asides are closely monitored and disbursed quickly when requests are made to ensure timely expenditure and over-accumulation. All federal funds are disbursed in a first-in, first-out manner.

Transfer of Funds Between DWSRF and CWSRF

At the governor's discretion, a state may transfer up to 33 percent of its DWSRF capitalization grant to the CWSRF or an equal amount from the CWSRF to the DWSRF. Transfers could not occur until at least one year after receipt of the first capitalization grant, which was August 24, 1998. This transfer authority was effective through fiscal year 2001. One-year extensions of this transfer authority were granted through the Veterans Administration, Housing and Urban Development, and Independent Agencies Appropriation Bill for fiscal years 2002 - 2005. This provision was made permanent in the FY06 appropriation bill. In addition to transferring grant funds, states can also transfer state match, investment earnings, or principal and interest repayments between SRF programs. These types of transfers were authorized by the Governor in 2002 and 2004. A combined total of \$14.0 million was transferred from the CWSRF to the DWSRF and \$10.0 million was transferred back from the DWSRF to the CWSRF.

Due to strong drinking water project demand, NDDH received authorization to transfer up to an additional \$20.0 million from its CWSRF to its DWSRF in 2007. These funds will be transferred to the DWSRF program on an as needed basis. A total of \$11,177,672 of this \$20.0 million authorization has been transferred into the DWSRF program as of December 31, 2010. The source of CWSRF funds to be transferred will be unrestricted cumulative excess, restricted cumulative excess, FCLA, and grant funds. Since prior transfers have occurred between the two SRFs, NDDH will transfer funds on a net basis, as described by Attachment 5. With this transfer, the DWSRF Program will be able to fund additional drinking water projects during 2015. Transferring funds will not impact DWSRF set-aside funding. The long-term impact to the DWSRF with a \$20.0 million transfer from the CWSRF authorized in 2007 is estimated to be an average revolving level increase of \$2 million/year (from \$19 million/year to \$21 million/year) over the next 20 years. Attachment 5 itemizes the amount of funds transferred to and from the DWSRF program.

Funding Process

Projects may be submitted to the NDDH each year for consideration and inclusion into an IUP. A new IUP is developed for public review and comment in the fall of each year. New and eligible projects for which ranking questionnaires are submitted are evaluated, ranked (if possible), and included on the comprehensive project priority list. Requests for reranking of already-listed and ranked projects are evaluated on a case-by case basis, and may require the completion of an updated ranking questionnaire.

Loan approvals are based on project ranking, readiness to proceed, and availability of funds based on cash flow considerations including projected disbursements under already approved and potential new loans. The NDDH is prepared to issue leveraged bonds if the loan demand exceeds the amount of available DWSRF allotments and state match or if it is in the best interest of the program.

Loan Assistance Terms

The base repayment period for DWSRF loans under the SDWA is 20 years following project completion. The NDDH may utilize shorter repayment periods on a project-by-project basis. Candidate projects include low-cost projects for which minimal water rate increases will be required to retire the loan debt. The present loan interest rate is 2.0 percent for PWSs that qualify for tax-exempt financing and 3.0 percent for those that do not qualify for tax-exempt financing, with the exception of projects that use leveraged bond proceeds. Leveraged bonds will be discussed later in this section. As discussed under Section D, an annual loan fee of 0.5 percent is assessed on all loans to support DWSRF administration.

The SDWA requires that the interest rate for a loan be less than or equal to the market interest rate. The NDDH will monitor compliance with this requirement by establishing as the market interest rate the average interest rate received by the North Dakota political subdivisions on bond issues with twenty-year maturity sold on a competitive or negotiated basis during the prior quarter. This rate will be calculated and updated quarterly based upon the prior quarter bond sales. If there are no qualified bond sales, the market rate for that quarter will be calculated using comparable regional bond issues. Based upon fourth quarter 2014 North Dakota twenty-year competitive bond sales, the current market interest rate is 3.0 percent

Leveraging the fund is appropriate where financing needs significantly exceed available funds; however, it impacts the DWSRF by reducing the interest rate subsidy provided or reducing future loan capacity. By continuing to leverage, the program will be able to assist more communities currently on the priority list and help those communities achieve or remain in compliance with the SDWA. Loans necessitating leveraging will be subject to a loan interest rate (including the 0.5 percent administration fee) of 75 percent of the current market interest rate if needed to maintain program viability. The

interest rate on these loans will be more than regular DWSRF interest rate, which currently is 2.5 percent (which includes the 0.5 percent administration fee).

New in 2015 is the option for extended term financing beyond the base 20-year loan repayment period. Extended term financing allows for repayment periods to be 30 years or the useful life of the project, whichever is less. A 30-year repayment period will be granted if it is determined that the principal portion of the loan for project components that have a useful life of 20 years or less will be paid off within 20 years. If the loan does not qualify for a full 30-year repayment period, the loan repayment period will be based on the useful life of project components. Project components that are considered to have a 20-year or less useful life are: process equipment, pumps, electrical equipment, controls, and auxiliary equipment. Project components that are considered to have a 30-year or more useful life are: buildings, concrete, other structures, conveyance structures (piping), and earthen structures.

Extended term financing will be given to the extent that loans to projects on the fundable list with repayment periods of more than 20 years do not decrease expected DWSRF program repayments by more than 10% annually over the next 5 years, as compared to 20-year repayment at the same rate. Allowing extended term financing for projects on the 2015 Fundable List could cause the loan repayments over the next five years to decline by an average 9.61%. Refinancing of existing DWSRF loans will not be allowed using extended term financing.

Sources and Uses of Funds

Attachment 6 depicts a detailed breakdown of sources and uses of funds from FY1997 through FY2015. Sources of funds include \$6,022,442 in funds available from prior years. An additional \$7,975,000 of new funds are anticipated to become available in 2015. Thus \$13,997,442 of funds is available for projects. All of the funds are allocated to projects as shown in the Comprehensive Project Priority List and Fundable List (Attachment 2). This amount does not include any leveraged bonds, but the NDDH is prepared to issue bonds if the near-term loan demand exceeds available funds.

State and Tribal Assistance Grants

State and Tribal Assistance Grants (STAG grants) are grants that pass through EPA and go straight to drinking water systems. These grants are for 55 percent of the project. The system must provide the remaining 45 percent of the project as a local match. To avoid the higher cost of issuing municipal bonds, most systems wish to utilize DWSRF loan funds to satisfy the match requirement for these grants. By EPA policy, only non-federal DWSRF funds may be used toward the match. Non-federal funds are limited to loan repayments, earnings, bond proceeds in excess of the capitalization grants, and other state contributions in excess of the required 20 percent state match. Initially the North Dakota DWSRF had insufficient non-federal funds to satisfy match requirements for

these grants. Consequently, the NDDH in the past has transferred \$14.0 million from the CWSRF to the DWSRF to acquire sufficient non-federal funds to assist systems in this matter. The DWSRF has transferred back \$10 million in federal funds to the CWSRF.

Currently Grafton and BDW have open STAG grants and must provide a 45 percent local match. Systems in North Dakota have received a combined \$28.7 million in STAG grants since 1999 and must provide a combined \$23.0 million in matching funds. The NDDH will fund loans to these and other systems that are awarded STAG grants as long as the program has non-federal funds available. Should the program not have non-federal funds to make loans, loans will be made in future years as these funds become available.

F. Short- and Long-Term Goals

Background

The 1996 SDWA Amendments authorize a DWSRF Program to assist PWSs finance the costs of infrastructure needed to achieve or maintain compliance with SDWA requirements and to protect public health. The objectives of the NDDH's DWSRF Program include addressing public problems and priorities, ensuring compliance with the SDWA, assisting systems to ensure affordable drinking water, and maintaining the long-term viability of the fund. To address these objectives, the DWSRF Program will help ensure that North Dakota's public water supplies remain safe and affordable through prioritized financial assistance, enhanced source water protection activities, and increased technical assistance to small systems. The short and long-term goals set forth below are established to accomplish these objectives.

Short-Term Goals

1. On December 5, obtain North Dakota State Water Commission approval of this IUP.
2. Continue to implement the DWSRF program for the state of North Dakota by funding projects for systems that are having problems maintaining compliance with the total coliform rule, ground water treatment rule, the arsenic rule, the disinfection byproduct rule series and the surface water treatment rule series.

Long-Term Goals

1. Help North Dakota PWSs achieve and maintain compliance with the SDWA. This is accomplished by coordinating with the PWSS Program and targeting those rules that systems in the state are having problems maintaining in compliance. These include total coliform rule, ground water treatment rule, arsenic, disinfection

byproduct rule series and the surface water treatment rule series.

2. Assist the PWSS Program meet their goals. The DWSRF program assistance includes providing technical support on infrastructure issues, capacity reviews and small system technical assistance. Through the small system technical assistance set-aside the DWSRF Program helps operators become certified, systems return to compliance, and systems maintain capacity.
3. Administer the DWSRF Program in a manner that will maximize the long-term availability of funds for eligible and needed drinking water infrastructure improvements.
4. Assist North Dakota PWSs in improving drinking water quality, quantity, and dependability by providing reduced interest rate, long-term financial assistance for eligible and needed drinking water infrastructure improvements. This infrastructure assistance helps with compliance of drinking water rules, regionalization/consolidation and replacement of aging infrastructure.
5. Continue to integrate to the maximum extent possible DWSRF funding with other available funding to maximize the benefits to public water systems and needed drinking water projects statewide. The cooperating agencies include the United States Department of Agriculture, Community Development Block Grant Program, North Dakota Department of Land Trusts, and the North Dakota State Water Commission.

Environmental Results

3. Loan Fund
 - a. Through 12/31/13, the fund utilization rate, as measured by the ratio of executed loans to funds available for projects, was 95 percent, which is above the national average of 90 percent. For 2015, the goal of the DWSRF program is to maintain the fund utilization rate at 90 percent or above.
 - b. Through 12/31/13, the rate at which projects progressed as measured by disbursements as a percentage of assistance provided was 75 percent. This is below the national average of 80 percent. The FY 2015 goal is to return the construction pace to 80 percent.
 - c. The DWSRF program funded 14 projects in the first nine months of 2014 totaling \$24.6 million and serving a population of 58,559. For 2015, the goal of the DWSRF program is to fund 10 loans, totaling \$14.0 million and serving a population of 9,000.
4. Set asides, Small System Technical Assistance
 - a. The goal for systems receiving training is 120.
 - b. The goal for systems receiving on-site technical assistance is 50.

G. Public Participation

Background

States are required to make their annual IUP available to the public for review and comment prior to submitting it to the EPA as part of its capitalization grant application. States are also required to describe the public review process used and how it responded to major comments and concerns that were received.

Process

The public was invited to comment on the draft 2015 IUP at a public hearing held in Bismarck on November 12, 2014. Written comments were also accepted until November 18, 2014. No comments were received at the November 18 hearing. One written comment was received. The Public Finance Authority requested the planning estimate for three projects be reevaluated as the estimated repayment period did not appear to correspond to the type of project listed. These projects were reevaluated and changes were made to the Comprehensive Project Priority List.

ATTACHMENT 1

ELIGIBLE AND INELIGIBLE PROJECTS AND PROJECT-RELATED COSTS UNDER THE DRINKING WATER STATE REVOLVING LOAN FUND (DWSRF) PROGRAM

EXAMPLES OF ELIGIBLE PROJECTS AND PROJECT-RELATED COSTS

- Projects that address present Safe Drinking Water Act (SDWA) exceedances
- Projects that prevent future SDWA exceedances (applies only to regulations in effect)
- Projects to replace aging infrastructure
 - rehabilitate or develop drinking water sources (excluding reservoirs, dams, dam rehabilitation and water rights) to replace contaminated sources
 - install or upgrade drinking water treatment facilities if the project would improve the quality of drinking water to comply with primary or secondary SDWA standards
 - install or upgrade storage facilities, including finished water reservoirs, to prevent microbiological contaminants from entering the water system
 - install or replace transmission and distribution piping to prevent contamination caused by leaks or breaks, or to improve water pressure to safe levels
- Projects to restructure and consolidate water supplies to rectify a contamination problem, or to assist systems unable to maintain SDWA compliance for financial or managerial reasons (assistance must ensure compliance)
- Projects that purchase a portion of another system's capacity, if such purchase will cost-effectively rectify a SDWA compliance problem
- Land acquisition
 - land must be integral to the project (i.e., needed to meet or maintain compliance and further public health protection such as land needed to locate eligible treatment or distribution facilities)
 - acquisition must be from a willing seller
 - Note: The cost of complying with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (the Uniform Act) is an eligible cost.
- Planning (including required environmental assessment reports) , design, and construction inspection costs associated with eligible projects

EXAMPLES OF INELIGIBLE PROJECTS AND PROJECT-RELATED COSTS

- Dams, or rehabilitation of dams
- Water rights, except if the water rights are owned by a system that is being purchased through consolidation as part of a capacity development strategy
- Reservoirs, except for finished water reservoirs and those reservoirs that are part of the treatment process and are located on the property where the treatment facility is located
- Drinking water monitoring costs
- Operation and maintenance costs
- Projects needed mainly for fire protection
- Projects for systems that lack adequate technical, managerial and financial capability, unless assistance will ensure compliance
- Projects for priority systems in the Enforcement Tracking Tool, unless funding will ensure compliance
- Projects primarily intended to serve future growth

Attachment 2
 State of North Dakota
 Drinking Water State Revolving Loan Fund Program
 Comprehensive Project Priority List and Fundable List for 2015⁽¹⁾

Shaded projects are on the fundable list

Priority Ranking	Priority Points	Project No.	System Name	Present Population	Project Description	Construction Start Date	Cost (\$1000)		Green Project		Est. Loan Term ⁽⁴⁾
							Project	Cumulative	Type	Cost(\$1000)	
1	37	3100838-02	Ross(2)	97	New water supply, storage and watermain replacement	2015	699	699			30 yr
2	31	0901530-01	Leonard	223	Consolidation of existing users to regional water system (arsenic)	2016	3,600	4,299			
3	30	0901530-00	Alexander	1,100	Replacement of aging distribution, water treatment, wells, meters and looping of mains	2016	3,000	7,299			
4	29	0500620-01	Maxbass(2)	120	WTP replacement, new well and storage tanks	2015	266	7,565			30 yr
5	26	2600556-01	Lehr(2)	80	Well and watermain replacement	2015	400	7,965			30 yr
6	25	4100428-01	Gwinner(3)	753	FE/MN removal equipment, membrane treatment and WTP renovation	2015	2553	10,518	Cat, nrg effcy	500	23 yr
7	24	3201072-02	TCWD(3)	2,475	WTP rehabilitation and expansion	2015	1,399	11,917	Cat, nrg effcy	400	20 yr
8	22	5201309-02	CPWD	2,607	Booster station improvements and back up generation	2015	1,820	13,737			20 yr
9	21	1001380-02	NEWD	2,350	New WTP and wellfield	2017	25,000	38,737			
10	21	5100593-02	Makoti	154	New reservoir	2015	1,400	40,137			30 yr
11	21	2900789-04	Pick City	123	Watermain replacement	2015	1,500	41,637			30 yr
12	21	4800152-01	Cando	1,115	Water treatment plant improvements and well replacement	2015	1,500	43,137			20 yr
13	21	4000834-02	Rolla	1,280	WTP upgrade	2015	3,700	46,837			20 yr
14	20	2701506-01	Arnegard	700	Distribution system improvements	2016	4078	50,915			
15	20	2300535-02	Kulm	354	Water tower replacement	2015	1,200	52,115			
16	20	1100306-01	Ellendale	1,394	Water tank replacement	2015	1,365	53,480			
17	20	0300553-04	Leeds	427	WTP improvements	2015	325	53,805			
18	19	0900217-01	Davenport	252	New transmission main, increased storage and control replacement	2015	511	54,316			
19	19	1000543-06	Langdon	1,878	New well field	2016	6,000	60,316			
20	19	0700344-01	Flaxton	66	Watermain replacement and additional well	2015	197	60,513			
21	19	2000446-02	Hannaford	131	Water tower replacement	2015	1,200	61,713			
22	19	1900162-01	Carson	293	Watermain replacement	2015	4,201	65,914			
23	19	0300553-03	Leeds	427	Upgrade wells, transmission lines, pumps	2015	325	66,239			
24	19	0300553-06	Leeds	427	Watermain replacement and looping	2015	575	66,814			
25	19	1500571-03	Linton	1,097	Watermain replacement	2015	1,197	68,011			
26	18	2900074-01	Beulah	3,121	WTP improvements and water storage	2015	6,000	74,011			
27	18	0700198-03	Columbus	125	Watermain replacement, smart meters, treated water storage reservoir	2015	1585	75,596			
28	18	4701303-05	SRWD	3,048	Treated water reservoir, booster station, watermain and WTP improvements	2015	7,295	82,891			
29	18	5201309-03	CPWD	2,607	WTP improvements and membrane softening	2015	2,913	85,803			
30	18	3700314-06	Enderlin	886	New lime softening WTP & storage	2015	8,065	93,868			
31	18	4700922-03	Streeter	170	New well	2015	350	94,218			
32	18	5200458-04	Harvey	1,783	Water reservoir replacement	2015	1,300	95,518			
33	18	4000833-02	Rolette	594	Watermain replacement	2015	4,600	100,118			

