State Water Commission (SWC) Meeting
SWC Building (SWC staff only)
900 E. Boulevard Ave.
Bismarck, North Dakota
June 9, 2020 – 1:00 p.m. CT

Please join meeting via phone:
1-872-240-3311; Access Code 352-390-061
Please note: phone lines will remain muted during call.

AGENDA

A. Roll Call (no attachment)

B. Consideration of Agenda (no attachment)

C. Consideration of Draft Minutes of Following Meetings:
   1. **SWC Meeting of April 9, 2020** **
   2. **SWC Joint Subcommittee Meeting of May 14, 2020** **

D. SWC Financial Reports

E. International Souris River Study – Update on Hydromet Report

F. **USGS Cooperative Monitoring Agreement ($557,205)** **

G. SWPP Ownership Study Final Report

H. **Strategic Governance and Finance Study Recommendation (no attachment)** **

I. Southwest Pipeline Project
   1. **Contract 2019-1 Blowoff Upgrades Change Order** **
   2. **Reimbursement from Reserve Fund for Replacement and Extraordinary Maintenance** **
   3. Distribution Capacity Upgrades

J. **NAWS Advisory Committee – Commissioner Appointment** **

K. Policy and Applications
   1. Commissioner-Hosted Meetings
   2. **Economic Analysis Final Cost-Share Policy Language** **

L. **Four-Year Progress Reports** **

M. Cost-Share Requests

Water Supply
   1. Water Supply Funding Summary
   2. **Mandan: Raw Water Intake - $5,477,400** **
   3. **Grandin: Water Storage Improvements - $795,400** **
   4. **Killdeer: 2020 Watermain and Pump Station - $1,060,500** **
   5. **Larimore: 2020 Water System Replacement - $2,177,300** **
   6. **Bismarck: Lockport Pump Station - $675,000** **
   7. **WAWSA: Phase 6 Construction - $30,410,000** **

Rural Water

8. Rural Water Funding Summary
9. **East Central RWD: 2019 Expansion Phase 4 Construction - $3,711,000** **
10. **Walsh RWD: Drayton Water Supply - $4,713,600** **
11. **North Prairie RWD: Benedict Water Distribution System - $67,500** **
12. **North Prairie RWD: Minot to Velva Hwy 52 Improvement - $3,249,000** **

General Water

13. General Water Funding Summary
14. **Logan County WRD: McKenna Lake Hydrologic Study Phase 2 - $111,876** **
15. **Bottineau County WRD: Westhope Dam Rehabilitation - $23,764** **

Flood Control

16. Flood Control Funding Summary
17. **Devils Lake: Levee - $1.6M** **
18. **Lower Heart River WRD: Lower Heart River Flood Risk Reduction - $1,200,000** **
19. **Mercer County WRD: Knife River Bank Stabilization - $87,831** **
20. **Rush River WRD: Cass County Drain No. 2 - $4,500** **
21. Mouse River Enhanced Flood Protection Project – Acquisitions

N. **Devils Lake Outlet Mitigation Request** **

O. Project Updates (**Informational Only – no presentations**)

1. Devils Lake
2. Missouri River
3. Mouse River
4. NAWS
5. SWPP

P. Legal Updates (**Informational Only – no presentations**)

Q. Adjourn

**** BOLD ITEMS REQUIRE SWC ACTION**

To provide telephone accessibility to the State Water Commission meeting for those people who are deaf, hard of hearing, deaf and/or blind, and speech disabled, please contact Relay North Dakota, and reference ... TTY-Relay ND ... 1-800-366-6888, or 711.

MINUTES

North Dakota State Water Commission
Bismarck, North Dakota

June 9, 2020

The North Dakota State Water Commission (SWC or Commission) held a meeting via telephone conference on June 9, 2020. Lt. Governor Sanford called the meeting to order at 1:00 p.m. A quorum was present.

STATE WATER COMMISSION MEMBERS PRESENT:
Lt. Governor Sanford, Chairman
Doug Goehring, Commissioner, ND Department of Agriculture (left meeting at 3:00 p.m.)
Michael Anderson, Hillsboro
Katie Hemmer, Jamestown
Richard Johnson, Devils Lake
Mark Owan, Williston
Matthew Pedersen, Valley City
Jay Volk, Bismarck
Steven Schneider, Dickinson
Jason Zimmerman, Minot

OTHERS PRESENT:
John Paczkowski, Interim State Engineer, and Chief Engineer-Secretary
SWC Staff
Jennifer Verleger, General Counsel, Attorney General's Office
Reice Haase, Policy Advisor, Governor's Office
Approximately 80 people joined the call

CONSIDERATION OF AGENDA

The agenda for the June 9, 2020, SWC meeting was approved as presented.

CONSIDERATION OF DRAFT MEETING MINUTES FOR APRIL 9, 2020, AND MAY 14, 2020, MEETINGS

The draft minutes for the April 9 and May 14, 2020, meetings were reviewed. There were no modifications.

It was moved by Commissioner Johnson, seconded by Commissioner Hemmer, and unanimously carried, that the minutes for April 9 and May 14, 2020, be approved as presented.

STATE WATER COMMISSION FINANCIAL REPORTS

The allocated program expenditures for the period ending May 2020, were presented by Heide Delorme, Director of Administrative Services (**APPENDIX A.**)

The oil extraction tax deposits into the Resources Trust Fund (RTF) total $168.7M through May 2020 and are $7.9M or 4.47 percent below budgeted revenues. The original budgeted revenue for the biennium is $433 million.

May revenue projection was $18.3M, but the actual deposit was $7.9M, or $10.4M below projection. April revenue projection was $17.7M, and the actual June deposit amount pending approval is $2.9M, resulting in an overall amount of $22.7M under original projected revenue.

The most recent budget guidelines show a decrease in oil tax revenue between 35 to 59 percent which is a projected biennium revenue of $176M to $283M, or a decrease between $150M to $257M. The Water Topics Overview Committee (WTOC) meeting held on June 4, discussed $170M in decreased revenue which would provide approximately $260M in revenue for the current biennium. These numbers are projections, but a revised revenue forecast should be available in July or August from the Office of Management and Budget.

Heide discussed in detail the SWC approvals, intent, and expenses compared to the average new projection and our actual revenue through May, showing a projected potential deficit of $76M to $137M, if no additional expenses were incurred during the remainder of the biennium. Heide clarified that approved project grants exceed current revenues by $14M.

Commissioner Johnson stated the WTOC was adamant the SWC not deficient spend.