Priority Ranking	Priority Points	Project No.	System Name	Present Population	Project Description	Construction Start Date	Cost (\$1000)		Green Project		Est. Loan Term ⁽⁴⁾
							Project	Cumulative	Type	Cost(\$1000)	
34	17	3700574-09	Lisbon	2,154	WTP rehabilitation	2015	1,000	101,118			
35	17	5001075-03	Walsh RWD	3,404	Distribution system upgrade	2016	1,887	103,005			
36	17	5000691-01	Minto	604	Watermain replacement	2016	699	103,704			
37	17	2500446-01	Towner	620	WTP improvements and well replacement	2015	1,616	105,320			
38	17	5100593-03	Makoti	154	Watermain replacement	2015	2,750	108,070			
39	17	4700922-01	Streeter	170	Watermain replacement	2015	500	108,570			
40	17	4700922-02	Streeter	170	WTP improvements	2015	500	109,070			
41	16	1000543-04	Langdon	1,878	Intake structure and raw water transmission line improvements	2015	3,200	112,270			
42	16	3400170-01	Cavalier	1,302	Water tower rehabilitation	2017	1,993	114,263			
43	16	0501057-03	All Seasons WUD	764	Water supply increase by parallel and looping	2015	796	115,059			
44	16	4000834-03	Rolla	1,280	New well	2015	180	115,239			
45	16	1700059-01	Beach	1,300	Distribution system repair, water tower rehabilitation	2015	1,225	116,464			
46	15	5101189-02	NPRWD	5,903	Water storage rehabilitation	2015	1,820	118,284			
47	15	3900333-01	Fairmount	367	Water tower and controls replacement	2015	950	119,234			
48	15	0900999-05	West Fargo	28,500	New SW/GW WTP	2015	52,685	171,919			
49	15	3700574-08	Lisbon	2,154	Upgrade to well #1	2015	150	172,069			
50	15	5000408-07	Grafton	4,913	Pretreatment and advanced oxidation WTP improvements	2020	9,000	181,069			
51	15	4701303-06	SRWD	5,000	Reservoir expansion, water tower, pipeline improvements	2015	3,951	185,020			
52	15	5200927-02	Sykeston	117	Watermain replacement	2016	2,400	187,420			
53	15	3000342-01	Flasher	230	Watermain replacement	2015	211	187,631			
54	15	0900035	Arthur	337	Watermain, hydrant, gate valve, and service replacement	2015	1,910	189,541			
55	15	3000400-01	Glen Ullin	804	Watermain replacement	2015	479	190,020			
56	15	2100726-01	New England	600	Watermain replacement	2015	3,000	193,020			
57	15	4900465-01	Hatton	777	Water tower replacement	2016	1,100	194,120			
58	15	2000203-07	Cooperstown	984	Water transmission line replacement	2015	3,000	197,120			
59	14	4100357-02	Forman	504	New well, well upgrades and transmission line replacement	2015	400	197,520			
60	14	3900183-02	Christine	150	Watermain replacement and looping	2015	580	198,100			
61	14	0900524-01	Kindred	692	Water tower and watermain replacement	2015	1,100	199,200			
62	14	3900443-03	Hankinson	919	Watermain looping	2015	575	199,775			
63	14	2300537-01	LaMoure	889	Water tower replacement, reservoir upgrade and pumping upgrade	2015	1,200	200,975			
64	14	0200858-01	Sanborn	194	Watermain replacement	2016	500	201,475			
65	14	2500415-02	Granville	241	Water main replacement	2015	341	201,816			
66	14	3700314-07	Enderlin	886	Water tower replacement	2015	1,957	203,773			
67	14	4800152-02	Cando	1,115	Watermain replacement	2015	1,750	205,523			
68	14	1400732-05	New Rockford	1,391	Watermain replacement	2015	5,000	210,523			
69	14	1100758-04	Oakes	1,856	WTP expansion	2015	1,700	212,223			
70	14	5000773-04	Park River	5,042	Watermain replacement	2015	1,988	214,211			
71	14	2601055-01	Zeeland	141	Water meter replacement	2015	200	214,411			
72	14	0501057-04	All Seasons WUD	1,130	Water system improvements	2015	27,919	242,330			
73	13	2300969-02	Verona	85	Water reservoir and pump house replacement	2015	300	242,630			
74	13	5300809-05	Ray	1600	New treated water storage reservoir, transmission main and watermain replacement	2015	4501	247,131			

Priority Ranking	Priority Points	Project No.	System Name	Present Population	Project Description	Construction Start Date	Cost (\$1000)		Green Project		Est. Loan Term ⁽⁴⁾
							Project	Cumulative	Type	Cost(\$1000)	
75	13	2300969-01	Verona	85	Watermain and water meter replacement	2015	515	247,646			
76	13	0900134-02	Buffalo	225	Replace existing watermains, gate valves and hydrants	2015	1,085	248,731			
77	13	0900035-01	Arthur	337	Water tower replacement	2015	850	249,581			
78	13	3901043-01	Wyndmere	429	Watermain looping	2015	340	249,921			
79	13	0900945-02	Tower City	253	Watermain replacement	2015	1,750	251,671			
80	13	3700314-05	Enderlin	886	Watermain replacement (first loan in 2002)	2015	773	252,444			
81	13	2000203-06	Cooperstown	984	Reservoir replacement	2016	600	253,044			
82	13	1100758-05	Oakes	1,856	Well and well house replacement	2015	400	253,444			
83	13	1400879-01	Sheyenne	204	Water tower rehabilitation	2016	115	253,559			
84	12	5100138-01	Burlington	1,060	New water tower, transmission main and pump station	2016	1,695	255,254			
85	12	1800410-03	Grand Forks	55,158	WTP, facility plan, and design	2016	137,000	392,254			
86	12	3500842-01	Rugby	2,900	WTP rehabilitation	2015	500	392,754			
87	12	3700876-01	Sheldon	116	Pump and control replacement	2015	175	392,929			
88	12	0900387-01	Gardner	74	Watermain replacement and looping	2015	400	393,329			
89	12	5100593-01	Makoti	154	Well repair, new well and transmission line	2015	375	393,704			
90	12	2801487-04	NPRWD	4,110	Expansion of water distribution system	2015	2,600	396,304			
91	12	0900336-15	Fargo	105,549	Ground storage reservoir #2 and pump station	2028	14,774	411,078			
92	12	4000833-01	Rolette	594	New well	2015	125	411,203			
93	12	1000543-05	Langdon	1,878	WTP rehabilitation and equalization basin upgrade	2015	7,000	418,203			
94	12	3700574-11	Lisbon	2,154	Watermain replacement	2016	2,500	420,703			
95	12	4600487-02	Hope	303	Service to west side of railroad tracks	2015	185	420,888			
96	12	1100758-06	Oakes	1,856	Water tower rehabilitation	2015	400	421,288			
97	12	1801062-03	GF-Traill RWD	8,477	SCADA improvements	2015	3,500	424,788			
98	12	0501057-05	All Seasons WUD	1,130	New well	2015	390	425,178			
99	11	3800397-01	Glenburn	380	Watermain replacement and looping	2015	1,122	426,300			
100	11	0700804-01	Powers Lake	400	Water treatment plant	2015	1,545	427,845			
101	11	4100357-03	Forman	504	WTP rehabilitation and new controls	2015	500	428,345			
102	11	3400269-02	Drayton	824	Replace clearwell, replace chemical feed and rehab water tower	2018	2,000	430,345			
103	11	5300936-03	Tioga	1,230	Reservoir, transmission main and watermain replacement	2015	7,800	438,145			
104	11	0901060-01	CRW	7,750	Reservoir expansion, watermain upgrade and expansion (refinance)	2015	1,650	439,795			
105	11	3000473-01	Hebron	747	Water tower replacement	2016	3,000	442,795			
106	11	0801031-01	Wilton	750	Watermain replacement	2015	681	443,476			
107	11	0600119-02	Bowman	1,800	Watermain replacement	2017	955	444,431			
108	11	3100744-01	New Town	2,500	Clearwell, well, sludge pond, and WTP expansion	2015	4,000	448,431			
109	11	2001061-01	Dakota RWD	3,523	Watermain replacement, upgrade vaults	2016	2,700	451,131			
110	11	3900973-05	Wahpeton	7,766	Watermain replacement and looping	2016	440	451,571			
111	11	1800410-05	Grand Forks	55,158	Watermain looping	2018	4,600	456,171			
112	11	0900769-03	Page	232	Watermain replacement	2015	2,500	458,671			
113	11	1400732-03	New Rockford	1,391	Watermain replacement	2015	950	459,621			
114	11	1400732-04	New Rockford	1,391	WTP upgrades	2015	500	460,121			
115	11	2800389-03	Garrison	1,453	New elevated tower	2015	1,335	461,456			
116	11	3700574-10	Lisbon	2,154	New well field and raw water transmission main	2016	560	462,016			

Priority Ranking	Priority Points	Project No.	System Name	Present Population	Project Description	Construction Start Date	Cost (\$1000)		Green Project		Est. Loan Term ⁽⁴⁾
							Project	Cumulative	Type	Cost(\$1000)	
117	11	3700314-04	Enderlin	886	New wells & transmission line	2015	1,648	463,664			
118	10	1000768-01	Osnabrock	160	Watermain rehabilitation	2015	200	463,864			
119	10	4700498-07	Jamestown	16,000	Phase 3 - Transmission line	2017	3,695	467,559			
120	10	4700498-06	Jamestown	16000	North east pressure zone improvements	2015	1725	469,284			
121	10	0900999-01	West Fargo	28,500	Transmission main from new WTP	2015	28,325	497,609			
122	10	0200763-01	Oriska	128	Pump house and reservoir replacement	2015	550	498,159			
123	10	3900196-01	Colfax	141	Watermain replacement and looping	2015	478	498,637			
124	10	5000408-06	Grafton	4,913	Park River water intake improvements	2018	1,100	499,737			
125	10	3900973-03	Wahpeton	7,766	Lime storage, slaker additions & misc WTP improvements	2016	1,373	501,110			
126	10	1800410-04	Grand Forks	55,158	Watermain and water tower improvements	2018	250	501,360			
127	10	0900336-07	Fargo	105,549	Water tower level controls	2015	363	501,723			
128	10	2800389-04	Garrison	1,453	WTP expansion, new intake and pumps	2015	5,000	506,723			
129	10	2800389-05	Garrison	1,453	Watermain Replacement	2015	4,500	511,223			
130	10	0801036-01	Wing	160	Water storage rehabilitation	2015	80	511,303			
131	10	1501310-02	State Line WC	260	Water tower rehabilitation	2015	75	511,378			
132	10	1001380-01	NEWD	2,350	Water distribution expansion	2016	8,000	519,378			
133	10	0900336-05	Fargo	105,549	Water system regionalizaion project	2016	15,000	534,378			
134	10	5000691-02	Minto	604	Portion of new public works building that is directly related to the drinking water system	2016	100	534,478			
135	10	1100758-07	Oakes	1,856	New reservoir, pump station and transmission main	2015	720	535,198			
136	9	3900703-01	Mooreton	197	Replace gate valves and add bladder tank	2015	216	535,414			
137	9	0900030-03	Argusville	475	Watermain replacement and looping	2015	1,005	536,419			
138	9	1300276-01	Dunn Center	174	Watermain replacement	2015	300	536,719			
139	9	3900333-02	Fairmount	367	Watermain replacement and looping	2015	655	537,374			
140	9	0901060-05	CRW	7,750	System elevated tower	2016	3,584	540,958			
141	9	4700498-01	Jamestown	16,000	Watermain replacement	2015	1,675	542,633			
142	9	4700498-12	Jamestown	16,000	Watermain replacement (WTP to State Hospital)	2016	2,620	545,253			
143	9	3901068-12	SEWUD	16,672	Distribution system expansion	2016	7,200	552,453			
144	9	2300508-01	Jud	74	Watermain replacement	2015	110	552,563			
145	9	4600341-02	Finley	445	Water tower replacement	2015	1,100	553,663			
146	9	0900613-03	Mapleton	762	Watermain replacement	2016	2,885	556,548			
147	9	2300537-02	LaMoure	889	Chemical feed replacement	2015	206	556,754			
148	9	2300537-03	LaMoure	889	Watermain replacement	2015	500	557,254			
149	9	0100476-01	Hettinger	1,226	Watermain replacement	2015	600	557,854			
150	9	0600119-01	Bowman	1,800	Watermain replacement	2016	1,635	559,489			
151	9	3000596-09	Mandan	23,827	WTP expansion	2017	4,260	563,749			
152	9	0900945-01	Tower City	253	Water tower rehabilitation	2015	160	563,909			
153	8	5100868-04	Sawyer	367	Water treatment plant upgrade and new well	2016	501	564,410			
154	8	3000596-06	Mandan	24,227	Transmission main replacement	2016	5,425	569,835			
155	8	3000596-07	Mandan	25,227	Pressure problem correction and water tower rehabilitation	2017	2,239	572,074			
156	8	4700498-10	Jamestown	16000	Filter bay renovations and media replacement	2015	800	572,874			
157	8	3200653-01	Michigan	294	Water meter replacement and WTP upgrades	2015	88	572,962			
158	8	3200653-02	Michigan	294	Water tower rehabilitation	2015	75	573,037			
159	8	3200653-03	Michigan	294	Curb stop replacement	2015	25	573,062			
160	8	5200338-01	Fessenden	479	Water reservoir rehabilitation	2015	300	573,362			
161	8	2400715-02	Napoleon	792	Extend water service to residents with wells	2015	900	574,262			

Priority Ranking	Priority Points	Project No.	System Name	Present Population	Project Description	Construction Start Date	Cost (\$1000)		Green Project		Est. Loan Term ⁽⁴⁾
							Project	Cumulative	Type	Cost(\$1000)	
162	8	1400732-02	New Rockford	1,391	Water tower rehabilitation	2015	233	574,495			
163	8	5101189-03	NPRWD	5,903	Distribution, storage & pumping improvements	2015	1,600	576,095			
164	8	0801154-04	SCRWD	17,044	Water service distribution expansion	2015	7,416	583,511			
165	8	0900336-04	Fargo	105,549	Water tower rehabilitation 3	2015	1,329	584,840			
166	8	0900336-06	Fargo	105,549	Water tower rehabilitation 1 & 2	2016	1,807	586,647			
167	8	0900336-09	Fargo	105,549	Water tower rehabilitation 4 & 5	2017	3,110	589,757			
168	8	0900336-10	Fargo	105,549	Radio read water metering improvements	2017	8,636	598,393			
169	8	0900336-11	Fargo	105,549	Low lift transfer pump station	2020	8,221	606,614			
170	8	0900336-12	Fargo	105,549	WTP residuals facility	2018	23,361	629,975			
171	8	0900336-13	Fargo	105,549	Water tower rehabilitation 6 & 7	2018	2,257	632,232			
172	8	0900336-14	Fargo	105,549	Water tower rehabilitation 8 & 9	2021	2,178	634,410			
173	7	2800650-01	Mercer	120	Watermain replacement	2015	416	634,826			
174	7	5101447-01	West River WD	625	Service line replacement (from water main to curb stop)	2015	447	635,273			
175	7	3000596-08	Mandan	24,827	New raw water intake	2017	15,000	650,273			
176	7	4100357-01	Forman	504	Water tower replacement	2015	1,000	651,273			
177	6	5100868-03	Sawyer	367	Watermain replacement	2015	500	651,773			
178	6	3300174-02	Center	580	Watermain replacement (4th St, Lincoln Ave)	2015	682	652,455			
179	6	3300174-03	Center	580	Watermain replacement (Main St)	2015	1,024	653,479			
180	6	4500242-01	Dickinson	28,000	Booster station (River Drive)	2015	1,330	654,809			
181	6	4500242-02	Dickinson	28,000	Booster station (State Ave)	2015	2,200	657,009			
182	6	0900999-02	West Fargo	28,500	Underground storage reservoir	2015	2,493	659,502			
183	6	4900803-01	Portland	606	Water tower replacement	2015	850	660,352			
184	6	0900166-02	Casselton	2,329	Water tower replacement	2016	1,895	662,247			
185	6	3800397-02	Glenburn	380	Water tower rehabilitation	2015	495	662,742			
186	6	2400715-01	Napoleon	792	Water meter replacement	2015	600	663,342			
187	6	2900074-03	Beulah	3,121	Water tower rehabilitation	2015	1,000	664,342			
188	6	0901060-06	CRW	7,750	Increased capacity to Casselton Area - wellfield, WTP, reservoir, and transmission main improvements	2015	5,600	669,942			
189	6	4700498-08	Jamestown	16,000	Water meter replacement	2017	2,550	672,492			
190	6	4700498-09	Jamestown	16000	SCADA Improvements	2015	403	672,895			
191	6	4700498-11	Jamestown	16000	East end reservoir renovations	2016	495	673,390			
192	6	4700498-13	Jamestown	16,000	Transmission main	2016	5,140	678,530			
193	6	4700498-14	Jamestown	16,000	Water tower rehabilitation	2015	490	679,020			
194	6	4700498-15	Jamestown	16,000	WTP filter rehabilitation	2015	800	679,820			
195	6	3901068-11	SEWUD	16,673	Water meter replacement	2015	1,100	680,920			
196	5	2900470-02	Hazen	2,534	Watermain replacement	2015	426	681,346			
197	5	3000596-10	Mandan	23,827	High service pump capacity upgrade	2016	2,984	684,330			
198	5	3800877-02	Sherwood	242	Watermain replacement	2015	406	684,736			
199	5	1000543-02	Langdon	1,878	Water main replacement	2015	700	685,436			
200	5	1000543-03	Langdon	1,878	Water tower rehabilitation	2015	450	685,886			
201	5	2700990-03	Watford City	2,556	Fox Hills water tower	2016	4,600	690,486			
202	5	2700990-02	Watford City	2,566	Looping and transmission main project	2015	730	691,216			
203	5	2700990-04	Watford City	2,566	New water tower (SE)	2016	3,700	694,916			
204	4	0501001-02	Westhope	429	Watermain replacement	2015	456	695,372			
205	4	3800695-02	Mohall	812	Water tower replacement	2016	1,145	696,517			
206	4	2900074-02	Beulah	3,121	Watermain, hydrant, and gate valve replacement	2015	1,225	697,742			
207	4	0900999-06	West Fargo	28,500	Surface water intake structure	2015	3,900	701,642			
208	3	5100868-04	Sawyer	367	Transmission line and well replacement	2016	560	702,202			

Priority Ranking	Priority Points	Project No.	System Name	Present Population	Project Description	Construction Start Date	Cost (\$1000)		Green Project		Est. Loan Term ⁽⁴⁾
							Project	Cumulative	Type	Cost(\$1000)	
209	3	3401157-02	Harwood	790	Underground storage reservoir	2015	850	703,052			
210	3	3800695-01	Mohall	812	New watermain	2015	284	703,336			
211	3	4500242-03	Dickinson	28,000	Water pump replacement	2016	1,500	704,836			
212	3	5301012-06	Williston	30,000	4 MG of storage on reservoirs	2016	4,400	709,236			
213	2	0900488-01	Horace	2,430	Gate valve and fire hydrant replacement, new watermain	2015	460	709,696			
214	2	5301012-07	Williston	30,000	Distribution improvements (Hi-Land Heights)	2016	5,087	714,783			
215	2	5301012-08	Williston	30,000	Distribution improvements (Williston Park)	2016	1,050	715,833			
216	2	5301012-05	Williston	30,000	Distribution Improvements (16th Ave)	2015	1,145	716,978			
217	2	5301012-09	Williston	30,000	Distribution improvements (Wegley)	2016	1,415	718,393			
218	1	2801430-03	Garrison RWD	1,525	New reservoir and pump station	2015	1,244	719,637			
219	1	0900999-03	West Fargo	28,500	South side water tower	2015	2,266	721,903			
220	1	0900999-07	West Fargo	28,500	North side water tower	2015	2,266	724,169			

(1) - It is unknown at this time if mandatory additional subsidization and GPR will apply to the 2014 DWSRF allotment. To address these potential requirements, funding levels of \$1,800,000 and \$900,000 have been assumed for additional subsidization (as loan forgiveness) and GPR, respectively. Adjustments will be made, as necessary, based on the actual requirements and capitalization grant amount.

(2) - These projects appear eligible for 60% loan forgiveness with a cap of \$1,000,000 of loan forgiveness. The actual loan forgiveness amount is dependant upon available funds. Loan forgiveness eligibility will be confirmed when the loan application is submitted.

(3) - These projects appear eligible for 30% loan forgiveness with a cap of \$1,000,000 of loan forgiveness. The actual loan forgiveness amount is dependant upon available funds. Loan forgiveness eligibility will be confirmed when the loan application is submitted.

(4) - Estimated length of the loan term only. The loan term will be set at the time of facility plan approval.

Abbreviations

B/C = Business Case for Green Project Reserve Required
 Cat = Categorically Approved Green Project Reserve Project
 FE/MN = Iron and Manganese
 GPR = Green Project Reserve
 GW = Groundwater
 nrg effcy = Energy Efficiency
 SCADA = Supervisory Control and Data Acquisition
 SW = Surface Water
 WTP = Water Treatment Plant
 wtr effcy = Water Efficiency

BRWD = Barnes Rural Water District
 CPWD = Central Plains Water District
 CRW = Cass Rural Water
 GRWD = Greater Ramsey Water District
 NPRWD = North Prairie Rural Water District
 NVWD = North Valley Water District
 SCRWD = South Central Regional Water District
 SEWUD = Southeast Water Users District
 SRWD = Stutsman Rural Water District
 TCWD = Tri-County Water District
 WRWD = Williams Rural Water District
 RWD = Rural Water District
 NEWD = Northeast Regional Water District

Attachment 3

STATE OF NORTH DAKOTA

PRIORITY RANKING SYSTEM FOR FINANCIAL ASSISTANCE THROUGH THE DRINKING WATER STATE REVOLVING LOAN FUND (DWSRF) PROGRAM

DWSRF PROGRAM DIVISION OF MUNICIPAL FACILITIES ENVIRONMENTAL HEALTH SECTION NORTH DAKOTA DEPARTMENT OF HEALTH

OCTOBER, 2014

The following criteria and point system is utilized by the DWSRF Program to rank eligible projects for potential financial assistance through the DWSRF Program:

1. Water Quality (Maximum Points Limited to 35)
2. Water Quantity (Maximum Points = 20)
3. Affordability (Maximum Points = 15)
4. Infrastructure Adequacy (Maximum Points Limited to 15)
5. Consolidation or Regionalization of Water Supplies (Maximum Points = 10)
6. Operator Safety (Maximum Points = 5)

Maximum Total Points = 100

DWSRF funds may be used to buy or refinance existing local debt obligations (publicly-owned systems only) where the initial debt was incurred and the construction started after July 1, 1993. DWSRF assistance requests of this type, if eligible, will be ranked based on the original purpose and success of the constructed improvements.

Creation of New Systems - Eligible projects are those that, upon completion, will create a community water system (CWS) to address existing public health problems with serious risks caused by unsafe drinking water provided by individual wells or surface water sources. Eligible projects are also those that create a new regional CWS by consolidating existing systems that have technical, financial, or managerial difficulties. Projects to address existing public health problems associated with individual wells or surface water sources must be limited in scope to the specific geographic area affected by contamination. Projects that create new regional CWSs by consolidation existing systems must be limited in scope to the service area of the systems being consolidated. A project must be a cost-effective solution to addressing the problem. Applicants must ensure that sufficient public notice has been given to potentially affected parties and consider alternative solutions to addressing the problem. Capacity to serve future population growth cannot be a substantial portion of the project.

<u>CATEGORY</u>	<u>POINTS</u>
1. Water Quality - Select All That Apply (Maximum Points Limited to 35) ^{1,3}	
A. Documented waterborne disease outbreak(s) within last 2 years	20
B. Unresolved nitrate or nitrite maximum contaminant level (MCL) exceedance(s), OR acute microbiological MCL exceedance(s) within last 12 months	15
C. Exceedance(s) of EPA-established unreasonable risk to health (URTH) level(s) within last 4 years for regulated chemicals or radionuclides (excludes nitrate and nitrite)	10
D. Disinfection treatment inadequate to satisfy the Surface Water Treatment Rule (SWTR), the enhanced SWTR or ESWTR, or the groundwater disinfection rule (GWDR) once finalized, OR groundwater source(s) deemed by the DWP to be under the direct influence of surface water, OR multiple turbidity treatment technique requirement (TTR) violations within last 2 years (<u>includes</u> at least one event where the maximum allowed turbidity was exceeded)	8
E. Multiple turbidity TTR violations within last 2 years (<u>no</u> events where the maximum allowed turbidity was exceeded), OR 3 or more <u>non-acute</u> microbiological MCL violations within last 12 months	7
F. MCL or TTR exceedance(s) (<u>no</u> URTH level exceedances) within last 4 years (excludes microbiological contaminants, nitrate, nitrite, and turbidity)	6
G. Potential MCL or TTR compliance problems based on most recent 4 year period (excludes microbiological contaminants and turbidity)	
75% to 100% of MCL or TTR	5
50% to 74% of MCL or TTR	4
H. General water quality problem (see page 7)	
significant general water quality problem	4
moderate general water quality problem	3
minor general water quality problem	2

2. Water Quantity - Select One If Applicable (Maximum Points = 20)^{2,3}
- A. Correction of a critical water supply problem involving the loss or imminent loss of a water supply in the near future 20
 - B. Correction of an extreme water supply problem 10
 Maximum water available <150 gallons per capita per day (gpcd) (community water systems only), OR continuous water shortages during all periods of operation (nonprofit noncommunity water systems only)
 - C. Correction of a serious water supply problem 7
 Maximum water available <200 gpcd (community water systems only), OR daily water shortages, or inability to meet peak daily water demand, at a frequency of at least once per week during all periods of operation (nonprofit noncommunity water systems only)
 - D. Correction of a moderate water supply problem 4
 Maximum water available <250 gpcd (community water systems only), OR occasional daily water shortages, or occasional inability to meet peak daily water demands, on a seasonal basis (nonprofit noncommunity water systems only)
 - E. Correction of a minor water supply problem 2
 Maximum water available <300 gpcd (community water systems only), OR sporadic water shortages or occasional inability to meet peak water demands (nonprofit noncommunity water systems only)
3. Affordability - For the Applicable Sub-Category, Select One For Each Item (Maximum Points = 15)
- A. Community Water Systems
 - 1. Relative income index - ratio of local or service area annual median household income (AMHI) to the state nonmetropolitan AMHI (based on 2006-2010 ACS 5-Year Estimates)
 - < 60% 8
 - 61% to 70% 7
 - 71% to 80% 5
 - 81% to 90% 3
 - 91% to 100% 1

2.	Relative future water cost index - ratio of expected average annual residential user charge for water service resulting from the project, including costs recovered through special assessments, to the local AMHI (based on 2006-2010 ACS 5-Year Estimates)	7
		6
		5
	>2.5%	3
	2.0% to 2.5%	1
	1.5% to 1.9%	
	1.0% to 1.4%	
	0.5% to 0.9%	
B.	Nonprofit Noncommunity Water Systems	
1.	Relative income index - ratio of local or service area AMHI to the state nonmetropolitan AMHI (based on 2006-2010 ACS 5-Year Estimates)	
	≤ 60%	8
	61% to 70%	7
	71% to 80%	5
	81% to 90%	3
	91% to 100%	1
2.	Relative future water cost index - ratio of expected annual water service expenditures resulting from the project to total annual operating expenses	
	>20%	7
	15% to 20%	6
	10% to 14%	5
	5% to 9%	3
	2% to 4%	1
4.	Infrastructure Adequacy - Select All That Apply (Maximum Points Limited to 15)	
A.	Correction of general disinfection treatment deficiencies - excludes improvements necessary to directly comply with the SWTR, the ESWTR, or the GWDR (once finalized)	3
B.	Correction of well construction or operating deficiencies	3
C.	Correction of distribution system pressure problems (dynamic pressure <20 psi)	3
D.	Replacement of deteriorated water mains	3

E. Replacement of deteriorated finished water storage structures	3
F. Replacement of distribution system piping/materials shown via DWP-approved testing to contribute unacceptable levels of lead or asbestos	3
G. Water treatment plant operating at or above design capacity	3
H. Water treatment plant operating at or beyond useful or design life	3
I. Correction of specific design or operating deficiencies associated with water treatment plant unit processes (excludes disinfection treatment)	2
J. Correction of specific design or operating deficiencies associated with surface water intake facilities	2
K. Correction of specific or design or operating deficiencies associated with finished water storage facilities	2
L. Correction of specific design or operating deficiencies associated with raw or finished water pumping facilities	2
M. Correction of specific design or operating deficiencies associated with raw or finished water distribution system piping	2
N. Correction of specific design or operating deficiencies associated with chemical feed installations (excludes disinfection)	2
O. For systems relying solely on their own groundwater supply, provision of a second well where only one functional well exists	2
P. Replacement of inoperative, obsolete, or inadequate instrumentation or controls	2

5. Consolidation or Regionalization of Water Supplies - Select All That Apply (Maximum Points = 10)
- A. Correction of Safe Drinking Water Act (SDWA) compliance problem(s), or extreme to critical water supply problem(s), for 1 or more PWS through consolidation with or regionalized service by another PWS 4
 - B. Correction of contamination problems (regulated contaminants), or extreme water quantity problems (no water, imminent loss of water supply, or continuous/ frequent daily water shortages), for individual residences or businesses through consolidation with or regionalized service by a PWS 3
 - C. Correction of potential MCL or TTR compliance problems, general water quality problems, or moderate to serious water quantity problems for 1 or more PWSs through consolidation with or regionalized service by another PWS 2
 - D. Correction of general water quality problems, or moderate water quantity problems (occasional daily or seasonal water shortages), for individual residences or businesses through consolidation with or regionalized service by a PWS 1
6. Operator Safety - Select One If Applicable (Maximum Points = 5)²
- A. Correction of a problem that poses a critical and chronic safety hazard for operators 5
 - B. Correction of a problem that poses an intermittent safety hazard for operators 3
 - C. Correction of a potential significant safety hazard for operators 1

¹ Applies to community and nonprofit noncommunity public water systems only. Water quality problems must be ongoing and unresolved under the present system configuration. Analysis applies to finished water after all treatment (raw water if no treatment is provided).

² Applies to community and nonprofit noncommunity public water systems only. Projects intended mainly to increase water availability for or to improve fire protection are not eligible for DWSRF assistance. Fire protection features, in order to be eligible, must represent an ancillary project benefit or secondary project purpose.

³ Projects intended to address multiple community and/or nonprofit noncommunity public water system water quality and/or quantity problems will be ranked based on the highest level problem to be solved.

GENERAL WATER QUALITY

DEFINITIONS

Significant General Water Quality Problem (4 points) = Score of 6 or greater

Moderate General Water Quality Problem (3 points) = Score of 4 or 5

Minor General Water Quality Problem (2 points) = Score of 3 or less

All values expressed in milligrams per liter

Total Dissolved Solids (TDS)

500 - 999 Score of 1

1,000 - 1,499 Score of 2

≥1,500 Score of 3

Total Hardness as Calcium Carbonate (TH)

200 - 424 Score of 1

425 - 649 Score of 2

≥650 Score of 3

Iron (FE)

0.3 - 0.89 Score of 1

0.9 - 2.0 Score of 2

>2.0 Score of 3

Manganese (MN)

0.05 - 0.25 Score of 1

0.26 - 1.00 Score of 2

>1.00 Score of 3

Sodium (NA)

200 - 424 Score of 1

425 - 649 Score of 2

≥650 Score of 3

Sulfate (SO₄)

250 - 499 Score of 1

500 - 750 Score of 2

>750 Score of 3

**Attachment 4
 Nonproject Set-Aside and Fee Activity (1)
 North Dakota Drinking Water State Revolving Loan Fund Program**

Set-Aside	Set Aside Through 9/30/2014	Transferred To Loan Fund	Expended Through 9/30/2014	Balance Available as of 9/30/2014	Planned Set-Asides For 2015	Total Set-Aside Funds Available 2015	Reserved Through 2014	Reserved From 2015 Allotment	Total Reserved Through 2015
4% Administration	7,072,684	0	6,933,476	139,208	360,000	499,208	0	0	0
10% State Program Assistance									
PWSS Supervision	2,370,000	0	1,216,998	1,153,002	500,000	1,653,002	384,500	400,000	784,500
Source Water Protection									
Capacity Development									
Operator Certification									
2% Small System Technical Assistance	2,639,332	0	2,402,632	236,700	165,000	401,700	82,900	15,000	97,900
15% Local Assistance (2)									
Land Acquisition									
Capacity Development									
Wellhead Protection									
Source Water Petition Programs									
Source Water Protection (3)	1,255,880	820,612	435,268	0	NA	0	0	NA	0
Totals	13,337,896	820,612	10,988,374	1,528,910	1,025,000	2,553,910	467,400	415,000	882,400

Fee Type	Collected Through 9/30/14	Transferred to Loan Fund	Expended Through 09/30/14	Balance Available 09/30/14	Projected Funds 01/01/15 - 12/31/15	Total Funds Available Through 12/31/15	Total Funds Held Through 12/31/15
Loan Fee	7,205,779	0	909,854	6,295,925	839,487	8,045,266	7,135,412

(1) The set-aside amounts are based on percentages (4%, 2%, or 10%) of the respective federal DWSRF allotments. The FY 1997 through 2014 allotments have been awarded. The anticipated allotment for FY 2015 is \$9,000,000. The FY 2015 allotment will be applied for by July 1, 2015. The loan fee amounts reflect loans approved up to September 30, 2014. The amounts may increase based upon repayments due (if any) under loans approved after this date. (2) No more than 10% may be used for any one activity with a maximum of 15% for all activities combined. (3) Only the FY 1997 allotment may be used to complete the mandatory source water assessments. All funds not used by April 25, 2003, from this set aside were transferred to the Loan Fund.

Attachment 5

**Amounts Available to Transfer Between State Revolving Fund Programs
North Dakota Drinking Water State Revolving Loan Fund Program**

Year	Transaction Description	Banked Transfer Ceiling	Transferred from DWSRF to CWSRF	Transferred from CWSRF to DWSRF	DWSRF Funds Available for Transfer	CWSRF Funds Available for Transfer
1998	DW Grant	4.1			4.1	4.1
1998	DW Grant	6.5			6.5	6.5
2000	DW Grant	9.0			9.0	9.0
2000	DW Grant	11.5			11.5	11.5
2001	DW Grant	14.1			14.1	14.1
2002	DW Grant	16.7			16.7	16.7
2002	Transfer	16.7	10	3	9.7	23.7
2003	DW Grant	19.4			12.4	26.4
2003	Transfer	19.4	0	5.9	18.3	20.5
2004	DW Grant	22.1			21.0	23.2
2004	Transfer	22.1	0	2.6	23.6	20.6
2005	DW Grant	24.9			26.4	23.4
2005	Transfer	24.9	0	0.1	26.5	23.3
2006	DW Grant	27.6			29.2	26.0
2006	Transfer	27.6	0	1.5	30.7	24.5
2007	DW Grant	30.3			33.4	27.2
2007	Transfer	30.3	0	4.9	38.3	22.3
2008	DW Grant	33.0			41.0	25.0
2008	Transfer	33.0	0	3	44.0	22.0
2009	DW Grant	35.7			46.7	24.7
ARRA	DW Grant	42.1			53.1	31.1
ARRA	Transfer	42.1		2.6	55.7	28.5
2009	Transfer	42.1	0	0.7	56.4	27.8
2010	DW Grant	46.6			60.9	32.3
2010	Transfer	46.6	0	0.8	61.7	31.5
2011	DW Grant	49.7			64.8	34.6
2012	DW Grant	52.7			67.8	37.6
2013	DW Grant	55.4			70.5	40.3
2014	DW Grant	58.3			73.4	43.2
2015	DW Grant	61.3			76.4	46.2
2015	Transfer	61.3	0	0	76.4	46.2

Attachment 6
Sources and Uses Table
North Dakota Drinking Water State Revolving Loan Fund Program
Cumulative Amounts as of September 30, 2014

SOURCES	
Federal Capitalization Grants	171,083,767
State Match	35,932,137
Transfers from CWSRF	25,177,672
Net Leveraged Bonds	103,941,728
Investment Earnings	36,926,449
Interest Payments	36,453,471
Principal Repayments	107,166,000
 TOTAL SOURCES OF FUNDS	 <u>516,681,224</u>

USES	
4% Administration	7,072,684
2% SSTA	2,639,332
10% DW Program Set-Aside	2,370,000
15% Local Asst. Set-Aside	435,268
Transfers to CWSRF	10,000,000
Reserves	7,025,831
Bond Principal Repayments	28,165,130
Bond Interest Expense	38,476,573
Arbitrage	790,419
Closed Agreements	413,683,545
Loans Approved by Industrial Commission	0
 TOTAL USES OF FUNDS	 <u>510,658,782</u>

DWSRF Funds Available for Projects in 2015	<u><u>\$6,022,442</u></u>
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ANNUAL SOURCES FOR 2015	
FY15 Capitalization Grant	9,000,000.00
Set-asides taken from FY15 Capitalization Grant	(1,025,000.00)
State Match (if applicable)	-
Leveraged Bonds (if applicable)	-
Transfers with CW +/- (if applicable)	-
 Total New 2015 Funds	 <u>\$7,975,000</u>
 TOTAL DWSRF FUNDS AVAILABLE FOR 2014	 <u><u>\$13,997,442</u></u>
 TOTAL DWSRF PROJECTS ON FUNDABLE LIST	 <u><u>\$13,997,442</u></u>
 AVAILABLE FUNDS	 <u><u>\$0</u></u>



North Dakota State Water Commission

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MEMORANDUM

Agenda f

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *TSD* Todd Sando, Chief Engineer and Secretary
SUBJECT: Administrative Rules Changes
DATE: November 25, 2014

On August 4, the proposed administrative rules changes discussed at the September 15, 2014 meeting were sent to Legislative Council. A public hearing was held on September 9, with comments accepted until September 19.