Commissioners discussed delaying additional expenditures until further revenue forecasts were received.

After discussion, the Commission made the following motion:

> **It was moved by Commissioner Johnson and seconded by Commissioner Goehring that the Commission 1) not approve the June 2020 cost-share requests with funds from the current biennium revenue; 2) the Commission closely monitor budget and revenue; and 3) reconvene in July to consider funding options after additional RTF revenue information becomes available.**
>
> **Commissioners Anderson, Hemmer, Johnson, Owan, Pedersen, Schneider, Volk, Zimmerman, Goehring, and Lt. Governor Sanford voted aye. There were no nay votes. Lt. Governor Sanford announced the motion carried.**

July 16 was proposed for the next Commission meeting. The Commission will consider funding requests and discuss revenue forecasts and actual deposits at that time.

INTERNATIONAL SOURIS RIVER STUDY BOARD – UPDATE ON HYDROMETEOROLOGICAL REPORT

Michael Bart, U.S. Co-Chair – IJC Souris River Plan of Study, Chief of Engineering and Construction Division, U.S. Army Corps of Engineers, provided an update on the proposed hydrometeorological data network improvements in the Mouse (Souris) River Basin. The presentation is attached as **APPENDIX B.**

The proposed hydrometeorological data network improvements are specific to additional precipitation and stream gages needed to collect data necessary for forecasting runoff precipitation in the Souris River Basin.

John Paczkowski, Interim State Engineer, asked Michael to provide a brief update on the dam safety issues related to the study. Michael reported that after the catastrophic 2011 flooding events, Saskatchewan commissioned a study to determine if its dams, Rafferty and Grant Devine, met current dam safety standards. The study is complete and Saskatchewan is now considering alternative operating plans. The proposed plans have brought forward discussions related to the original 1989 flood control storage agreement between the U.S. and Canada. The Department of State is the entity looking into the issue for the United States.

USGS COOPERATIVE MONITORING PROGRAM FY 2021

Jon Patch, Director of Appropriations Division, presented the funding request for the USGS Cooperative Monitoring Program.

The recommendation was to approve the FY 2020 (July 1, 2020-June 30, 2021) joint funding arrangement with the USGS.

> **It was moved by Commissioner Volk and seconded by Commissioner Pedersen the Commission approve the FY 2020 (July 1, 2020-June 30, 2021) joint funding arrangement with the USGS North Dakota Water Science Center not to exceed $557,205 from the funds appropriated to the Commission in the 2019-2021 biennium.**
>
> **Commissioners Anderson, Johnson, Pedersen, Volk, Zimmerman, Goehring, and Lt. Governor Sanford voted aye. Commissioners Hemmer, Owan, and Schneider voted nay. Lt. Governor Sanford announced the motion carried.**

SOUTHWEST PIPELINE PROJECT (SWPP) OWNERSHIP STUDY FINAL REPORT

Jon Kelsch, Director of Water Development Division, presented the final SWPP Ownership Study Final Report, **APPENDIX C**. The conclusion of the study did not change, and was updated to include comments, questions and responses during the comment period. The final cost for the study was $176,546.

STRATEGIC GOVERNANCE AND FINANCE STUDY RECOMMENDATION

Jon Kelsch provided an update on the Strategic Governance and Finance Study (Study). Proposals were received from HDR Engineering, AE2S Engineering, and Raftelis. Commissioners were sent proposals and scoring documents as requested at the May 14, 2020, subcommittee meeting. Two scorings were received. Jon asked Commission how to proceed based on two scorings and indicated $200,000 was the cost of the initial phase of this Study.

After discussion, the Commission tabled further discussion until the July meeting.

SOUTHWEST PIPELINE PROJECT (SWPP)

CONTRACT 2019-1 BLOWOFF UPGRADES CHANGE ORDER

Sindhuja S.Pillai-Grinolds, SWPP Project Manager, provided an update on Contract 2019-1 for blowoff upgrades. The authorization to award the contract was approved at the August 2019 Commission meeting. The recommendation was to authorize the Chief Engineer to sign change orders less than $75,000.

> **It was moved by Commissioner Schneider and seconded by Commissioner Pedersen the Commission authorize the Chief Engineer and Secretary to sign change orders on Contract 2019-1 up to the statutory authorization of $75,000.**
>
> **Commissioners Anderson, Hemmer, Johnson, Owan, Pedersen, Schneider, Volk, Zimmerman, Goehring, and Lt. Governor Sanford voted aye. There were no nay votes. Lt. Governor Sanford announced the motion carried.**

REIMBURSEMENT FROM RESERVE FUND FOR REPLACEMENT AND EXTRAORDINARY MAINTENANCE

Sindhuja S.Pillai-Grinolds presented Southwest Water Authority's (SWA) request for an additional $100,000 in reimbursement from the reserve fund for Replacement and Extraordinary Maintenance (REM). The fund is required by authorizing legislation, and expenditures from this fund are to be authorized by the Commission.

The additional funds will be used to replace five suction valves at the Richardton Pump Station, as a change order to Contract 4-1E/4-2B. The SWA Board approved the additional reimbursement at its May 4, 2020, board meeting.

Sindhuja also presented the repair and replacement of Contract 2-3E pipeline near Decker subdivision, and replacement on Contract 2-3A pipeline near Taylor as eligible REM projects. The estimated cost for Contract 2-3E replacement is $1M. Request and approval for actual disbursement of the REM funds for 2-3E pipeline repair will be presented to the Commission at a future meeting after the repair is complete. The recommendation was to approve additional $100,000 in reimbursement, and approve repair and replacement of the 2-3E pipeline near the Decker subdivision south of Dickinson, and the 2-3A pipeline near Taylor as eligible REM projects.

It was noted at the meeting that since the SWC memo was written, the SWA's REM request letter and the funding request letter for the 2019-2021 biennium included a request that construction funds be provided for replacement of metallic lines. This will be bought before the Commission at a later date for further discussion.

It was moved by Commissioner Hemmer and seconded by Commissioner Owan the Commission approve an additional $100,000 in reimbursement from the Reserve Fund for REM for the change order to Contract 4-1E/4-2B to replace the suction valves at the Richardton Pump Station; to approve repair and replacement of the 2-3E pipeline near Decker subdivision; and to approve repair and replacement of the 2-3A pipeline near Taylor as eligible REM projects.