Changes to the proposed rules resulted from comments received during the rulemaking process and are addressed in the attached summary of comments and responses (N.D.A.C. §§ 89-08-01-01(3) & (4), 89-12-01-03(1)(d) & (e), 89-12-01-03(4), 89-12-01-06(4) & (5), 89-12-01-08(1) & (2), and 89-14-01-02(2)).

The rules were submitted to the Attorney General's office for approval, and are now pending before the Administrative Rules Committee.

The sections for proposed changes are:

- 89-02 – Drainage of Water
- 89-03 – Water Appropriations
- 89-04 – Water Management Plans for Surface Coal Mining Operations
- 89-08 – Dikes, Dams, and Other Devices
- 89-12 – Municipal, Rural, and Industrial Water Supply Programs
- 89-14 – Stream Crossings

The State Engineer administers Articles 89-02, 89-03, 89-04, 89-08, and 89-14.

Article 89-12 is administered by the State Water Commission and requires final approval.

The hearing before the Administrative Rules Committee is scheduled for December 8 at 1:00 p.m. in the Roughrider Room.

Pending approval of this Commission and the Administrative Rules Committee, the rules will be effective January 1, 2015.

I recommend that the State Water Commission approved the proposed changes to Article 89-12 of the Administrative Code to the extent they are approved by the Administrative Rules Committee.

TS/rp
Attachment

Summary of Comments and Responses to Proposed Administrative Changes

The State Engineer/State Water Commission (SE/SWC) received four sets of comments on the proposed administrative code changes. Additionally, one comment was presented at the public hearing, but it referenced written testimony that had already been submitted. A summary of the changes and the SE/SWC responses follows.

Article 89-02 (No changes were made from proposed.)

General Comment: The Red River Joint Board Water Resource District (Joint Board) recommended adopting new rules to address tile drain permitting.

The Legislature adopted N.D.C.C. § 61-32-03.1 in 2011, essentially giving water resource districts jurisdiction over tile drains. The state engineer believes that where there is no conflict between the general drainage code statutes and rules, the current drainage code applies to both surface and subsurface (tile) drains. Therefore, no additional code is necessary at this time to specifically address tile drainage.

N.D.A.C. § 89-02-01-03: The Joint Board supports the proposed amendments.

N.D.A.C. § 89-02-01-07: The Joint Board supports the proposed amendments. Additionally, the Joint Board requests language that would require drainage permit applicants to identify a flow path; however, the Joint Board indicates perhaps this could be done by amending the application form rather than by administrative rule.

The state engineer agrees that this is a good idea. The application form is currently being updated.

N.D.A.C. § 89-02-01-08: The Joint Board requests that joint boards be allowed to analyze and approve or deny drainage permits if requested by both the local water resource district and the joint water resource district in an area.

The state engineer believes that N.D.C.C. § 61-16.1-11 (Joint Exercise of Powers) already gives this authority to joint boards that have entered agreements with a water resource district.

N.D.A.C. § 89-02-01-09.3: The Joint Board requests that a greater amount of time be given to consider projects of statewide or interdistrict significance.

The proposed change already doubled the time from 60 days to 120 days.

N.D.A.C. § 89-02-01-09.3: The Joint Board requests a revision allowing an applicant or a joint board to request a time extension.

The state engineer is not proposing any additional changes in response to the comment. After speaking with the Joint Board's attorney regarding further clarification on this comment, it seems the concern stems from the fact that sometimes applicants are requested to provide additional information and perhaps do not provide this information in a timely manner. The Joint Board wanted to put some onus back on applicants to keep the process moving along in a timely fashion. However, the state engineer believes the applicant now has sufficient motivation to respond in a timely manner because the proposed changes also declare an application void if no extension is requested.

N.D.A.C. § 89-02-01-09.4: The Joint Board requests a time limit for the State Engineer's final determination on permit applications of statewide or interdistrict significance.

Due to the inherent complexity of processing applications of statewide or interdistrict significance, establishing a hard deadline for this process is not practicable.

N.D.A.C. § 89-02-01-09.6: The Joint Board recommends a time limit for the State Engineer's final determination for requests of a State Engineer's hearing on permits of statewide or interdistrict significance.

Due to the inherent complexity and unknown volume of comments and hearing requests that may be received, establishing a hard deadline for this process is not practicable.

N.D.A.C. § 89-02-04: The Joint Board requests additional language that would allow water resource districts to obtain a court order to compel access to investigate complaints. (Note: presumed typo in original comment referring to N.D.A.C. § 89-02-01.)

Water resource districts already have the ability to seek a court order to enter property. This right does not need to be codified.

Article 89-03 (No changes were made from proposed.)

No comments were received regarding the proposed change to this article.

Article 89-04 (No changes were made from proposed.)

One comment letter was received from the Public Service Commission implicitly supporting the proposed repeal of article 89-04.

Article 89-08 (N.D.A.C. §§ 89-08-01-01(3) and (4) changed from proposed.)

N.D.A.C. § 89-08-01-01(4): The Joint Board recommends additional language in the definition of "dike" to include levees along rivers or other watercourses.

The definitions of both "dike" and "dam" were modified in response to this comment.

N.D.A.C. § 89-08-02-01: The Joint Board asked for language to indicate whether culvert openings should be considered when determining the impounding capacity for dikes and dams.

The language of the current rule would indicate that the openings do not count, which is the state engineer's interpretation and intent.

N.D.A.C. § 89-08-02: The Joint Board would like the State Engineer to identify a minimal amount of "acceptable" impact under which an applicant would not be required to obtain a flowage easement.

The state engineer does not have the authority to establish what an acceptable amount of impact is from a project on a downstream neighbor's property. If an applicant is unable to obtain a landowner easement from a neighbor, there are judicial remedies available. If the state engineer were to establish that, for example, flooding your neighbor's property to a depth of one inch is acceptable, this would likely result in a takings claim. Additionally, all situations will be factually different.

N.D.A.C. § 89-08-03: The Joint Board requests additional language that would allow water resource districts to obtain a court order to compel access to investigate complaints. (Note: presumed typo in original comment referring to N.D.A.C. § 89-02-01.)

Water resource districts already have the ability to seek a court order to enter property. This right does not need to be codified.

Article 89-12 (N.D.A.C. §§ 89-12-01-03(1) and (4), §§ 89-12-01-06(4) and (5), and §§ 89-12-01-08(1) and (2) changed from proposed.)

N.D.A.C. § 89-12-01-01: Garrison Diversion Conservancy District (GDCD) requests an additional definition for MOU to mean a Memorandum of Understanding entered between GDCD and SWC in 1986.

Adding this definition would elevate the MOU from a contract to a law. This is not appropriate, nor was it the intent of the SWC when the MOU was signed.

N.D.A.C. § 89-12-01-03(1)(d): Upon further review by the Commission, the words “carrying out” have been deleted.

N.D.A.C. § 89-12-01-03(1)(e): Upon further review by the Commission, the words “carry out” have been deleted. Additionally, “project” needs to be changed to “feasibility study.”

N.D.A.C. § 89-12-01-03: The GDCD requests a new section adding language that the SWC and GDCD will make a joint determination of approval pursuant to the MOU.

A new subsection (4) with revised wording has been added.

N.D.A.C. § 89-12-01-03: The GDCD requests addition of a reference to the MOU.

Reference to the MOU in the administrative code is not appropriate.

N.D.A.C. § 89-12-01-06: The GDCD requests a new section adding language that the SWC and GDCD will make a joint determination of approval pursuant to the MOU.

Subsection 4 has been reformatted and a new subsection (5) with revised wording has been added.

N.D.A.C. § 89-12-01-06: The GDCD requests addition of a reference to the MOU.

Reference to the MOU in the administrative code is not appropriate.

N.D.A.C. § 89-12-01-08(1)(g): Upon further review by the Commission, the words “that are in most need of funding” have been deleted.

N.D.A.C. § 89-12-01-08(2): The GDCD requests addition of a reference to the MOU. GDCD also suggests changing “provided” to “approved”.

Reference to the MOU in the administrative code is not appropriate. The language has been changed from “provided” to “approved”, and one use of provided has been deleted as redundant.

Article 89-14 (N.D.A.C. § 89-14-01-02(2) changed from proposed.)

One comment was received from the Department of Transportation (DOT) requesting a modification of the definition of “reconstruct.” Additionally, the State Engineer worked with DOT attorneys on this article’s proposed changes prior to initial submission. DOT was verbally supportive of the remainder of the changes proposed.

The state engineer accepted the change proposed by DOT with slight modification. The substantive change to DOT’s proposed language is replacing “pavement” with “road surface.” These stream crossing standards also apply to the reconstruction of gravel roads. The intent of DOT’s proposed change was to exempt “sliver grading,” and that would still be exempt because it is not “full depth road surface replacement.”



North Dakota State Water Commission

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MEMORANDUM

Agenda K

TO: Governor Jack Dalrymple
North Dakota State Water Commission Members
FROM: *TSD* Todd Sando, P.E., Chief Engineer-Secretary
SUBJECT: Proposed Legislation for 2015 Session
DATE: November 25, 2014

The following bills are proposed for submittal during the upcoming legislative session:

N.D.C.C. Section	Housekeeping	Substantive	Comments
61-03-22	X	X	The substantive change adds a 30-day time limit in which to appeal decisions of the state engineer. Previously there has been no time limit. Remainder of changes are language clean-up.
NEW SECTION under 61-03 (State Engineer)		X	This new section would codify what has been a policy of not granting permits to individuals while there are unresolved compliance issues. For example, there have been individuals who have illegally sold water to oil companies, but still want the state engineer to process their pending appropriation applications without resolving the violation. Additionally, there have been individuals who request sovereign land permits while there are violations pending. Generally the state engineer does not grant permits to individuals with outstanding violations. However, we do want to leave some flexibility in the statute for state engineer discretion because sometimes the best way to resolve a violation is to grant a permit. For example, if a person has an illegal structure on sovereign land, but that structure would be allowable with a permit, it makes little sense to have the structure removed and then grant a permit making the structure allowable. Lastly, there have been individuals who have formed shell LLCs in an attempt to circumvent this policy. This statute would also apply to businesses that are more than 25% owned by an individual with a pending violation.

NEW SECTION under 61-03 (State Engineer)		X	<p>Under N.D.A.C. § 89-08-04-01, dams with a capacity of more than 1,000 acre-feet must submit operating plans that contain 1) operation procedures, 2) maintenance procedures, and 3) emergency procedures. The pending Administrative Code changes split this Code section into three separate sections (pending N.D.A.C. §§ 89-08-04-(01-03)).</p> <p>Given the existing authority, pending N.D.A.C. § 89-08-04-03 can only apply to dams greater than 1,000 acre-feet in capacity. However, the criteria for requiring an emergency action plan should not be limited to capacity, but instead should be related to the hazard level of the dam. This change would require emergency action plans for all high- and medium-hazard dams, regardless of capacity. If this passes, the Administrative Code will need to be further updated.</p>
61-03-05		X	<p>This statute lists numerous fees that the state engineer is authorized to collect. Not only are the fee amounts outdated, but the state engineer has not been collecting these fees. The items described in the list should generally be provided as a service to the public as a necessary function of the office of the state engineer.</p>
61-04-01.1	X		<p>Moving the definition of “domestic rural use” from N.D.A.C. § 89-03-03-01. This term is not used in the Administrative Code, only the Century Code, so it more appropriately belongs with the definitions in the Century Code.</p>
61-04-06.2	X		<p>Modifying language because the phrase “reasonably be necessary for the future water requirements of the municipality or the rural water system” is defined in N.D.A.C. § 89-03-03-01, but that wording did not match the statute.</p> <p>Remainder of changes are language clean-up.</p>
61-04-09	X	X	<p>As a result of the audit, this section is being modified to better reflect the inspection practices. The previous language required the state engineer to “cause [works] to be inspected” before a permit’s beneficial use date. The state engineer always interpreted this language to mean that the inspection procedures needed to be initiated by the beneficial use date. The revision will now require the state engineer to notify the landowner and inspect the works after the beneficial use date.</p> <p>Remainder of changes are language clean-up.</p>

61-04-31	X	X	<p>The current law was written to serve two distinct purposes: 1) Reserve and set aside waters for future uses, and 2) withdraw waters from additional appropriation when data is lacking to allow for sound decisions. For either one of these purposes, a rule (regulation) making process must be followed.</p> <p>Purpose 1) of the law allows the state engineer (or Commission) to essentially supersede the prior appropriation doctrine. But, there is a rigorous public involvement process established that should definitely be left in place if this were ever considered.</p> <p>Purpose 2) is something we already do in the decision making process, but rather than formally withdrawing a water source from additional appropriation when data is lacking, we simply defer action on a water permit using the criteria in N.D.C.C. § 61-04-06. It would be inefficient and unproductive to go through a rigorous rule making process to withdraw water from additional appropriation when there is insufficient information. Therefore, this law has never been used.</p> <p>By rewording the second part of the statute to eliminate the formal rule making process, this would allow the state to efficiently withdraw waters from additional appropriation when data is lacking. More importantly, it will provide a method for us to effectively communicate to the public when waters are not likely to have appropriations issued from them anytime soon.</p> <p>Remainder of changes are language clean-up.</p>
61-04.1-16	X		<p>Deleting the words “and pilots” because the registration requirement for pilots was repealed in 1999, and should have been removed then.</p>
61-21-01		X	<p>As a result of previous Administrative Code changes, we realized that drain was only currently defined as a noun, though it is used throughout code as both a noun and a verb. This change would add a definition of drain as a verb.</p>
61-32-08		X	<p>This section deals with drainage complaints. The statute requires the local water board to make a decision within 120 days, and then the aggrieved party has 30 days to appeal. The change would add language giving an aggrieved party 30 days to appeal if the board fails to make a decision within the 120 days.</p>

Because the pre-filing deadline is December 4, the bills (attached) were pre-filed with Legislative Council, but can be pulled from consideration, if necessary.

I recommend that the State Water Commission approve these proposed agency bills for the 2015 legislative session.

TS/jlv
Attachments

Sixty-fourth
Legislative Assembly
of North Dakota

Introduced by

Office of the State Engineer

A BILL for an Act to create and enact two new sections to chapter 61-03 of the North Dakota Century Code, relating to pending administrative actions and permits of the state engineer and an emergency action plan for high-hazard and medium-hazard dams; to amend and reenact section 61-03-22 of the North Dakota Century Code, relating to appeals from an action or decision of the state engineer; and to repeal section 61-03-05 of the North Dakota Century Code, relating to fees of the state engineer.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. AMENDMENT. Section 61-03-22 of the North Dakota Century Code is amended and reenacted as follows:

61-03-22. Hearing – Appeals from decision of state engineer. ~~Except as more specifically provided in this title, any~~ Any person aggrieved because of any by an action or decision of the state engineer ~~under the provisions of this title~~ has the right to a hearing ~~by the. The state engineer if no~~ must receive a request for a hearing on the matter resulting in within thirty days of the action or decision has been held. ~~If~~ Once a hearing has been held ~~or if the hearing request is denied,~~ the person aggrieved has the right to petition for reconsideration ~~and to~~ or appeal, ~~all in accordance with the provisions of under~~ chapter 28-32.

SECTION 2. A new section to chapter 61-03 of the North Dakota Century Code is created and enacted as follows:

Pending administrative actions and permits.

If an applicant for any permit processed by the state engineer has an unresolved administrative order or complaint under this title, the permit will not be processed until the order is complied with or complaint is resolved. At the state engineer's discretion, the permit may be processed if issuing the permit would resolve the administrative order or complaint. If an applicant is a business, this section applies if the business is at least twenty-five percent owned by an individual with an unresolved administrative order or complaint under this title.

SECTION 3. A new section to chapter 61-03 of the North Dakota Century Code is created and enacted as follows:

Emergency action plan – High-hazard or medium-hazard dam.

The owner of a high-hazard or medium-hazard dam shall develop, periodically test, and update an emergency action plan to be implemented if there is an emergency involving the dam. The emergency action plan and any subsequent updates must be submitted to the state engineer for approval.

SECTION 4. REPEAL. Section 61-03-05 of the North Dakota Century Code is repealed.

§ 61-03-05. Fees of state engineer

The state engineer shall be paid and receive the following fees to be collected in advance and shall be paid by the state engineer into the general fund of the state treasury:

1. Repealed by S.L. 1977, ch. 569, § 27.
2. For recording any permit, certificate of construction or license issued, or any other water right instrument, two dollars for the first hundred words and twenty-five cents for each additional hundred words or fraction thereof.
3. For filing any other paper, two dollars.
4. For issuing a certificate of construction or a license to appropriate water, three dollars each.
5. For providing computer disks or copies of documents, including copies of blueprints of maps or drawings, government land office plats, benchmark books, survey notes, and water laws, a reasonable fee to be determined by the state engineer.
6. For transmitting documents electronically, a reasonable fee to be determined by the state engineer.
7. For certifying copies, two dollars for each certificate.
8. For examining and approving in connection with water right applications, plans, and specifications for any dam, not exceeding ten feet [3.05 meters] in extreme height from the foundation, twenty dollars, for a dam higher than ten feet [3.05 meters] and not exceeding thirty feet [9.14 meters], forty dollars, for a dam higher than thirty feet [9.14 meters] and not exceeding fifty feet [15.24 meters], fifty dollars, and for a dam higher than fifty feet [15.24 meters], seventy-five dollars.
9. For examining and approving in connection with water right applications, plans and specifications for a canal or other water conduit of an estimated capacity exceeding fifty and not more than one hundred cubic feet [1.42 and not more than 2.83 cubic meters] per second, forty dollars, and for a canal or other water conduit exceeding one hundred cubic feet [2.83 cubic meters] per second, sixty dollars.
10. For inspecting damsites and construction work when required by law, or when necessary in the judgment of the state engineer, twenty-five dollars per day and actual and necessary traveling expenses. The fees for any inspection deemed necessary by the state engineer and not paid on demand shall be a lien on any land or other property of the owner of the works, and may be recovered by the state engineer in any court of competent jurisdiction.

11. Rating ditches or inspection plans and specification of works for the diversion, storage, and carriage of water, at the request of private parties, not in connection with an application for the right to appropriate water, actual cost and expenses. The state engineer shall attach the state engineer's approval to such plans and specifications if found satisfactory.

12. For such other work as may be required of the state engineer's office, the fees provided by law.

13. For testifying personally in civil litigation involving private parties, or through the engineer's employees, in response to a subpoena in a case in which the engineer is not a party, the actual cost incurred, including mileage and travel expenses reimbursement, equal to the reimbursement rates provided for state employees in sections 44-08-04 and 54-06-09.

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Legislative Assembly
of North Dakota

Introduced by
Office of the State Engineer and State Water Commission

A BILL for an Act to create and enact a new subsection to section 61-04-01.1 of the North Dakota Century Code, relating to the definition of "domestic rural use"; and to amend and reenact sections 61-04-06.2, 61-04-09, 61-04-31, and subdivision i of subsection 2 of section 61-04.1-16 of the North Dakota Century Code, relating to the term and inspection of a water permit, reservation of waters, and weather modification permits.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. A new subsection to section 61-04-01.1 of the North Dakota Century Code is created and enacted as follows:

"Domestic rural use" means two or more family units or households obtaining water from the same system for personal needs and for household purposes, including heating, drinking, washing, sanitary, and culinary uses; irrigation of land not exceeding five acres [2.0 hectares] in area for each family unit or household for noncommercial gardens, orchards, lawns, trees, or shrubbery; and for household pets and domestic animals kept for household sustenance and not for sale or commercial use.

SECTION 2. AMENDMENT. Section 61-04-06.2 of the North Dakota Century Code is amended and reenacted as follows:

61-04-06.2. Terms of permit. The state engineer may issue a conditional permit for less than the amount of water requested, ~~but in no case may.~~ Except for water permits for incorporated municipalities or rural water systems, the state engineer may not issue a permit for more water than can be beneficially used for the purposes stated in the application ~~except that water.~~ Water permits for incorporated municipalities or rural water systems may contain water in excess of present needs if based upon ~~reasonable projections of what may reasonably be necessary for the future water needs requirements~~ of the municipality or the rural water system. The state engineer may require modification of the plans and specifications for the appropriation. The state engineer may issue a permit subject to fees for water use, ~~terms, and conditions,~~ restrictions, limitations, and termination dates the state engineer considers necessary to protect the rights of others and the public interest. ~~Conditions and limitations so attached~~ must be related to matters within the state engineer's jurisdiction of the state engineer; ~~provided, however, that all conditions attached to any permit issued prior to before July 1, 1975,~~ are binding upon the permittee.

SECTION 3. AMENDMENT. Section 61-04-09 of the North Dakota Century Code is amended and reenacted as follows:

61-04-09. Application to beneficial use – Inspection – Perfected water permit. ~~On or before the date set for the application of the water to a~~ After the permit's beneficial use date, or upon notice from the ~~owner~~ permit holder that water has been applied to a beneficial use, the state engineer shall ~~cause~~ notify the conditional water

~~permit holder and inspect the works to be inspected, after due notice to the holder of the conditional water permit. Such. The inspection shall be thorough and complete, in order to determine the safety, efficiency, and actual capacity of the works, its safety, and efficiency. If the works are not properly and safely constructed, the state engineer may require the necessary changes to be made within such time as the state engineer deems a reasonable and shall not issue a perfected water permit until such changes are made time. Failure to make the changes within the time prescribed by the state engineer shall cause postponement of the permit's priority under the water permit date to the date the changes are actually made to the satisfaction of the state engineer, and any. Any intervening application submitted prior to before the date the changes are actually made may will have the benefit of such the priority postponement of priority. When the works are found in satisfactory condition, after inspection properly and safely constructed and inspected, the state engineer shall issue the perfected water permit, setting forth the actual capacity of the works and such the limitations or conditions upon the water permit as stated in the conditional water permit as authorized by section 61-04-06.2; provided, however, that all. All conditions attached to any permit issued prior to before July 1, 1975, shall be are binding upon the permittee.~~

SECTION 4. AMENDMENT. Section 61-04-31 of the North Dakota Century Code is amended and reenacted as follows:

61-04-31. Reservation of waters – Public hearing – Notice.

1. Whenever it appears necessary to the state engineer, or when so directed by the commission, the state engineer may by regulation:

- a. ~~Reserve reserve and set aside waters for beneficial utilization use in the future; and~~
 - b. ~~When sufficient information and data are lacking to allow for the making of sound decisions, withdraw various waters of the state from additional appropriations until such data and information are available.~~
2. a. Prior to the adoption of a regulation under this section, the state engineer shall conduct a public hearing in each county ~~in which~~ where waters relating to the regulation are located. ~~The At least seven days before the date set for the public hearing shall be~~ preceded by, a notice placed in a newspaper of general circulation must be published in the official county newspapers within each of the counties.
3. b. Regulations adopted hereunder ~~shall be~~ are subject to chapter 28-32.
2. ~~When sufficient information or data is lacking to allow for sound decision-making on a water permit application, the state engineer may withdraw various waters of the state from additional appropriations until such data or information is available. Water permit applications pending from these sources will be placed in a deferred status.~~

SECTION 5. AMENDMENT. Subdivision i of subsection 2 of section 61-04.1-16 of the North Dakota Century Code is amended and reenacted as follows:

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- i. The applicant has registered, with the North Dakota aeronautics commission, any aircraft and ~~pilots~~ intended to be used in connection with the operation.

Sixty-fourth
Legislative Assembly
of North Dakota

Introduced by

Office of the State Engineer

A BILL for an Act to amend and reenact subsection 4 of section 61-21-01 and section 61-32-08, relating to the definition of “drain” and administrative hearings for drainage projects.

BE IT ENACTED BY THE LEGISLATIVE ASSEMBLY OF NORTH DAKOTA:

SECTION 1. AMENDMENT. Subsection 4 of section 61-21-01 is amended and reenacted as follows:

4. “Drain” means any natural watercourse opened, or proposed to be opened, and improved for ~~the purpose of~~ drainage and any artificial drains of any nature or description constructed for ~~such~~ the purpose, including dikes and appurtenant works. This definition may include more than one watercourse or artificial channel constructed for the aforementioned purpose when the watercourses or channels drain land within a practical drainage area as determined by the written petition called for in section 61-21-10 and the survey and examination called for in section 61-21-12.
“Drain” also means reducing the capacity of a land feature to retain water.

SECTION 2. AMENDMENT. Section 61-32-08 of the North Dakota Century Code is amended and reenacted as follows:

61-32-08. Appeal of board decisions – State engineer’s review – Closing of

noncomplying drains. The board shall make the decision required by section 61-32-07 within a reasonable time, but not to exceed one hundred twenty days, after receiving the complaint. The board shall notify all parties of its decision by certified mail. ~~The Any aggrieved party may appeal the board's decision may be appealed to the state engineer by any aggrieved party.~~ The appeal to the state engineer must be made within thirty days from the date notice of the board's decision has been received. If no decision is made within one hundred twenty days, the appeal to the state engineer must be made within one hundred fifty days of the complaint. The appeal must be made by submitting a written notice to the state engineer, which must specifically set forth the reason why the board's decision is erroneous. The appealing party shall also submit copies of the written appeal notice to the board and to the nonappealing party. Upon receipt of this notice the board, if it has ordered closure of a drain, lateral drain, or ditch, is relieved of its obligation to procure the closing or filling of the drain, lateral drain, or ditch. The state engineer shall handle the appeal by conducting an independent investigation and making an independent determination of the matter. The state engineer may enter property affected by the complaint ~~for the purpose of investigating~~ to investigate the complaint.

If the board fails to investigate and make a determination concerning the complaint within a reasonable time, but not to exceed one hundred twenty days, the person filing the complaint may file such ~~the~~ the complaint with the state engineer. The state engineer shall, without reference to chapter 28-32, cause the investigation and determination to be made, either by action against the board, or by ~~personally~~ conducting the investigation and ~~personally~~ making the determination.

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Legislative Assembly

If the state engineer determines that a drain, lateral drain, or ditch has been opened or established by a landowner or tenant contrary to title 61 or any rules adopted by the board, the state engineer shall take one of three actions:

1. Notify the landowner by certified mail at the landowner's post-office address of record;
2. Return the matter to the jurisdiction of the board along with the investigation report; or
3. Forward the drainage complaint and investigation report to the state's attorney.

If the state engineer decides to notify the landowner, the notice must specify the nature and extent of the noncompliance and must state that if the drain, lateral drain, or ditch is not closed or filled within ~~such~~ a reasonable time as determined by the state engineer ~~shall determine~~, but not less than thirty days, the state engineer shall procure the closing or filling of the drain, lateral drain, or ditch and assess the cost thereof, against the property of the landowner responsible. The notice from the state engineer must state that the affected landowner may, within fifteen days of the date the notice is mailed, demand, in writing, a hearing on the matter. Upon receipt of the demand, the state engineer shall set a hearing date within fifteen days from the date the demand is received. If, in the opinion of the state engineer, more than one landowner or tenant has been responsible, the costs may be assessed on a pro rata basis in proportion to the responsibility of the landowners. Upon assessment of costs, the state engineer shall certify the assessment to the county auditor of the county where the noncomplying drain, lateral drain, or ditch is located. The county auditor shall extend the assessment

against the property assessed. Each assessment must be collected and paid as other taxes are collected and paid. Assessments collected must be deposited with the state treasurer and are hereby appropriated out of the state treasury and must be credited to the contract fund established by section 61-02-64.1. Any person aggrieved by action of the state engineer under the provisions of this section may appeal the decision of the state engineer to the district court ~~in accordance with~~ under chapter 28-32. A hearing by the state engineer as provided for in this section ~~shall be~~ is a prerequisite to ~~such~~ an appeal.

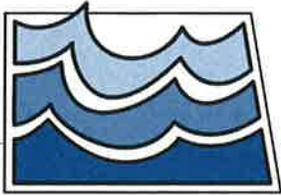
If the state engineer, after completing the investigation required under this section, decides to return the matter to the board, a complete copy of the investigation report shall be forwarded to the board and it shall include the nature and extent of the noncompliance. Upon having the matter returned to its jurisdiction, the board shall carry out the state engineer's decision ~~in accordance with~~ under the terms of this section.

If the state engineer, after completing the investigation required under this section, decides to forward the drainage complaint to the state's attorney, a complete copy of the investigation report must also be forwarded, which must include the nature and extent of the noncompliance. The state's attorney shall prosecute the complaint ~~in accordance with~~ under the statutory responsibilities prescribed in chapter 11-16.

In addition to the penalty imposed by the court ~~in the event of~~ if conviction under this statute, the court shall order the drain, lateral drain, or ditch closed or filled within ~~such~~ a reasonable time period as the court determines, but not less than thirty days. If the drain, lateral drain, or ditch is not closed or filled within the time prescribed by the court, the court shall procure the closing or filling of the drain, lateral drain, or ditch, and

Sixty-fourth
Legislative Assembly

assess the cost thereof against the property of the landowner responsible, in the same manner as other assessments under chapter 61-16.1 are levied. If, in the opinion of the court, more than one landowner or tenant has been responsible, the costs may be assessed on a pro rata basis in proportion to the responsibility of the landowners.



North Dakota State Water Commission

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Agenda 21)

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *TSD* Todd S. Sando, P.E., Chief Engineer - Secretary
SUBJECT: SWPP Project Update
DATE: November 17, 2014

Oliver, Mercer, North Dunn (OMND) Regional Service Area

Zap Service Area (SA) Rural Distribution System 7-9C & 7-9D:

Contracts 7-9C and 7-9D are closed out.

Center SA Rural Distribution System 7-9E & 7-9F:

The State Water Commission (SWC), at its October 7, 2013, meeting, awarded Contract 7-9F to Eatherly Constructors, Inc. This contract consists of 250 miles of 8" -1½" PVC pipe serving 330 rural water customers. The preconstruction conference for this contract was held on May 2, 2014, and the contractor started construction on June 16, 2014. This contract has an intermediate completion date of September 15, 2014, for a portion of the service area identified in the plans and has a substantial completion date of September 15, 2015, for the entire contract. As of the end of October, the contractor had installed 66.5 miles of pipe and 112 user connections with 78 turned over for service to Southwest Water Authority (SWA). The contractor has not met the intermediate completion date and liquidated damages are being withheld from the partial pay estimates. The contractor sent a letter requesting an 85-day time extension on the intermediate, substantial and final completion dates because of wet weather in summer 2014. The contractor has also not accepted any change orders because of the dispute in additional time warranted in the added work.

Contract 7-9E is the west Center SA rural distribution system. This contract includes furnishing and installing approximately 267 miles of 6"-1 ½ " ASTM D2241 gasketed joint pipe; 251 services; road crossings; connections to existing pipelines and other related appurtenances. The SWC at its May 29, 2014, meeting awarded this contract to Swanberg Construction, Valley City, North Dakota. This contract has an intermediate completion date of July 15, 2015, for a portion of the contract consisting of about 44 miles of pipe serving 54 rural customers. The substantial completion date for the remaining contract is November 15, 2015. The contractor started construction on October 13, 2014.

Contract 2-8E/2-8F Dunn Center SA Main Transmission Line (MTL):

Contract 2-8E is the MTL from the OMND WTP to a combination reservoir and booster station north of Halliday (Dunn Center booster station). This contract was awarded on May 21, 2013, to Carstensen Contracting Inc., and the contractor started construction on July 24, 2013. This contract involves furnishing and installing approximately 25 miles of pipe, an above grade booster station with concrete reservoir, PRV/Control vault, road crossings and related

appurtenances. All pipe on this contract has been installed. The segment of pipeline from the OMND WTP to the Dunn Center Booster Station has been turned over for service. Testing, disinfection and startup of the Dunn Center booster pump station and the pipeline segment from Dunn Center booster station remains to be completed on this contract. Liquidated damages are being withheld from the partial pay estimates as the contractor has not met the completion date.

Contract 2-8F is the MTL west of Halliday to west of Killdeer. This contract involves furnishing and installing approximately 40 miles of 16"-6" PVC pipe, connections to existing pipelines, 2 prefabricated steel meter vaults, road crossings and related appurtenances. This contract has two intermediate completion dates. The first intermediate completion date is August 15, 2014, for Bid Schedule 1, which is from north of Halliday to the Dunn Center Elevated tank. The second intermediate completion date is November 15, 2014, for Bid Schedule 2A which will provide connections to the Cities of Dunn Center and Killdeer. The Bid Schedule 2B and the entire project is to be substantially complete on or before August 1, 2015, which includes 2 prefabricated below grade booster pump stations and will enable the Killdeer Mountain, Grassy Butte and a portion of Fairfield service areas to be served from the OMND Water Treatment Plant (WTP).

The Commission awarded Contract 2-8F to Carstensen Contracting, Inc., at its February 27, 2014, conference call meeting. The contractor started construction on June 17, 2014, and has completed installation of approximately 18 miles of pipe. The contractor has not met the intermediate completion dates for Bid Schedule 1 and Bid Schedule 2A. Liquidated damages are being withheld from the partial pay estimates.

Contract 4-6 Dunn Center SA Pumps inside OMND WTP:

Administrative items remain before this contract can be closed out.

Contract 5-17 Dunn Center Elevated Reservoir:

This contract includes furnishing and installing a 1,000,000 gallon elevated composite reservoir. The substantial completion date on this contract was August 15, 2014. The welding of the tank bowl was completed on ground and it was lifted into place on July 22, 2014. Painting of the tank remains to be completed. The contractor submitted a letter requesting a 95 day extension because of abnormal 2013-2014 weather conditions. Bartlett and West/AECOM has responded to their extension request, indicating only 16 days in 2013-2014 winter season can be considered abnormal. Painting of the tank is not complete. Completion of this tank yet this year is unlikely because of the onset of cold temperatures.

Contract 5-15B 2nd Zap Reservoir:

This contract includes furnishing and installing a 1,650,000 gallon ground storage reservoir. The substantial completion date was August 15, 2014. The tank was placed in service on October 24, 2014. This is 71 days after the substantial completion data. However, some of the delay in putting the tank into service was the flow rate available from the water treatment plant for filling the tank.