Commissioners Anderson, Hemmer, Johnson, Owan, Pedersen, Schneider, Volk, Zimmerman, Goehring, and Lt. Governor Sanford voted aye. There were no nay votes. Lt. Governor Sanford announced the motion carried.

DISTRIBUTION CAPACITY UPGRADES

Sindhuja S.Pillai-Grinolds presented the plan forward for the SWPP and requested the Commission's support and acceptance of the concept of strategic improvement projects related to distribution capacity upgrades. The distribution upgrade projects for SWPP include three prongs: 1) increase improve transmission pipeline capacity from Ray Christenson Pump Station to the first reservoirs in the system; 2) implement hydraulic improvements at strategic locations to address waiting list users; and 3) canvas targeted service areas for users interested in signing up for rural water and design of a rural distribution system for that area. SWA's formal request is attached as **APPENDIX D.**

Commissioner Schneider stated that in order for potential users to sign up for the additional service area, prior support and backing is needed. Sindhuja clarified that the funding would be new money and not money already approved for SWPP projects. It was also noted that support and acceptance of the path forward for distribution upgrades is sought and the actual funding requests for the strategic improvement projects construction will be presented in six to eight months. The main transmission pipeline contracts from the Ray Christenson pump station is in the easement acquisition phase and will be ready for construction in a couple of months.

NORTHWEST AREA WATER SSUPPLY (NAWS) ADVISORY COMMITTEE

Tim Freije, NAWS Project Manager, stated an appointment is needed for the vacancy of Maurice Foley on the NAWS Advisory Committee. The appointment was discussed at the May 14 subcommittee meeting and Commissioner Zimmerman volunteered to sit on the committee.

It was moved by Commissioner Owan, seconded by Commissioner Hemmer, and unanimously carried, that Commissioner Zimmerman be appointed to the NAWS Advisory Committee.

COMMISSIONER-HOSTED MEETINGS

Pat Fridgen, Director of Planning and Education Division, provided the Commission with several meeting options for the Commissioner-Hosted meetings that will be held in July and August. Because of meeting restrictions due to Covid-19 guidelines and the need to start on the logistics, Pat asked Commissioners for input. Pat also recommended the draft project inventory be posted and sent to sponsors via electronic means for public comment this biennium.

If possible, the Commissioners preferred hosting the meetings in person and with a virtual component to accommodate the public. Commissioners wanted structured meetings and for meetings to function as in the past. Meetings would be held in each basin. Project sponsors would be given the opportunity to provide presentations with a time limit of five to 10 minutes.

ECONOMIC ANALYSIS (EA) FINAL COST-SHARE POLICY LANGUAGE

Pat Fridgen presented final draft language for the implementation of EA results, **APPENDIX E**. At the April 9 meeting, the Commission determined the benefit-to-cost ratio be used as a percentage of the maximum allowable cost-share percentage for those projects with a ratio of less than one (1) and projects with a BC ratio of one (1) or greater are eligible for maximum cost-share, per policy.

It was moved by Commissioner Owan and seconded by Commissioner Zimmerman that the SWC's Project Funding Policy, Procedure, and General Requirements be revised as written in APPENDIX E. The policy revision was effective April 9, 2020.

Commissioners Anderson, Johnson, Owan, Pedersen, Schneider, Volk, Zimmerman, Goehring, and Lt. Governor Sanford voted aye. Commissioner Hemmer voted nay. Lt. Governor Sanford announced the motion carried.

FOUR-YEAR PROGRESS REPORTS

Jeffrey Mattern, Engineer Manager, presented project sponsors' four-year progress reports. NDCC 61-02-14.3 requires project sponsors to provide a progress report to the Commission at least every four years if the term of the project exceeds four years.

A request for a progress report was sent to project sponsors identifying the following three options:

1. De-obligate the funds back to the SWC.
2. Submit final project expenses for reimbursement.
3. Appear before the Commission to provide a progress report.

A summary of the projects with a four-year progress report is attached as **APPENDIX F**. The summary lists projects requiring review by the Commission and lists completed

carryover projects with the de-obligated funding. A condition on carryover funds is that they may be used only for project carryover, based on Section 7 of Senate Bill 2020.

The following project sponsors presented their progress reports:

FUNDING EXTENSIONS

- Barnes County WRD: Ten Mile Lake Flood Risk Reduction Project
- Cass County Joint WRD: Rush River Watershed Detention Study
- Cass County Joint WRD: Upper Maple River Watershed Detention Study
- Maple River WRD: Lynchburg Channel Improvements
- Pembina County WRD: Tongue River NRCS Watershed Plan
- Sargent County WRD: Shortfoot Creek Watershed Planning Program
- State Water Commission: Missouri River Recovery Program
- Ward County WRD: Second Larson Coulee Detention Pond

DE-OBLIGATION OF FUNDS

- Griggs County WRD: Ueland Dam Rehabilitation Feasibility Study
- Hettinger County WRD: Karey Dam Rehabilitation Feasibility Study
- Logan County WRD: Beaver Lake Dam Rehabilitation Feasibility Study
- City of Pembina: Flood Protection System Certification
- Maple River WRD: Cass County Drain 15 Channel Improvements

After discussion, the following motion was made:

> **It was moved by Commissioner Johnson and seconded by Commissioner Schneider the Commission approve all requests, for funding extensions with the stipulation that funding be finalized by June 30, 2021.**
>
> **Commissioners Anderson, Hemmer, Johnson, Owan, Pedersen, Schneider, Volk, Zimmerman, and Lt. Governor Sanford voted aye. There were no nay votes. Commissioner Zimmerman abstained from voting on Ward County WRD project. Lt. Governor Sanford announced the motion carried.**

COST-SHARE REQUESTS

The following cost-share requests were tabled until the July meeting based on the previous motion not to approve the June 2020 cost-share requests with funds from the current biennium revenue:

WATER SUPPLY

- Mandan: Raw Water Intake - $5,477,400
- Grandin: Water Storage Improvements - $795,400
- Killdeer: 2020 Watermain and Pump Station - $1,060,500
- Larimore: 2020 Water System Replacement - $2,177,300

- Bismarck: Lockport Pump Station - $675,000
- WAWSA: Phase 6 Construction - $30,400,000

RURAL WATER

- East Central RWD: 2019 Expansion Phase 4 Construction - $3,711,000
- Walsh RWD: Drayton Water Supply - $4,713,600
- North Prairie RWD: Benedict Water Distribution System - $67,500
- North Prairie RWD: Minot to Velva Hwy 52 Improvement - $3,249,000

GENERAL WATER

- Logan County WRD: McKenna Lake Hydrologic Study Phase 2 - $111,876

FLOOD CONTROL

- Lower Heart River WRD: Lower Heart River Flood Risk Reduction - $1,200,000
- Mercer County WRD: Knife River Bank Stabilization - $87,831
- Rush River WRD: Cass County Drain No. 2 EA - $4,500

After discussion, Commissioners requested the following projects be brought forward for consideration: Devils Lake Levee, Mouse River Enhanced Flood Protection Project – Acquisitions, and Bottineau County WRD Westhope Dam Rehabilitation.