Contract 8-3 Killdeer Mountain Elevated Reservoir:

This contract includes furnishing and installing a 250,000-gallon elevated reservoir. This contract was bid on October 18, 2013. The SWC awarded this contract to Maguire Iron, Inc. of Sioux Falls, South Dakota at its December 13, 2013, meeting. The substantial completion date is October 1, 2014. The preconstruction conference for this contract was held on April 16, 2014. Tank installation is complete. Painting of the tank is mostly complete. Some of the exterior coating on the tank was applied in unfavorable weather conditions. Changes in temperatures and humidity while the coating was curing led to blushing spots on the tank exterior, which needs corrective measures. The interior coating requires touch up and other items like overflow pipe still require coating.

OMND Water Treatment Plant (WTP) Phase II Expansion:

The SWC awarded Contract 3-1H, OMND WTP Phase II expansion to Northern Plains Contracting, Inc., and Edling Electric, Inc. at its December 13, 2013, meeting. The preconstruction conference for Contract 3-1H was held on January 29, 2014. The substantial completion date on this contract was August 1, 2014. The completion is delayed because of the coordination involved with keeping the WTP operational. The primary and secondary UF membranes and the RO membranes are operational. The startup of the Ozone systems is tentatively scheduled for the end of November.

Other Contracts

Contract 7-1C/7-8H Hydraulic Improvements in the Davis Buttes, New Hradec and South Fryburg SA:

The contractor for 7-1C/7-8H, Manitou Construction, Inc., has turned over the contract to its bonding company, Philadelphia Insurance Company. The bonding company's subcontractor has completed the punch list items. Discussion is ongoing with the bonding company regarding the liquidated damages being withheld on the contract.

Contract 8-1A New Hradec Reservoir:

This contract involves furnishing and installing a 296,000 gallon fusion powder coated bolted steel reservoir. The contract documents were executed on May 16, 2013, and the Notice to Proceed was issued on June 3, 2013. The substantial completion date on this contract was September 15, 2013. The tank was put into service on February 20, 2014. A partial pay estimate withholding \$207,750 was sent to the contractor. The contractor responded by informing that he does not agree with the liquidated damages that are being assessed and will not sign the partial pay estimate. A pre-final inspection was conducted the week of September 8, 2014, and a punch list of remaining items was forwarded to the contractor. The contractor has attempted to work on the punch list items, but the quality of work is sub-standard.

Contract 4-5 Finished Water Pumping Station (FWPS):

This contract consists of the construction of a 60' by 85' reinforced concrete and precast concrete building, and the installation of pumping, piping, mechanical, and electrical and instrumentation systems. The SWC at its May 29, 2014, meeting awarded this contract to John T. Jones Construction Company. The preconstruction conference for this contract was held on

June 19, 2014. The contractor mobilized to the site on July 7, 2014. The contractor has completed a new sanitary line connection and a sanitary lift station. The excavation for the reservoir is complete. The concrete pour for the base slab was completed in two sections. The concrete pours for the walls of the reservoir will be completed in eight sections and three out of the eight pours are complete.

Contract 1-2A Supplemental Raw Water Intake:

Construction update: The shaft collar construction is complete. The ground freezing operation was completed on August 22, 2014. The contractor J.W. Fowler (JWF), has placed and grouted 22 caisson rings. Excavation is ongoing for the 23rd ring. There are total 45 caisson rings. Fowler's initial schedule anticipated placing one ring per day and grouting after every two rings. Excavation is much slower than anticipated due to the frozen ground and excavation methods. An updated project schedule received from JWF indicates the completion of the project in November 2015. The substantial completion date on this contract is November 30, 2014.

An application for a Corps of Engineers easement and construction license for the Supplemental Intake screen and micro-tunneling boring machine (MTBM) receiving pit in the lake bottom was submitted on July 23, 2014. Drawings of the proposed excavation for the MTBM receiving pit was forwarded to the Corps of Engineers on August 29, 2014. Fowler has since revised the elevation of the proposed recovery trench twice and has now indicated that the final plan will be to have a level intake that terminates at the design screen location at the depth of approximately 18 feet below the lake bottom. This plan is to provide firm soil material for the MTBM and to have enough cover to counteract buoyancy and to prevent the machine from migrating upwards towards the softer material. The Corps permit requires a NEPA document for this activity and a permit from the ND Department of Health.

Differing Subsurface Claim: The contractor has sent multiple written notices with claim of differing subsurface conditions based on the technical data included by reference with the Contract Documents. The technical data referred to in the letter is the geotechnical report by BW/AECOM's sub consultant Braun Intertec. The Contract Documents also included the geotechnical report completed by Shannon & Wilson for the existing Basin Electric Power Cooperative intake. The Shannon & Wilson report describes two aquifers present at the BEPC intake caisson, an upper fine grained sand aquifer with relatively low transmissivity and a deeper sand and gravel aquifer with much higher transmissivity. The two aquifers are separated by a confining layer of stiff and hard lake deposits about 30-40 feet thick. The bottom of the proposed Supplemental Intake is located within this confining layer. The geotechnical report by Braun Intertec did not include a dewatering analysis. The report said dewatering may be required depending on the construction technique for the caisson and quoted the dewatering flow rate to dewater the upper aquifer from the Shannon & Willson report. The supplemental intake contract with JWF specifically includes design of the intake caisson and the means and methods required to construct the caisson, including any dewatering.

JWF has indicated that the cost and schedule impact because of the differing subsurface conditions is \$4.2 Million and the delay in the completion of the contract would be from November 30, 2014, to October 28, 2015. The supporting documentation from JWF for the

differing subsurface condition include county groundwater studies and JWF's reliance on the geological unit classification by Braun Intertec which indicated the Sentinel Butte formation. JWF's letter stated that the county studies indicate that the Sentinel Butte formation does not bear any water and they did not anticipate higher volumes of ground water during caisson construction. JWF's claim was rejected by BW/AECOM. JWF then requested mediation which is scheduled for December 10, 2014.

In early October 2014, JWF encountered a boulder which had an approximate volume of 70 cubic feet during the caisson excavation at a depth of approximately 50 feet. JWF sent in a claim of differing subsurface condition because of the boulder even though its removal took less than a day. The claim was rejected by BW/AECOM and Braun as the geotechnical report warned that boulders could be encountered in the glacial alluvium down to depths of 55-60 feet. JWF has requested that the claim of differing subsurface conditions because of the encountered boulder be included in the mediation scheduled. It is possible that JWF's strategy for this is in anticipation of future claims due to boulders encountered during tunneling.

Contract 3-2 Six (6) MGD Water Treatment Plant at Dickinson:

Contract 3-2A Membrane Equipment Procurement – The SWC awarded this contract to Tonka Water from Plymouth, Minnesota at its February 27, 2014, conference call meeting. BW/AECOM has received submittal drawings.

Contract 3-2B Softening Equipment Procurement – Contract documents have been executed with WesTech Engineering, Inc.

Contract 3-2C Ozone Equipment Procurement – Contract documents have been received from the contractor S.Roberts & Company.

Contract 3-2D Dickinson WTP Contract – We have received the 50 percent submittal set of drawings from BW/AECOM. We anticipate bidding this contract in Summer of 2015.

Contract 3-2E Residual Handling Building – We have received the Preliminary Design Report for this contract. The residual handling building will process the blow down waste from the lime softening basins and backwash waste from the filtration systems. We anticipate bidding this contract in March 2015. The estimated cost for this contract is substantially higher than initially anticipated. When additional funding for the SWPP was sought at the September SWC meeting, the estimated project cost for this contract was \$5.6 Million. The updated cost estimate for this contract is between \$7.9 Million to \$9.9 Million. The lower cost option eliminates the redundant filter press equipment and the Clean in place system and uses a less expensive air mixing system for the holding tanks. It is anticipated that the second filter press would be bid as a bid alternate.

Some of higher cost is because of the increased scope of the project. About 1100 feet of 30" raw water pipe line is included in this Contract. The existing 24-inch raw water pipeline will be impacted by the construction of this facility and paralleling of this pipeline to improve hydraulics is in the plans for increasing the raw water capacity to 18 MGD. Therefore, while the site is being impacted by construction replacing the raw water line and paralleling a portion of the line

is included in this contract. Additionally, since construction of the Residual Handling Building is expected to be underway before the adjacent WTP facility some of the site piping and stormwater facilities that are shared between the two facilities have been included in this Contract.

Project Update

Raw Water Line Capacity Upgrade Implementation Plan:

BW/AECOM completed a report detailing the plan for implementing the upgrades necessary to increase the capacity of the raw water MTL to deliver 18 MGD from the current 13.1 MGD for the Dickinson WTP. This plan includes pump station and surge protection facility upgrades along with parallel pipeline segments. The report identified improvements needed to achieve an intermediate capacity of an additional 2.2 MGD downstream of the OMND WTP. The intermediate capacity hydraulic improvements will be Phase 1 and the hydraulic improvements for the total capacity will be Phase II. Both phases will be pursued next biennium for an estimated project cost of \$90 Million. In addition to the raw water MTL upgrades, the Supplemental Intake contract that is currently under construction and the Supplemental Intake pump station with an estimated cost of approximately \$7.2 Million needs to be completed to realize the additional capacity.

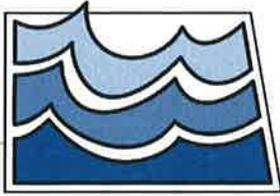
In order to realize 2.2 MGD additional capacity to the Dickinson WTP, the following hydraulic improvements are necessary

1. Approximately 4 miles of 30" parallel pipeline from the Intake to the Zap reservoirs
2. Dodge pumps station upgrades – Replace existing 700 HP pumps with 900 HP pumps
3. Richardton pump station upgrades – Replace existing 900 HP pumps with 1200 HP pumps
4. Richardton Reservoir – Construct additional 1.25 MG reservoir
5. Approximately 5.3 miles of 24" parallel pipeline between Richardton reservoir and Dickinson reservoir

In order to realize full 18 MGD capacity at the Dickinson WTP, in addition to the above hydraulic improvements the following improvements are necessary

1. Dodge pumps station upgrades – Add a 900 HP pump
2. Approximately 15 miles of 30" parallel pipeline between Dodge pump station and Richardton pump station
3. Approximately 1.7 miles of 30" parallel pipeline between Dickinson reservoir and Dickinson WTP
4. Dickinson reservoir – Construct additional 4.8 MG reservoir.

We have signed Specific Authorizations for the design of the pump station upgrades at Dodge and Richardton and for parallel piping between the intake and the Zap reservoir and from Richardton to Dickinson reservoir.



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Agenda 2)

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *TSD* Todd S. Sando, Chief Engineer-Secretary
SUBJECT: Capital Repayment and REM Rates for 2015 and SWA Budget
DATE: November 21, 2014

Under the agreement for the Transfer of Management, Operations, and Maintenance Responsibilities for the Southwest Pipeline Project, (Transfer Agreement) the Southwest Water Authority (SWA) must prepare a budget by December 15 of each year and submit it to the Secretary of the State Water Commission (SWC). The SWC received the budget on November 21, 2014. This budget is deemed approved unless the Secretary notifies the Authority of the Commission's disapproval by February 15.

SWA Budget:

Water rates are a primary component of the Authority's budgeting process. The SWC approves the capital repayment rate and Replacement and Extraordinary Maintenance (REM) rate explicitly by SWC action.

An amendment to the Transfer Agreement established the Consumer Price Index (CPI) in effect on September 1st (August CPI) as the basis for determining the capital repayment. In accordance with the amended Transfer Agreement, the September 1st CPI was used to calculate the capital repayment rate for 2015. The September 1st CPI this year was 237.9 versus 233.9 last year. The new capital repayment rates are \$1.14 per thousand gallons for contract users and \$34.88 per month for rural users. These compare with 2014 rates of \$1.12 per thousand gallons for contract users and \$34.30 per month for rural users. The 2005 capital repayment rate for rural users in Morton County receiving water through the Missouri West Water System transmission pipelines was set at \$22.00 per month by the Commission at its June 22, 2005, meeting. Applying the CPI adjustment to this figure results in a 2015 rate for these users of \$27.63 per month. The 2014 Capital Repayment rate for the Morton County users is \$27.17.

The rate for replacement and extraordinary maintenance (REM) was set by the Commission at its February 9, 1999, meeting at \$0.35 per thousand gallons. The original rate of \$0.30 per thousand gallons had been set in 1991. The SWA Board of Directors voted to increase the REM rate to \$0.40 per thousand gallons for their 2013 budget. Bartlett & West/AECOM updated the REM rate analysis by including the entire current and future planned infrastructure for the project. The analysis also included the replacement of the existing 12 Million Gallons per Day Water Treatment Plant (WTP) at Dickinson. The analysis had multiple variables like inflation rate, rural growth rate, and timeframe and projected cost of the Dickinson WTP replacement. It was evident from the analysis that replacing the Dickinson WTP is a huge project for the SWA and the REM funding alone would not be enough to meet the cost of the replacement. Replacing the Dickinson WTP in 2030 and at a cost of \$54 Million would require the REM rate to increase to

\$1.15 per thousand gallons. The SWA Board of Directors voted to increase the REM rate from \$0.40 to \$0.50 per thousand gallons for the 2014 water rate. The REM rate was increased from \$0.50 to \$0.55 per thousand gallons for the 2015 water rate.

The SWA's budget proposes \$22.00 per thousand gallons water rate for oil industry contracts. This is an increase from the \$20.00 per thousand gallons rate approved last year. The Capital Repayment rate for oil industry contracts other than the Dickinson Water Depot built by the SWA is proposed to increase to \$7.33 from \$6.67 per thousand gallons. The budget also proposes increasing the REM rate to \$7.33 from \$6.67 per thousand gallons. This is the same rate for the communities selling water to the oil industry.

The Capital Repayment for the Dickinson Water Depot is proposed to increase from \$2.24 to \$2.46 per thousand gallons. The percentage increase in the Capital Repayment rate is the same percentage as the rate increase. Similarly the REM rate was increased from \$4.67 to \$5.14 per thousand gallons.

For the contract customers, the SWA's water rate for 2015 increases from \$3.61 to \$3.94 per thousand gallons. The increase of \$0.33 is the total of \$0.02 increase in capital repayment, \$0.05 increase in REM rate and \$0.26 increase in the Operation and Maintenance rate.

For rural customers the minimum monthly rate is increasing from \$39.30 to \$39.88. The breakdown of the monthly minimum is \$34.88 towards capital repayment and \$5.00 towards the meter fee. The SWC receives the meter fee for the first two years and then it goes the SWA for fixed Operation and Maintenance. The usage rate for the rural customers increased from \$4.06 to \$4.39 per thousand gallons. The increase of \$0.33 is the total of \$0.02 increase in distribution Operation and Maintenance, \$0.05 increase in REM rate and \$0.26 increase in the transmission Operation and Maintenance rate.

Included in the SWA's budget is the budget for the REM funds. The estimated beginning balance in REM funds for 2015 is \$12.83 Million, estimated income for 2015 is \$3.52 Million and estimated expenses for 2015 is \$1.01 Million for a year-end balance of \$15.29 Million. The possible expenses for 2015 from the REM fund includes, air vacuum and blow off replacement, replacement of rectifiers and anode beds, SCADA upgrades, pipe relocation in the right-of-way, repair and replacement of a motor at the intake, electrical service to the Dickinson Water Treatment Plant, pumps at Rhame Booster to serve the City of Rhame, replacement of steam water heaters and steam traps at the Dickinson WTP, repair under the concrete slab in the storage building at the Dickinson WTP, replacing the pinch valve at the concentrate valve in the Reverse Osmosis discharge line and cleaning of the west lime sludge pond at the Dickinson WTP.

I recommend that the State Water Commission establish 2015 Capital Repayment and REM rates as follows:

Capital Repayment for contract and rural customers: \$1.14 per thousand gallons for contract users, \$27.63 for rural users in Morton County with water service from Missouri West Water System, \$34.88 per month for other rural

users. Capital Repayment for oil industry contracts: \$2.46 for Dickinson Water Depot and \$7.73 for other oil industry contracts.

REM Rate: \$0.55 per thousand gallons for the contract and rural users, \$7.73 per thousand gallons for oil industry contracts other than the SWA's Dickinson Water Depot and \$5.14 per thousand gallons for the SWA's Dickinson Water Depot.

**CAPITAL REPAYMENT
2015**

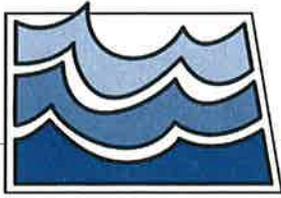
Adjustment for Inflation

CONTRACT RATES

September 2014 (August 2014) CPI:		237.9
Adjustment to Base:	0.3338279	712.5
Change from 448.4:		1.59
Adjustment:		\$0.42
Base Capital Repayment Rate:		\$0.72
Adjusted Capital Repayment Rate (2015 rate)		\$1.14
2014 Rate:		\$1.12
Change from 2014 Rate		\$0.02

RURAL RATES

Base Capital Repayment Rate:		\$21.95
Adjustment:		\$12.93
2014 Inflation (Sep-Aug)		1.69%
2015 Rate:		\$34.88
2014 Rate:		\$34.30
Change from 2014 Rate		\$0.58
Rural Minimum for 2014		\$39.30
Change from 2014 Rate		\$0.58
2015 minimum		\$39.88
Capital Repayment for customers who tie into MWWS - 2014		\$27.17
Change from 2014 Rate		\$0.46
2015 Rate		\$27.63



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Agenda M

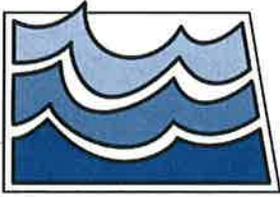
MEMORANDUM

TO: Governor Jack Dalrymple
North Dakota State Water Commission Members
FROM: *J.S.* Todd Sando, P.E., Secretary
SUBJECT: SWC Approval of Conditional Water Permit Application No. 6559 for Industrial Water Use from the Red River of the North
DATE: November 24, 2014

The City of Grand Forks applied to the State Engineers Office through Conditional Water Permit No. 6559 to divert 6,717.0 acre-feet of water annually from a point of diversion in the SW1/4 Section 2, Township 151 North, Range 50 West, at a total pumping rate of 4,165 gallons per minute for industrial use. North Dakota Century Code 61-04-06 states in part, "If an application is approved, the state engineer shall issue a conditional water permit allowing the applicant to appropriate water. Provided, however, the commission may, by resolution, reserve unto itself final approval authority over any specific water permit in excess of five thousand acre-feet."