DEVILS LAKE: LEVEE
(SWC Project No. 0416-02)

In April 2019, Devils Lake received a reimbursement request from the U.S. Army Corps of Engineers (Corps) that totaled $13.2M with a local responsibility of $3.2M. The reimbursement request was for the federal Corps project related to the Devils Lake Flood Control Levee project, for which Devils Lake serves as the local sponsor. The SWC closed funding for the project in 2012.

At the February 2020 Commission meeting, Devils Lake requested additional cost-share for 100 percent of the local share, or $3.2M. The Commission requested SWC staff, Governor's office staff, Devils Lake representatives, and ND Congressional staff meet to clarify the additional request and possible forgiveness of the reimbursement request from the Corps. The meeting was held March 2, and it was determined that Devils Lake had since used various expenses incurred since 2012 as credits toward the local share, which were accepted by the Corps in fulfillment of their $3.2M request for reimbursement from Devils Lake.

Devils Lake provided an accounting of the levee-related costs incurred on the "new" project, dating back to 2009. Staff reviewed eligible and ineligible costs incurred, post 2012, which is when the last SWC agreement with Devils Lake ended. Those costs are summarized in the following table.

	Total $	Ineligible $	Eligible $
Project Administration	$210,099.73	$0.00	$210,099.73
Project Engineering	$371,551.02	$0.00	$371,551.02
Miscellaneous	$11,269.65	$11,269.65	$0.00
Land Acquisition	$2,845,134.09	$1,293.86	$2,843,840.23
Payments to Contractors	$1,135,034.64	$52.88	$1,134,981.76
Total	$4,573,089.13	$12,616.39	$4,560,472.74
BND Escrow Account			($1,550,015.76)
		Balance	**$3,010,456.98**

Approximately $1.55 million remains in a Devils Lake, Bank of North Dakota escrow account for levee related costs. The terms of the Water Commission's now expired agreement with the city were to, "Use state funds deposited in escrow account for the cash contribution required by the Corps. City may not access escrow account other than to view account status and electronically transfer funds to the Corps. No funds may be transferred or withdrawn from the Corps' escrow account to city administrative accounts. The escrow account is for the local costs of construction and engineering. City may not combine funds expended by the Corps and expended by the city. City must accurately account for all state, city, and Corps' costs and applicable sources of funding used."

This type of project would meet requirements of the SWC's cost-share policy for flood control projects with federal involvement, which is up to 50 percent. However, Devils Lake's expenses incurred post 2012 for which they are requesting reimbursement were incurred without prior Commission approval, and per policy, are considered ineligible. The recommendation was to release the 1,550,015.76 that remains in the Devils Lake, Bank of North Dakota escrow account to the city.

It was moved by Commissioner Johnson and seconded by Commissioner Schneider the Commission release the $1,550,015.76 remaining in the City of Devils Lake, Bank of North Dakota escrow account, and the funds be deposited in a City of Devils Lake administrative account of their choosing for reimbursement of expenses related to the Devils Lake Flood Risk Management Levee project.

Commissioners Anderson, Hemmer, Owan, Pedersen, Schneider, Volk, Zimmerman, and Lt. Governor Sanford voted aye. There were no nay votes. Commissioner Johnson abstained. Lt. Governor Sanford announced the motion carried.

MOUSE RIVER ENHANCED FLOOD PROTECTION PROJECT – ACQUISITIONS (SWC Project No. 1993-05)

Minot notified the SWC there are additional properties that need to be acquired for the Mouse River Enhanced Flood Protection Project (MREFPP). There is no additional cost-share being requested, but they are seeking approval from the Commission that the properties added to their inventory of acquisitions are acceptable.

At the May 2014 Commission meeting, a master Minot property acquisition roster and corresponding map indicating the location of the properties in relation to the MREFPP was presented and approved by the Commission. To provide a more timely and efficient process for property acquisitions, the Commission at that time also moved to grant the State Engineer the authority to approve future requests from Minot to acquire additional properties not previously approved by the Commission, as long as previously approved funding for Minot acquisitions is still available, and the acquisitions are necessary for the MREFPP. The State Engineer has made such approvals in the past.

Since the minutes from the May 2014 Commission meeting are somewhat vague, SWC staff brought the request from Minot to the Commission's attention.

After discussion, it was determined the Commission continue to have the State Engineer review these requests, and approve or deny them, and no further action is necessary.

BOTTINEAU COUNTY WATER RESOURCE DISTRICT: WESTHOPE DAM REHABILITATION (SWC Project No. 1267)

The Bottineau County Water Resource District (Bottineau) requested cost-share for the Westhope Dam rehabilitation project.

Westhope Dam is a low hazard dam built in 1989. The purpose of the dam is to provide irrigation water for the Westhope Golf Course. The District originally requested 75 percent cost-share as a dam safety project. On February 7, 2020, the project was approved by the State Engineer for a cost-share of 40 percent since there was no threat to public safety, and the dam's purpose is recreation-related.

During the April 9, 2020, Commission meeting, Commissioners approved modifications to the Project Funding Policy, which made dam projects eligible for up to 60 percent cost-share for dam deficiency, repair, breach, or removal projects. The Commission also approved an additional 20 percent cost-share for Silver Lake Dam and Odland Dam, which are comparable to Westhope Dam, and were previously approved for 40 percent cost-share as recreation projects in February.

The sponsor requested an additional 20 percent cost-share as a dam project. The total project cost is estimated at $118,822. An additional 20 percent cost-share is $23,764. Combined with the 40 percent already approved for the project, the total cost-share would be $71,293.

The project meets the requirements of the Commission's cost-share policy for dam repairs. The recommendation was to approve the additional cost-share request in the amount of $23,764.

It was moved by Commissioner Anderson and seconded by Commissioner Zimmerman the Commission approve the request from Bottineau County Water Resource District for an additional 20 percent cost-share of $23,764, resulting in a total cost-share participation of $71,293 for the Westhope Dam project at 60 percent of eligible costs. This approval is contingent on available funding.