The industrial use under Conditional Water Permit No. 6559 is to provide water for large industrial users receiving water from the City of Grand Forks. The appropriation will allow for water to be provided to industry beyond the amounts available from the city lagoons under Conditional Water Permit No. 6560.

I recommend that the State Water Commission approve Conditional Water Permit No. 6559 for appropriation of 6,717.0 acre-feet of water annually from the point of diversion located in the SW1/4 Section 2, Township 151 North, Range 50 West, at a total pumping rate of 4,165 gallons per minute for industrial use.



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Agenda N

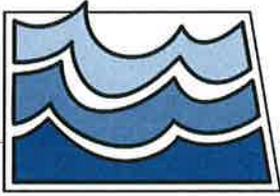
MEMORANDUM

TO: Governor Jack Dalrymple
North Dakota State Water Commission Members
FROM: *TSD* Todd Sando, P.E., Secretary
SUBJECT: SWC Approval of Conditional Water Permit Application No. 6560 for Industrial Water Use from the City of Grand Forks Waste-Water Lagoons
DATE: November 24, 2014

The City of Grand Forks applied to the State Engineers Office through Conditional Water Permit Application No. 6560 to divert 11,755.0 acre-feet of water annually from the City of Grand Forks Waste-Water Lagoons from points of diversion in the SE1/4 and NW1/4 Section 23, and the SW1/4 Section 26, Township 152 North, Range 51 West, at a total pumping rate of 7,287 gallons per minute for industrial use. North Dakota Century Code 61-04-06 states in part, "If an application is approved, the state engineer shall issue a conditional water permit allowing the applicant to appropriate water. Provided, however, the commission may, by resolution, reserve unto itself final approval authority over any specific water permit in excess of five thousand acre-feet."

The proposed industrial use under Conditional Water Permit No. 6560 is to provide water for a large industrial user to be supplied water from the Grand Forks Waste-Water Lagoons. This would provide for a re-use of the City of Grand Forks municipal waste-water. Presently, the waste-water is treated and released back to the Red River.

I recommend that the State Water Commission approve Conditional Water Permit No. 6560 for appropriation of 11,755.0 acre-feet of water annually from the Grand Forks Waste-Water Lagoons from points of diversion in the SE1/4 and NW1/4 Section 23, and the SW1/4 Section 26, Township 152 North, Range 51 West, at a total pumping rate of 7,287 gallons per minute for industrial use.



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Agenda P1

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *JS* Todd S. Sando, P.E., Chief Engineer - Secretary
SUBJECT: Mouse River Status Report
DATE: November 24, 2014

ISRB:

The International Agreement governing operations of the Souris River Flood Control Project contains language calling for periodic review of the operations plans and minor changes and clarifications. It also implies the need for Reservoir Regulation Manuals (RRM's) and an operating plan for rainfall. A "Core Group" was identified by the International Souris River Board to review and clarify Annex A within the scope of this language. This group met in St. Paul on October 7th and 8th. Numerous editorial changes were recommended and several passages dealing with conditions in the early history, which no longer exist, were identified.

The major effort in this process will be the RRM's, which falls upon the dam owner. Saskatchewan Water Security is in the process of developing these documents. The next face-to-face meeting of the ISRB will be in February and the Core Group will report progress and seek further direction at that time.

MREFP:

The Mouse River Enhanced Flood Protection Plan is currently in a phase of intense, but easily overlooked activity.

Design proceeds on the three components (2 levees and 1 floodwall) currently approved. Since these features would modify or abut existing works constructed by the Corps of Engineers, they must receive a permit to do so. This is referred to as a Section 408 Permit. We have had several meetings with Corps staff developing the process of applying for this permit. It is critical since the permit will need to cover all the works needed within the scope of the existing federal works, but should not extend to include all the other actions needed to accomplish the total basin goal. Taking this approach we have scoped the project for 408 purposes as extending from Burlington through the downstream (East) side of Minot. This area contains all potential impacts from the protective works, and the federal works of concern are discontinuous here. There is a federal levee at Velva, but that structure is self-contained and can be addressed separately when we get there. At this point it seems the Corps is amenable to this approach. This process will also probably identify and launch whatever other permitting and environmental work is required.

We are also seeking ways to coordinate these developments into the requirements of the System Wide Improvement Framework program, which identifies repair and maintenance obligations of the local sponsor. If some of these obligations can be met by the new construction, we can avoid much duplication.

One feature of the 408 permitting process mentioned above is that if the Corps is not funded for a particular project (which is the case here) they must enter into an agreement with the local sponsors to do the necessary reviews. This is referred to as a "Section 214 Agreement" and there is a cost associated. This will be addressed in another memo.

TSS:JTF:pdh/1974



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Agenda P2)

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *TSS* Todd Sando, State Engineer
SUBJECT: Mouse River Section 214 Funding
DATE: November 24, 2014

Many of the features of the Mouse River Enhanced Flood Protection Project will result in modification of the existing Corps of Engineers structures. This requires a 408 permit. We have been in discussions with the Corps on this matter, and it appears that this is the right place to begin the permitting process for the project.

To proceed further, since the Corps is not currently funded for this effort, the sponsors must enter into a Section 214 agreement with the Corps for them to participate. The cost for this is currently estimated to be \$500,000. This funding is required before the Corps can begin.

Attached is a request from the Souris River Joint Water Resources Board for 75 percent of this cost - \$375,000.

I recommend the State Water Commission approve \$375,000 from the funds appropriated to the State Water Commission in the 2013-2015 biennium for the Souris River Joint Water Resources Board for the Souris River Joint Water Resources Board to enter into a Section 214 Agreement with the St. Paul District Corps of Engineers.

TSS:JTF:pdh/1974
Attachments



ND STATE WATER COMMISSION

2013-2015 Project Information and Planning Form

This form should be filled out by the project/program sponsor or consultant, with SWC staff assistance as needed. The information will be reviewed by SWC staff and added to our project/program database to assist with our budgeting efforts, and completion of a 2013-2015 Water Development Report to the Legislature.

This form will also serve as the first step in obtaining cost-share assistance. *However, this form alone will not be considered as your formal request for SWC cost-share.* Once a project is in more advanced stages and is ready for SWC cost-share consideration, detailed cost and engineering information should be submitted with a cost-share request letter at that time.

Please answer the following questions as thoroughly as possible. If additional space is required, *please use extra sheets as necessary.* For assistance with this form, please contact the SWC Planning and Education Division at (701) 328-4989.

1. **Project, program, or study name:** Mouse River Enhanced Flood protection Project

2. **Sponsor(s):** Souris River Joint Board

3. **Location (county, city, township, etc.):** Minot Nd - Ward County

4. **Description of request:** new update (previously submitted)



5. **Specific needs addressed by the project, program, or study:**

a. **If study, what type:**

- Water Supply Hydrologic Floodplain Mgmt Feasibility
 Other

Please explain the above checked item: Funding for USACE to review design and environmental criteria.

b. **If project/program:**

- Flood Control Snagging & Clearing Water Quality
 Recreation Bank Stabilization Rural Flood Control
 Channel Imp. Irrigation Other
 Multi-Purpose Water Supply

c. Please explain each above checked item: Funding of 214 agreement between SRJB and USACE to allow the USACE to receive funds for review of environmental, 408, and design criteria for MREFPP..

6. **Jurisdictions/Stakeholders involved:** SRJB/ City of Minot/ Ward County Water Resource Board

7. **Description of problem or need and how project addresses that problem or need:** In order to proceed with the environmental work, 408 USACE process and design process for the MREFPP, participation from the USACE is critical. Since the USACE does not have a funding source identified in their fiscal budget, the only way to engage them in critical discussion as we proceed forward with the MREFPP is to fund the USACE costs for review and participation. This is allowable under a 214 process in which an agreement is signed with the USACE and

SRJB to allow the USACE to receive funds for time and expenses they incur while reviewing and participating in the review and development process of the entire MREFPP.

8. Has a feasibility study been completed?: yes no ongoing not applicable

9. Has engineering design been completed?: yes no ongoing not applicable

10. Have land or easements been acquired?: yes no ongoing not applicable

11. Have all necessary permits been acquired?: yes no ongoing not applicable

12. Level of public review project or program has undergone: Several public input meetings were held during the development of the MREFPP. Public input will continue to be incorporated into all future processes as the design, 408 and environmental process is completed.

13. Do you expect any obstacles to implementation (i.e., problems with land acquisition, permits, funding, local opposition, environmental concerns, etc.)? These issues will be addressed with the future study and engineering

14. Estimated project or program total implementation costs: \$500,000

15. Funding sources (Total need):	Cash	In-kind
Federal	\$	\$
State	\$375,000	\$
Local	\$125,000	\$
Other	\$	\$

16. Funding timeline (carefully consider when SWC cost-share will be needed):

Source	2013-2015 7/1/13-6/30/15	2015-2017 7/1/15-6/30/17	2017-2019 7/1/17-6/30/19	Beyond 7/1/19
Federal	\$	\$	\$	\$
State	\$375,000	\$	\$	\$
Local	\$125,000	\$	\$	\$
Total	\$	\$	\$	\$

17. Please explain implementation timelines, considering all phases and their current status: SRJB is proceeding with design of the first 3 phases of the MREFPP in Minot. Funding for engineering was approved by SWC earlier in 2014. These portions of the project have been delayed due to discussions with the USACE on what is required for the 408 process, 404 process and SWIF process on the portions of the project from Burlington to Minot. Numerous meetings have taken place to define the required information that will be needed for all of these approvals as well as how the MREFPP can be staged or phased throughout the entire Mouse River basin.

Submitted by (name & title): David Ashley, Chairman - Souris River Joint Board

David Ashley, Chairman
 4899 766 Ave W
 Voltaire, ND 58794

Address and Telephone: ???????

Date: 11-3-2014

***Mail to: Planning & Education Division, ND State Water Commission, 900 E Boulevard Ave.
Dept. 770, Bismarck, ND 58505-0850***

MEMORANDUM OF AGREEMENT
BETWEEN
THE SOURIS RIVER JOINT WATER RESOURCE BOARD, NORTH DAKOTA
AND
THE U.S. ARMY CORPS OF ENGINEERS
FOR THE SECTION 408 EVALUATION OF
THE MOUSE RIVER ENHANCED FLOOD PROTECTION PROJECT

ARTICLE I - PURPOSE AND AUTHORITY

This Memorandum of Agreement (MOA) is entered into by and between the St. Paul District U.S. Army Corps of Engineers (Corps) and the Souris River Joint Water Resource Board, North Dakota (SRJB) (together, "the parties") for the purpose of establishing a mutual framework governing the respective responsibilities of the parties for the acceptance and expenditure of funds provided by SRJB to expedite evaluation of its proposed alteration of a Corps project in accordance with 33 U.S.C. 408 (Section 408). Section 408 authorizes the Secretary of the Army to grant permission for the alteration, occupation, or use of Corps projects if the Secretary determines that such alteration, occupation, or use will not be injurious to the public interest and will not impair the usefulness of the project.

This MOA is entered into pursuant to Section 214 of the Water Resources Development Act of 2000 (WRDA 2000, Public Law No. 106-541), as amended. Section 214 allows the Secretary of the Army, after public notice, to accept and expend funds contributed by a non-federal public entity to expedite the evaluation of the entity's request to make alterations to, or to temporarily or permanently occupy or use, a federally authorized civil works project pursuant to Section 408. In doing so, the Secretary must ensure that the use of such funds will not impact impartial decision making with respect to the entity's request, either substantively or procedurally. The authority provided in Section 214 is in effect from October 1, 2000 to December 31, 2016.

ARTICLE II - SCOPE

The SRJB is proposing significant alterations to multiple federal projects within the Souris River Basin in conjunction with a project locally referred to as the Mouse River Enhanced Flood Protection (MREFP) project. The MREFP project was initiated after the record-breaking June 2011 flood on the Mouse River. As currently designed, the proposed project will pass a flow of 27,400 cubic feet per second, which approximates the peak flow during the 2011 flood event. The proposed alterations include raising, relocating, and/or otherwise altering portions of the authorized Corps channelization and levee projects within the Souris Basin from upstream of Burlington, ND down to Minot, ND. The proposed project would be implemented in phases, with each phase including one or more reaches. The proposed project may include as many as 30 reaches and would likely take approximately 20 years to complete. The parties anticipate that most of the project phases will require Section 408 permission as much of the work being contemplated would require alterations to existing federal projects.

The Corps' Operation and Maintenance Inspection of Completed Works program is funded through the Corps' Civil Works program in the annual federal budget. Funding within the Inspection of Completed Works program is insufficient to completely fund the technical and policy reviews required for the evaluation of proposed alterations pursuant to Section 408. This MOA provides a framework for the Corps to accept funds from SRJB to expedite processing of SRJB's proposed alterations when the Corps' Inspection of Completed Work Program budget is insufficient to complete the design reviews within the SRJB's desired implementation schedule. The additional funds from the SRJB under this MOA and phase-specific agreements executed pursuant to this MOA will be used to augment the Inspection of Completed Works budget of the St. Paul District and supporting Districts (if required) in accordance with the provisions of Section 214 of WRDA 2000, as amended. Funding to the supporting Districts may be required to facilitate independent reviews by staff outside the St. Paul District.

Funds will be expended primarily on the direct labor and overhead of Corps' Civil Works personnel evaluating the engineering plans and report prepared by SRJB's engineering consultants. Such review and processing activities would include, but not be limited to, the following: technical analyses and writing, real estate evaluation, risk analysis, copying or other clerical/support tasks, acquisition of GIS data, site visits, training, travel, coordination activities, additional personnel (including support/clerical staff), contracting, environmental documentation preparation and review. Funds will not be used for drafting, negotiating, or issuing any necessary real estate instruments. The funding under this MOA and phase-specific agreements executed pursuant to this MOA does not cover any Corps quality assurance inspections that may be required during construction for any proposed alteration that is approved for implementation.

The work will be performed within the framework of the General Scope of Work attached to this MOA, and in accordance with phase-specific agreements to be executed pursuant to this MOA.

ARTICLE III – PHASE-SPECIFIC AGREEMENTS

Phase-specific agreements will be negotiated under this MOA for each phase for which Section 408 permission is required if insufficient Inspection of Completed Works funding is available to accomplish the evaluation in the timeframe desired by the SRJB. Each phase-specific agreement will identify a scope of work and provide an itemized budget estimate for the phase to which it applies.

ARTICLE IV - INTERGOVERNMENTAL COMMUNICATIONS

To provide for consistent and effective communication between the Corps and the SRJB, each party shall appoint a Principal Representative to serve as its central point of contact on matters relating to this MOA and any phase-specific agreement entered into pursuant to this MOA. Additional representatives may also be appointed to serve as technical points of contact for the Section 408 review.

ARTICLE V - RESPONSIBILITIES OF THE PARTIES

A. Responsibilities of the Corps of Engineers

1. The Corps shall provide the SRJB with services in accordance with the purpose, terms, and conditions of this MOA and phase-specific agreements entered into pursuant to this MOA.

2. The Corps shall provide detailed periodic progress, financial, and other reports to the SRJB as agreed to by the Principal Representatives. Financial reports shall include information on all funds received and expended and on forecast expenditures.

3. The Corps will establish a separate financial account to track receipt and expenditure of funds associated with this MOA and phase-specific agreements entered into pursuant to this MOA. Corps employees will charge their time against this account when doing work to expedite the processing of the SRJB's alteration requests.

4. The Corps will follow procedures to ensure impartial decision-making. Approval of the SRJB's Section 408 alteration requests has been determined to be at the Director of Civil Works level. To ensure the funds will not impact impartial decision-making, the following procedures would apply:

a. No funds received under a Section 214 agreement shall be expended for the District Commander or the Division Commander's consideration and recommendation to the Director of Civil Works regarding the SRJB's Section 408 alteration requests.

b. Draft technical documents or draft decision documents resulting from the use of funds obtained from the SRJB under Section 214 will be reviewed and signed by a reviewer who is not funded by funds received under Section 214 for the SRJB's alteration requests.

c. All final decisions for cases where Section 214 funds are used will be made available on the St. Paul District web page.

d. The Corps will not eliminate any procedures or decisions that would otherwise be required for the type of project and alteration request under consideration.

e. The Corps will comply with all applicable laws and regulations.

f. Section 214 funds will only be expended to provide expedited review of the participating non-federal entity's alteration requests.

B. Responsibilities of the SRJB

1. Upon receipt of each signed phase-specific agreement entered into pursuant to this MOA, the SRJB will transmit an advance payment equal to estimated funding necessary for the scope of work associated with the signed phase-specific agreement.

2. For each alteration request, the SRJB will coordinate with the Corps, through its Principal Representative or engineering consultant, a schedule of required submittals and reviews.

3. For each alteration request, the SRJB will submit, through its Principal Representative or engineering consultant, all required engineering and environmental documents required by the Section 408 guidance provided by the Corps including an Independent External Peer Review report.

ARTICLE VI - FUNDING

The SRJB shall pay all costs associated with the Corps' provision of services under this MOA and phase-specific agreements executed pursuant to this MOA. The funding estimated to support the services described in Article II of this MOA will be provided under subsequent phase-specific agreements that include a detailed scope of work and an itemized budget estimate for the phase being addressed by that agreement. Funds for the services to be provided by the Corps shall be provided by a check payable to "FAO, USAED ST. PAUL". Funds will be deposited with the US Treasury prior to incurrence of any obligation by the Corps.