Commissioners Anderson, Hemmer, Owan, Pedersen, Schneider, Zimmerman, and Lt. Governor Sanford voted aye. Commissioners Johnson and Volk voted nay. Lt. Governor Sanford announced the motion carried.

DEVILS LAKE OUTLET MITIGATION

A Devils Lake Outlet Mitigation Application was received from Dan Rorvig (Rorvig) on September 2, 2019. The application noted that his family home, located along the left overbank of the Sheyenne River in Nelson County, was being threatened by an eroding riverbank. A site inspection was conducted by SWC staff on September 10 and several alternatives of potential mitigation were discussed. During the visit, and in an October 14 follow up letter to Rorvig, it was noted that relocating the house would be the most effective long-term alternative.

Barr Engineering conducted an evaluation of alternatives and developed opinions of probable cost. Four alternatives for potential mitigation of the danger posed by the eroding streambank were received: two alternatives for bank stabilization, and two alternatives for relocation of the house without stabilizing the streambank. The table below indicates the estimated costs for all alternatives.

Alternative	Low Range Estimate (- 25%)	Mid-Range Estimate	High Range Estimate (+ 50%)
1 – Riprap Bank Stabilization	$370,000	$488,000	$730,000
2 – Bioengineered Bank Stabilization (without bank grading)	$460,000 ($370,000)	$619,000 ($469,000)	$930,000 ($740,000)
3- House relocation Site 1	$165,000	$220,000	$330,000
4- House relocation Site 2	$172,000	$230,000	$345,000

The final conclusion provided by Barr Engineering was to consider further evaluation of the alternatives to relocate the house. Mr. Rorvig requested the Commission consider the project based on the final conclusion.

The recommendation was to contribute to the mid-range cost of Barr Engineering's more expensive relocation estimate option of $115,000. This would provide flexibility for Mr. Rorvig to choose his desired relocation option.

It was moved by Commissioner Volk and seconded by Commissioner Pedersen the Commission approve the State Engineer to enter into an agreement for Rorvig mitigation at 50 percent cost-share in an amount not to exceed $115,000 from the Devils Lake Outlet Mitigation Program.

Commissioners Anderson, Hemmer, Johnson, Owan, Pedersen, Schneider, Volk, Zimmerman, and Lt. Governor Sanford voted aye. There were no nay votes. Lt. Governor Sanford announced the motion carried.

Lt. Governor Sanford indicated additional work was needed from SWC staff and Commissioners to determine potential de-obligation of funds from projects that are not going to be completed this year; to prioritize projects related to legislative intent and those projects in the current Water Development Plan; and to develop a forecast for the State Engineer's basic operations that needs to be figured into all future discussions.

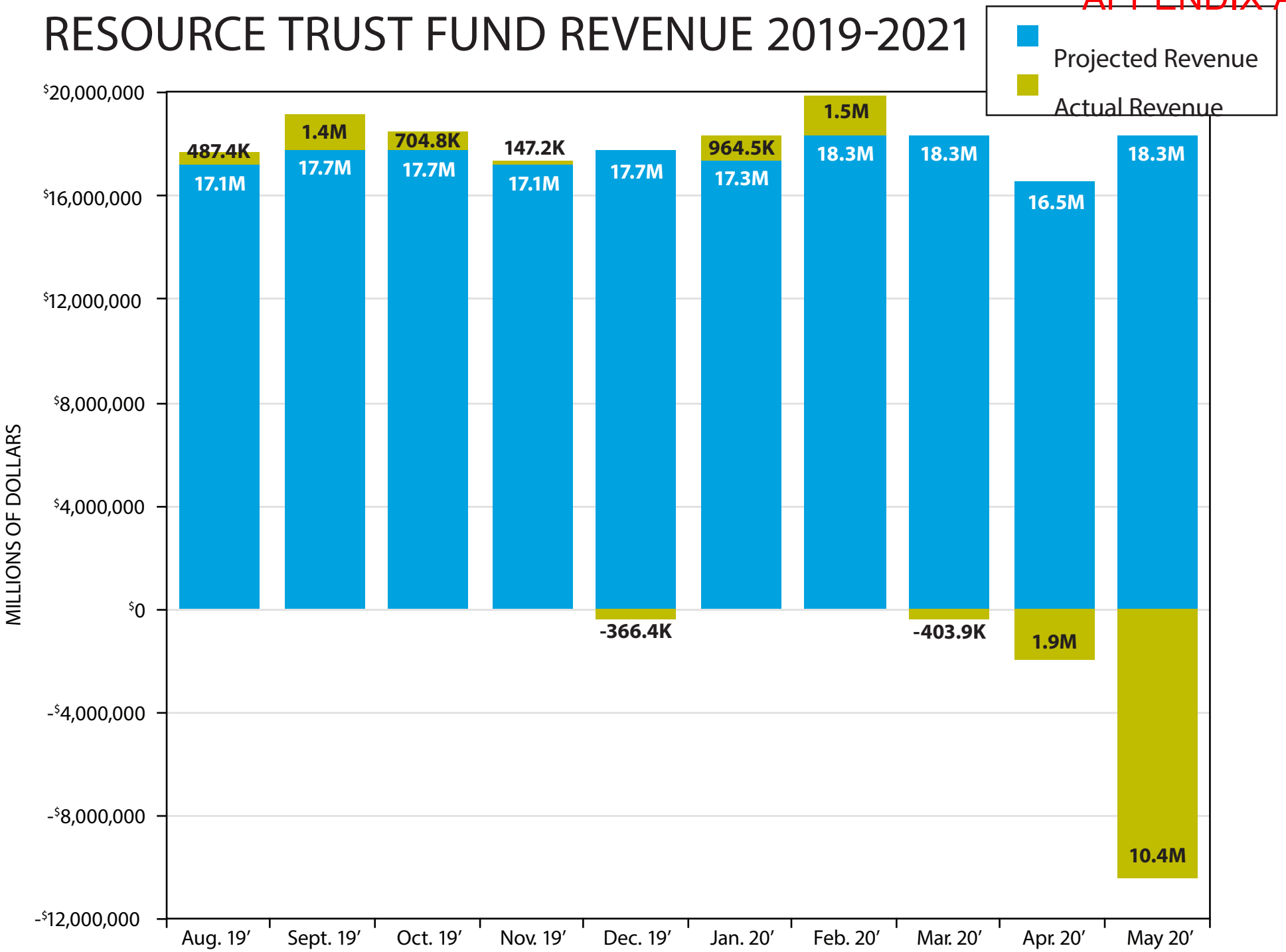
There being no further business to come before the Commission, Lt. Governor Sanford adjourned the June 9, 2020, meeting at 3:38 p.m.

Brent Sanford, Lt. Governor
Acting Chairman, State Water Commission

John Paczkowski, P.E.
Interim North Dakota State Engineer,
and Chief Engineer-Secretary
to the State Water Commission

APPENDIX A

RESOURCE TRUST FUND REVENUE 2019-2021



YTD Actual	$168,676,417	YTD Projection	$176,560,287	YTD Under Projection	$7,883,870[2]

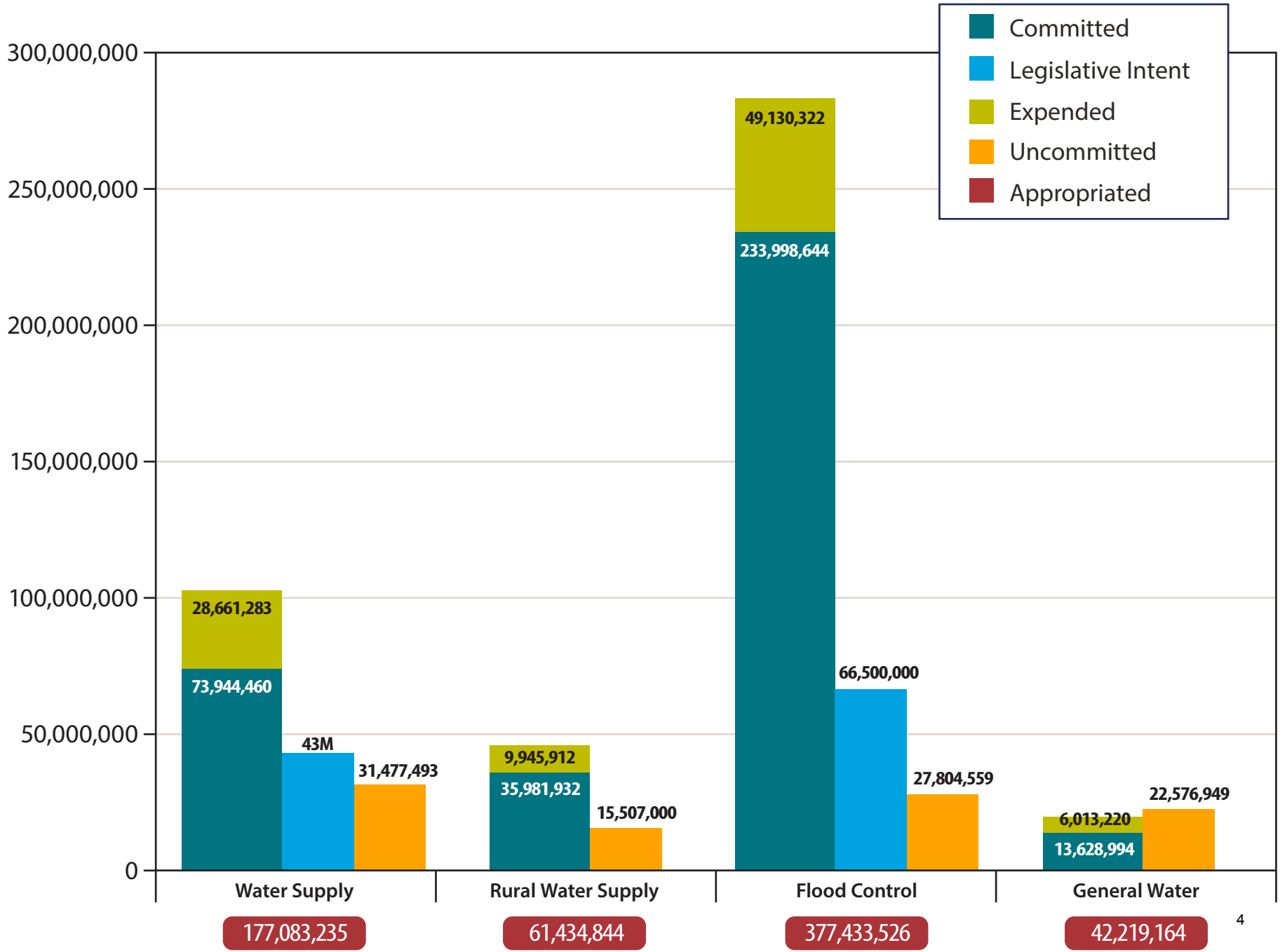
Resource Trust Fund Revenue Projection 2019-2021

NEW PROJECTION - $230,000,000		
Commitments Through April	Amount	Balance
Municipal/Regional Water Supply	$53,522,500	$176,477,500
Rural Water Supply	$21,693,000	$154,784,500
Flood Control	$102,753,770	$52,030,730
General Water	$4,573,820	$47,456,910
Fargo Flood Control	$66,500,000	($19,043,090)
Red River Valley Water Supply	$23,000,000	($42,043,090)
Operation	$18,500,000	($60,543,090)
Capital Improvements-NAWS/SWPP	$15,600,000	($76,143,090)

Resource Trust Fund Actual Revenue 2019-2021

ACTUAL REVENUE - $168,700,000		
Commitments Through April	Amount	Balance
Municipal/Regional Water Supply	$53,522,500	$115,177,500
Rural Water Supply	$21,693,000	$93,484,500
Flood Control	$102,753,770	($9,269,270)
General Water	$4,573,820	($13,843,090)
Fargo Flood Control	$66,500,000	($80,343,090)
Red River Valley Water Supply	$23,000,000	($103,343,090)
Operation	$18,500,000	($121,843,090)
Capital Improvements-NAWS/SWPP	$15,600,000	($137,443,090)