If the Corps forecasts its actual costs under this MOA and subsequent phase-specific agreements to exceed the amount of funds available, it shall promptly notify the SRJB of the amount of additional funds necessary to complete the work. The SRJB shall either provide the additional funds to the Corps or the parties will agree to terminate this MOA or any phase-specific agreement for which the Corps' services are ongoing. See Article XII – Amendment, Modification, or Termination for additional information on termination of the MOA. The lack of or delay in funding under this agreement or the termination of this agreement (or any phase-specific agreement) shall in no way relieve the Corps of its obligation to evaluate the SRJB's Section 408 requests. However, the evaluation of any such request will proceed on a timeframe consistent with the Corps' work priorities and available (non-Section 214) budgetary resources.

Within 90 days of completing the work under each phase-specific agreement entered into pursuant to this MOA, the Corps shall conduct an accounting to determine the actual costs of the work conducted under that phase-specific agreement. Within 30 days of completion of this accounting, the Corps shall return to the SRJB any funds advanced in excess of the actual costs as then known, or the SRJB shall provide any additional funds necessary to cover the actual costs as then known. Such an accounting shall in no way limit the SRJB's duty in accordance with Article X to pay for any costs which may become known after the final accounting.

ARTICLE VII - APPLICABLE LAWS

This MOA and all documents and actions pursuant to it shall be governed by the applicable statutes, regulations, directives, and procedures of the United States.

ARTICLE VIII - DISPUTE RESOLUTION

The parties agree that, in the event of a dispute between the parties (excluding a dispute regarding the Corps' final decision on the SRJB's alteration requests for any phase of the proposed project), the SRJB and the Corps shall use their best efforts to resolve that dispute in an informal fashion through consultation and communication, or other forms of non-binding alternative dispute resolution mutually acceptable to the parties.

Any disputes arising from or relating to this agreement not resolved by the informal nonbinding procedures in the paragraph above shall be resolved in an appropriate federal court applying federal law. Nothing in the preceding sentence suggests that any particular disagreement or dispute is subject to judicial review under federal law.

ARTICLE IX - RESPONSIBILITY FOR COSTS

If liability of any kind is imposed on the United States relating to the Corps' provision of services under this MOA and phase-specific agreements executed pursuant to this MOA, the Corps will accept accountability for its actions, but the SRJB shall remain responsible as the program proponent for providing such funds as are necessary to discharge the liability, and all related costs. This obligation extends to all funds legally available to discharge this liability, including funds that may be made legally available through transfer, reprogramming or other means. Should the SRJB have insufficient funds legally available, including funds that may be made legally available through transfer, reprogramming or other means, it remains responsible for seeking additional funds.

Notwithstanding the above, this MOA does not confer any liability upon the SRJB for claims payable by the Corps under the Federal Torts Claims Act. Provided further that nothing in this MOA is intended or will be construed to create any rights or remedies for any third party and no third party is intended to be a beneficiary of this MOA.

ARTICLE X - PUBLIC INFORMATION

In general, the SRJB is responsible for all public information regarding its proposed undertakings. The SRJB or the Corps shall make its best efforts to give the other party advance notice before making any public statement regarding work contemplated, undertaken, or completed pursuant to this MOA or phase-specific agreements executed pursuant to this MOA.

ARTICLE XI - MISCELLANEOUS

A. Other Relationships or Obligations: This MOA shall not affect any pre-existing or independent relationships or obligations between the SRJB and the Corps.

B. Severability: If any provision of this MOA is determined to be invalid or unenforceable, the remaining provisions shall remain in force and unaffected to the fullest extent permitted by law and regulation.

C. In undertaking its review of Section 408 alteration requests under this MOA, the Corps is acting in its sovereign capacity and not as a contractor, agent, employee or servant of the SRJB. The evaluations and work product generated by the Corps, its officers, agents, employees, and contractors in evaluating the SRJB's Section 408 requests is within the exclusive jurisdiction of the United States Government acting under federal law and is not subject to examination, review, or release under any provision of state law.

ARTICLE XII - AMENDMENT, MODIFICATION AND TERMINATION

This MOA may be modified or amended only by written, mutual agreement of the parties. Either party may terminate this MOA or any given phase-specific agreement by providing written notice to the other party. The termination shall be effective upon the sixtieth calendar day following notice, unless another date is agreed upon by the parties. In the event of termination, the SRJB shall continue to be responsible for all costs incurred by the Corps under this MOA and phase-specific agreements executed pursuant to this MOA and for the costs of closing out or transferring any ongoing contracts. If the MOA is terminated prior to the Corps' completion of the processing of one or more of the SRJB's alteration requests, the Corps' remaining work on the SRJB's alteration requests will be handled like that of any other entity requesting approval for an alteration of a Corps project.

ARTICLE XIII - EFFECTIVE DATE

This MOA shall become effective when signed by both the SRJB and the Corps. A phase-specific agreement shall become effective when signed by both the SRJB and the Corps.

SOURIS RIVER JOINT WATER
RESOURCE BOARD

U.S. ARMY CORPS OF ENGINEERS

DAVID ASHLEY
Chairman

DANIEL C. KOPROWSKI
Colonel, Corps of Engineers
District Commander

DATE: _____

DATE: _____



North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TTY 800-366-6888 • FAX 701-328-3696 • INTERNET: <http://swc.nd.gov>

Agenda Q

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *Todd* Todd Sando, P.E., Chief Engineer-Secretary
SUBJECT: NAWS – Project Update
DATE: November 24, 2014

Supplemental EIS

Reclamation continues to work on the Supplemental Environmental Impact Statement (SEIS). The draft SEIS was released for public comment June 20, 2014, and the public comment period ended September 10, 2014. The State Water Commission submitted a comment letter and continues to work with the Bureau of Reclamation to provide information to aid in responding to comments received from other entities. A meeting is planned for December 9, 2014, with the Environmental Protection Agency, Reclamation, North Dakota Department of Health, City of Minot, and SWC staff to discuss concerns raised by EPA in their comment letter. A cooperating agency team (CAT) meeting is planned for after the holidays to go through responses to comments received. We anticipate a draft version of the Final SEIS being shared with the CAT members for their review prior to publication. Current estimates would have this process extending into March 2015.

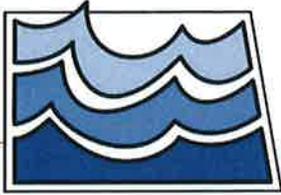
Manitoba & Missouri Lawsuit

The Federal Court issued an order on March 5, 2010, requiring Reclamation to take a hard look at (1) the cumulative impacts of water withdrawal on the water levels of Lake Sakakawea and the Missouri River, and (2) the consequences of biota transfer into the Hudson Bay Basin, including Canada. The order dated October 25, 2010, allowed construction on the improvements in the Minot Water Treatment Plant and pipelines to the Minot Air Force Base and Glenburn to proceed. However, it did not allow design work to continue on the intake. The court ordered a conference call on November 15, 2012. The court expressed concerns about construction taking place under the previously approved and unopposed injunction modifications possibly affecting the outcome of the SEIS. A briefing explaining the additional construction on the northern tier, justifying the need and explaining the independence from supply or biota treatment alternatives was filed December 6, 2012. Missouri and Manitoba filed responses January 6, 2013, and our response was filed January 22, 2013. The Court issued an opinion on March 1, 2013, modifying the injunction to not permit 'new pipeline construction or new pipeline construction contracts'. We provided notice to the Court in September of our intention to begin design work on replacement of the softening facilities and associated equipment at the Minot water treatment facility.

TS:TF:ph/237-04

JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
CHIEF ENGINEER AND SECRETARY



North Dakota State Water Commission

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Agenda R

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *T.S.D.* Todd Sando, P.E., Chief Engineer/Secretary
SUBJECT: Missouri River Update
DATE: November 19, 2014

System/Reservoir Status

System volume on November 19 in the six mainstem reservoirs was 57.1 million acre-feet (MAF), 1.0 MAF above the base of flood control. This is 3.0 MAF above the average system volume for the end of November, and 6.3 MAF more than last year. The volume of water in the system on November 19, 2011, was 57.9 MAF.

On November 19, Lake Sakakawea was at an elevation of 1841.9 feet msl, 4.4 feet above the base of flood control. This is 7.2 feet higher than a year ago and 7.0 feet above its average end of November elevation. The minimum end of November elevation was 1808.9 feet msl in 2006 and the maximum end of November elevation was 1846.7 feet msl in 1972. The elevation of Lake Sakakawea on November 19, 2011, was 1840.8 ft msl.

On November 19, the elevation of Lake Oahe was 1609.1 feet msl, 1.6 feet above the base of flood control. This is 7.2 feet higher than last year and 10.4 feet higher than the average end of November elevation. The minimum end of November elevation was 1573.2 feet msl in 2006, and the maximum end of November elevation was 1612.4 feet msl in 1997. The elevation of Lake Oahe on November 19, 2011, was 1608.1 feet msl.

On November 19, the elevation of Fort Peck was 2232.9 feet msl, 1.1 feet below the base of flood control. This is 9.1 feet higher than a year ago and 3.4 feet higher than the average end of November elevation. The minimum end of November elevation was 2199.8 feet msl in 2004, and the maximum end of November elevation was 2245.3 feet msl in 1975. The elevation of Fort Peck on November 19, 2011, was 2237.4 feet msl.

Releases from Garrison Dam are currently about 19,000 cfs. During freeze-in, it is normal for the river stage to increase and releases will be reduced during this period to compensate for the stage increase. After the ice forms, releases will be gradually increased to approximately 22,000 cfs and stay at that level during January and February. It is expected that a flow of 22,000 cfs under ice-affected conditions will cause a river stage of about 9 feet at Bismarck on the Missouri River.

The State Engineer sent letters on September 11 and October 14, urging the Corps to increase releases at that time during open water conditions, instead of during ice-affected conditions. Open water conditions allow for greater discharges at lower stages, and therefore, provide more flexibility in evacuating water in Lake Sakakawea. The Corp responded by increasing releases

JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
CHIEF ENGINEER AND SECRETARY

slightly during the middle of October. The Corps has stated that they will coordinate closely with the National Weather Service office in Bismarck, as well as other federal, state, and local agencies during periods of freeze-in and ice-out to reduce flood risk and ensure the public is aware of rapidly changing conditions.

Annual Operating Plan

The fall Annual Operating Plan public meeting in Bismarck was held at the Civic Center on October 28. The State Engineer provided comments, which are attached to this memo. The Corps' public comment period closes on November 21.

NOAA Outlooks for this Winter

The Missouri River basin is predominantly drought free and soil moisture in most of the basin is wetter than average entering the winter because of heavy summer and fall precipitation. For this upcoming winter, the temperature outlook shows an increased chance of being warmer than normal in the upper basin and equal chances of above and below normal temperatures in the lower basin. The precipitation outlook shows no strong indicators, meaning equal chances of dry, wet, or close to normal precipitation for most of the basin.

Missouri River Recovery Implementation Committee (MRRIC)

In Section 5018 of the 2007 Water Resources Development Act (WRDA) Congress authorized the Missouri River Recovery Implementation Committee (MRRIC). The Committee is to make recommendations and provide guidance on activities resulting from the Missouri River Recovery Program (MRRP). The Committee was established in 2008. MRRIC has nearly 70 members representing local, state, tribal, and federal interests throughout the Missouri River Basin.

During a meeting in Omaha, NE from November 4 to 6, MRRIC reached tentative consensus on a recommendation to the Corps to take action on Section 4013 of the Water Resources Reform Development Act (WRRDA) of 2014. Section 4013 provides that the MRRIC members may be reimbursed travel expenses. Limited resources have been a significant impediment to member participation and engagement on MRRIC, most notably of the tribal representatives appointed to the committee.

MRRIC received an update on the Missouri River Recovery Management Plan (MRRMP) and Environmental Impact Statement (EIS). The MRRMP and EIS is a three-year effort that will evaluate the effectiveness of actions taken by the Corps to recover the least tern, piping plover, and pallid sturgeon. The evaluation will determine modifications to current recovery efforts, if necessary, and will result in an adaptive management plan for Missouri River Recovery Management Plan actions. The MRRMP and EIS are scheduled to be complete in May 2016.

MRRIC had discussions with the U.S. Fish and Wildlife Service and the Independent Science Advisory Panel regarding population targets for the least tern, piping plover, and pallid sturgeon. These targets will be used in deciding upon management strategies to be implemented, and are

critical for measuring the overall success of the MRRMP. MRRIC also discussed using human considerations “proxy metrics” for the initial screening of alternatives. It is expected that the first round of alternatives will be provided to MRRIC in the spring.

Surplus Water/Reallocation

The Reallocation Study has been put on hold until the five remaining Surplus Water Reports are finalized and the associated Rulemaking has been released to the public. A timeline of these events has not been provided. We continue the effort to educate the Corps that storage contracts are inappropriate as the natural flow of the Missouri River provides for the water use in North Dakota and stored water is not necessary.

LCA/1392



North Dakota State Water Commission

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Missouri River AOP Meeting

**Todd Sando, Chief Engineer and Secretary
North Dakota State Water Commission**

**October 28, 2014, 11am
Bismarck Civic Center**

Welcome to North Dakota, my name is Todd Sando; I am the North Dakota State Engineer.

The common theme this year has been above normal. The mountain snowpack peaked in April at 132 and 140 percent of normal for the "Above Fort Peck" and "Fort Peck to Garrison" reaches, respectively. Summer and fall runoff this year has also been above normal. According to the Corps' September 4th, press release, the runoff in August was the third highest since 1898 at 241 percent of normal. The volume of runoff that occurred in August was not anticipated as the August 1st runoff forecast predicted it to be 121 percent of normal for that month. The runoff for the remainder of the year is predicted to be above normal and there is no reason to not anticipate even higher than expected runoff.

On September 11th and October 14th, I sent letters to the Corps urging them to increase releases from Garrison Dam now during open water conditions, instead of during the winter when river stages are affected by ice. I want to thank the Corps for responding to our concerns and increasing releases slightly by 2,000 cfs. Open water conditions allow for greater discharges at lower stages, and therefore, provide more flexibility in evacuating flood water. The reason for the recommendation to increase releases now is because of the above-normal runoff in the Missouri River Basin so far

JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
CHIEF ENGINEER AND SECRETARY

this year, the forecasted above-normal runoff for the remainder of the year, and the potential for higher than forecasted runoff.

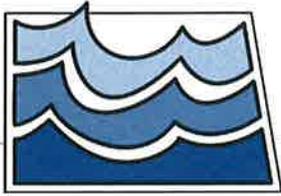
The forecasted winter releases of 24,000 cfs from Garrison Dam will most likely cause a stage of approximately nine to ten feet under ice-affected conditions. If winter releases are increased further, the higher river stages will exacerbate groundwater conditions and increase the chances of ice-induced flooding. I urge the Corps to further increase releases from Garrison Dam before freeze-in. If runoff continues to be higher than forecasted, even more water will need to be evacuated before next spring, resulting in increased winter releases. I also recommend continued communication with other federal, state, and local entities during periods of freeze-in and ice-out to ensure awareness of rapidly changing conditions.

Open water and ice jam induced flooding are concerns on the Missouri River in North Dakota. Although ice-induced flooding can occur anywhere along the Missouri River in North Dakota, there is heightened concern in the Bismarck-Mandan area. The AOP (page 14) states that winter releases will be increased to accommodate winter power loads and to draw down Lake Sakakawea to the base of the annual flood control pool. It also specifies that releases will be temporarily reduced, most likely in December, to prevent ice-induced flooding during freeze-in followed by a gradual increase as conditions permit. The flood stage at the Missouri River at Bismarck stream gage station is 14.5 feet. In both the AOP (page 14) and Master Manual (page VII-21), the Corps has indicated that they plan on preventing the exceedance of a stage of 13 feet. The Master Manual, however, states that the flood stage at the Bismarck gage is 16 feet (page VII-40). Because the flood stage has been lowered 1.5 feet since the

last update of the Master Manual, I suggest that the Corps plan on preventing the exceedence of a stage of 11.5 feet, rather than 13 feet.

While it is not really an AOP issue, I remind the Corps that the State of North Dakota is adamantly opposed to any effort by the Corps to charge our water users, or interfere with water use, for water that rightfully belongs to the people of our state. The basin states and tribes have a clear right to the use of the natural flow of the Missouri River without obligation to the federal government.

LCA:pdh/1392



North Dakota State Water Commission

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Agenda S

MEMORANDUM

TO: Governor Jack Dalrymple
Members of the State Water Commission
FROM: *TSD* Todd Sando, P.E., Chief Engineer – Secretary
SUBJECT: Devils Lake Hydrologic Update
Devils Lake Outlet Update
DATE: November 17, 2014

The current water surface elevation of Devils Lake and Stump Lake is 1451.6 ft-msl. This is approximately 0.7 feet below the water surface elevation from a year ago.

It has been a dry fall this year with precipitation values in the basin much lower than normal. The dry soils and lower wetlands should help capture spring runoff. The next forecast from the National Weather Service will be available in mid January 2015.

West and East Outlets: The outlets were shut down for the winter on November 9th. Following is a table with the monthly and total volumes pumped in 2014:

MONTH	West End Outlet	East End Outlet	Outlets Combined
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May	1,874	5,581	7,455
June	4,884	4,061	8,944
July	14,013	18,042	32,055
August	15,002	22,613	37,615
September	14,423	21,698	36,121
October	14,541	20,121	34,662
November	3,812	5,172	8,984
TOTAL	68,548	97,288	165,837

The total pumped Devils Lake water of nearly 166,000 acre-feet is a record for the outlets, the previous annual high was in 2012 when approximately 158,000 acre-feet were pumped. Using the area for lake elevation of 1452.0 ft-msl, the depth reduction in 2014 is about 11 inches.

TS:JK:EC:ph/416-10

JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
CHIEF ENGINEER AND SECRETARY