PROJECT FUNDS



STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 BIENNIUM

Apr-20

		2017-2019 CARRYOVER	2019-2021 FUNDING	2019-2021 BUDGET	SWC/SE APPROVED	REMAINING UNOBLIGATED
MUNICIPAL & REGIONAL WATER SUPPLY:						
MUNICIPAL WATER SUPPLY		35,854,628	48,046,507	83,901,135	83,901,135	(0)
RED RIVER VALLEY		4,000,000	43,000,000	47,000,000	4,000,000	43,000,000
OTHER REGIONAL WATER SUPPLY		9,228,607	5,476,000	14,704,607	14,704,607	(0)
UNOBLIGATED MUNICIPAL/REG WATER SUPPLY		69,746	31,407,747	31,477,493		31,477,493
	Total	49,083,236	128,000,000	177,083,235		74,477,492
% OBLIGATED			41.78%			
RURAL WATER SUPPLY:						
RURAL WATER SUPPLY		24,234,844	21,693,000	45,927,844	45,927,844	(0)
UNOBLIGATED RURAL WATER SUPPLY		0	15,507,000	15,507,000		15,507,000
	Total	24,234,844	37,200,000	61,434,844		15,507,000
% OBLIGATED			58.31%			
FLOOD CONTROL:						
FARGO		105,735,612	66,500,000	172,235,612	105,735,612	66,500,000
MOUSE RIVER		42,969,758	67,400,000	110,369,758	110,369,758	0
VALLEY CITY		4,858,687	11,610,554	16,469,241	16,469,241	0
LISBON		1,411,117	0	1,411,117	1,411,117	0
OTHER FLOOD CONTROL		15,379,498	3,039,800	18,419,298	18,419,298	0
PROPERTY ACQUISITIONS		820,117	15,175,000	15,995,117	15,995,117	(0)
WATER CONVEYANCE		9,200,408	5,528,416	14,728,824	14,728,824	0
UNOBLIGATED FLOOD CONTROL		58,330	27,746,229	27,804,559		27,804,560
	Total	180,433,527	197,000,000	377,433,526		94,304,560
% OBLIGATED			52.13%			
GENERAL WATER:						
GENERAL WATER		15,068,396	4,573,818	19,642,215	19,642,215	0
UNOBLIGATED GENERAL WATER		56,991	22,519,958	22,576,949		22,576,949
	Total	15,125,386.68	27,093,776	42,219,164		22,576,949
% OBLIGATED			16.67%			
CAPITAL ASSETS:						
SWPP CAPITAL ASSETS		15,792,359	2,320,000	18,112,359	18,112,359	(0)
NAWS CAPITAL ASSETS		22,248,857	0	22,248,857	22,248,857	0
UNOBLIGATED SWPP CAPITAL ASSETS		0	0	0		0
	Total	38,041,216	2,320,000	40,361,216		0
% OBLIGATED			100.00%			
REVOLVING LOAN FUND:						
GENERAL WATER PROJECTS		0	3,676,600	3,676,600	3,676,600	0
UNOBLIGATED REVOLVING LOAN FUND		0	706,563	706,563		706,563
	Total	0	4,383,163	4,383,163		706,563
% OBLIGATED			83.88%			
TOTALS		306,918,209	395,996,939	702,915,148	495,342,584	206,866,001

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 BIENNIUM

Apr-20

		SWC/SE APPROVED	EXPENDITURES	REMAINING UNPAID
MUNICIPAL & REGIONAL WATER SUPPLY:				
MUNICIPAL WATER SUPPLY		83,901,135	16,507,523	67,393,612
RED RIVER VALLEY		4,000,000	3,000,000	1,000,000
OTHER REGIONAL WATER SUPPLY		14,704,607	9,153,759	5,550,848
	TOTAL	102,605,743	28,661,283	73,944,460
RURAL WATER SUPPLY:				
RURAL WATER SUPPLY		45,927,844	9,945,912	35,981,932
FLOOD CONTROL:				
FARGO		105,735,612	13,678,816	92,056,796
MOUSE RIVER		110,369,758	20,792,860	89,576,898
VALLEY CITY		16,469,241	2,557,849	13,911,392
LISBON		1,411,117	847,724	563,392
OTHER FLOOD CONTROL		18,419,298	5,804,035	12,615,263
PROPERTY ACQUISITIONS		15,995,117	2,193,795	13,801,322
WATER CONVEYANCE		14,728,824	3,255,243	11,473,581
	TOTAL	283,128,966	49,130,322	233,998,644
GENERAL WATER:				
GENERAL WATER		19,642,215	6,013,220	13,628,994
CAPITAL ASSETS:				
SWPP CAPITAL ASSETS		18,112,359	3,712,995	14,399,364
NAWS CAPITAL ASSETS		22,248,857	1,462,355	20,786,501
	TOTAL	40,361,216	5,175,351	35,185,865
REVOLVING LOAN FUND:				
GENERAL WATER PROJECTS		3,676,600	0	3,676,600
WATER SUPPLY		0	0	0
TOTALS		495,342,584	98,926,087	396,416,496

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium

WATER SUPPLY

Approved By	SWC No	Dept	Sponsor	Project	Approved Date	Total Approved	Total Payments	Apr-20 Balance
			Municipal Water Supply:					
	2050-13	5000	Mandan	New Raw Water Intake	6/19/19	11,896,205	308,103	11,590,102
	2050-15	5000	Washburn	New Raw Water Intake	10/7/13	1,889,711	16,762	1,872,949
	2050-20	5000	Dickinson	Capital Infrastructure	10/6/15	1,926	0	0
	2050-26	5000	Fargo	Fargo Water System Regionalization Improvements	7/29/15	1,971,286	126,083	1,845,203
	2050-29	5000	Minot	Water Systems Improvement Project	10/6/15	599,301	307,977	291,324
	2050-30	5000	Watford City	Water Systems Improvement Project	10/6/15	2,400,000	1,510,256	889,744
	2050-32	5000	Williston	Water Systems Improvement Project	10/6/15	7,857,010	0	7,857,010
	2050-37	5000	Dickinson	Dickinson State Avenue South Water Main	12/11/15	983,920	0	983,920
	2050-49	5000	Grand Forks	Grand Forks Water Treatment Plant	8/23/17	7,089,371	7,089,371	0
	2050-52	5000	New Town	Water Transmission Storage	10/11/18	743,477	495,476	248,002
	2050-53	5000	West Fargo	Brooks Harbor Water Tower	8/23/17	797,335	0	797,335
	2050-54	5000	West Fargo	North Loop Connection	8/23/17	510,000	0	510,000
	2050-55	5000	West Fargo	West Loop Connection	8/23/17	1,110,000	0	1,110,000
	2050-66	5000	Lincoln	Lincoln Water System Improvement Project	2/8/18	1,415,788	1,017,437	398,351
	2050-67	5000	Williston	Williston Water System Improvements	2/8/18	2,336,000	1,268,889	1,067,111
	2050-68	5000	Valley City	Valley City Membrane Replacement Project	2/8/18	67,820	0	0
	2050-69	5000	Mandan	Sunset Reservoir Water Transmission Line	4/12/18	2,043,479	382,592	1,660,887
	2050-75-19	5000	Bismarck	Lockport Water Pump Station	6/19/19	2,280,000	0	2,280,000
	2050-76-19	5000	Mapleton	Water Storage Tank	6/19/19	840,000	17,109	822,891
	2050-84-19	5000	Cavalier	Water Tower Replacement	10/10/19	1,022,500	0	1,022,500
	2050-85-19	5000	Mapleton	300,000 Gallon Storage Tank	10/10/19	540,000	0	540,000
	2050-86-19	5000	Minot	SW Water Tower	10/10/19	2,855,000	0	2,855,000
	2050-87-19	5000	Streeter	Well Installation and Tower Rehabilitation	10/10/19	265,000	0	265,000
	2050-88-19	5000	Davenport	Water Improvement District No. 2019-1	10/10/19	466,000	0	466,000
	2050-89-19	5000	West Fargo	9th Street NW Water Main	10/10/19	594,000	0	594,000
	2050-90-19	5000	Grand Forks	Water Treatment Plant	10/10/19	9,875,000	3,967,471	5,907,529
	2050-94-19	5000	Watford City	Water Distribution 2019	12/6/19	1,580,000	0	1,580,000
	2050-95-19	5000	Garrison	Water Supply Treatment and Transmission Line	2/13/20	3,396,000	0	3,396,000
	2050-96-19	5000	Larimore	2020 Water System Replacement	2/13/20	2,617,000	0	2,617,000
	2050-97-19	5000	Park River	2020 Water Main Improvement	2/13/20	970,000	0	970,000
	2050-98-19	5000	Sykeston	Water Tower Replacement	2/13/20	587,000	0	587,000
	2050-99-19	5000	Valley City	Water Main Improvement 100/101	2/13/20	700,000	0	700,000
	2050-100-19	5000	Wyndmere	2020 Water Main Improvements	2/13/20	1,730,000	0	1,730,000
	2050-101-19	5000	Fargo	Downtown Water Tower	2/13/20	2,814,000	0	2,814,000
	2050-102-19	5000	Lincoln	Water Tank Replacement	2/13/20	1,268,000	0	1,268,000
	2050-103-19	5000	Kindred	Water Main Looping 2020	2/13/20	134,000	0	134,000
	2050-104-19	5000	Hazen	Water Storage Improvements	2/13/20	1,430,000	0	1,430,000
	2050-105-19	5000	Williston	42nd Street and 16th Avenue Water Main	2/13/20	1,196,000	0	1,196,000
	2050-106-19	5000	Parshall	Water Tower Storage	4/9/20	1,323,000	0	1,323,000
	2050-107-19	5000	Dickinson	North Annexation Water Supply	4/9/20	856,400	0	856,400
	2050-108-19	5000	Valley City	Water Treatment Plant Membrane Replacement	4/9/20	867,607	0	867,607
				TOTAL MUNICIPAL WATER SUPPLY		***83,901,135***	***16,507,523***	***67,323,866***
			Regional Water Supply:					
	1973-05	5000	WAWSA	WAWSA Phase IV (moved to Phase V)	10/6/15	3,001,967	1,362,195	1,639,773
	1973-06	5000	WAWSA	WAWSA Phase V	12/8/17	8,226,640	8,226,640	0
	1973-07	5000	WAWSA	WAWSA Phase VI	6/19/19	5,476,000	1,564,925	3,911,075
	325-105	5000	RRVWSP	RRVWSP Garrison Diversion	8/23/17	4,000,000	3,000,000	1,000,000
				TOTAL REGIONAL WATER SUPPLY		***18,704,607***	***12,153,759***	***6,550,848***
			Rural Water Supply:					
	2050-34	5000	North Prairie RWD	Storage and Water Main	10/6/15	1,012,854	553,472	459,382
	2050-35	5000	Southeast Water Users Dist.	System Wide Expansion	2/13/20	3,473,377	2,066,335	1,407,041
	2050-43	5000	All Seasons Water District	System 4 Connection to System 1	12/11/15	4,900,000	0	4,900,000
	2373-39	5000	North Central Rural Water Consortium	Carpio Berthold Phase 2	4/1/15	926,882	288,686	638,196
	2373-41	5000	North Central Rural Water Consortium	Granville-Deering Area	10/24/16	459,137	127,068	332,068
	2050-57	5000	North Central Regional Water District	Mountrail Expansion Phase II	8/23/17	3,034,288	0	3,034,288
	2050-58	5000	North Central Regional Water District	Mountrail Co. Watery Phase III	8/23/17	3,430,000	0	3,430,000
	2050-59	5000	Cass Rural Water District	Horace Storage Tank	10/11/18	1,336,637	1,026,049	310,588
	2050-60	5000	North Prairie Rural District	Reservoir 9 Water Supply	6/12/18	398,997	23,475	375,521
	2050-61	5000	North Prairie Rural District	Surrey/Silver Spring	6/12/18	38,289	2,610	35,678
	2050-63	5000	Walsh RWD	System Expansion Project	4/12/18	667,629	269,743	397,886
	2050-64	5000	McLean-Sheridan Water District	Turtle Lake Water Tower	8/9/18	846,065	263,845	582,220
	2050-65	5000	Tri-County Rural Water District	System Expansion Project	8/9/18	1,316,004	1,227,775	88,228
	2050-71	5000	East Central RWD	Grand Forks/Traill Project	12/7/18	2,004,028	987,455	1,016,574
	2050-72	5000	Stutsman RWD	Phase 6 Pettibone Project	4/12/18	522,236	371,087	151,149
	2050-73	5000	Northeast Regional WD	Master Plan	10/11/18	55,922	55,922	0
	2050-74	5000	Walsh RWD	Drayton Long-Term Water Supply Feasibility Study	5/8/19	37,500	37,500	0
	2050-77-19	5000	Dakota Rural Water District	2019 Expansion	4/9/20	4,650,000	325,455	4,324,545
	2050-78-19	5000	McLean-Sheridan Rural Water District	2019 Expansion	4/9/20	4,980,000	326,925	4,653,075
	2050-79-19	5000	Northeast Regional WD	Devils Lake Water Supply Phase II	6/19/19	1,328,000	968,233	359,767
	2050-80-19	5000	Stutsman RWD	Phase 7, Including Reule Lake	6/19/19	1,812,000	445,517	1,366,483
	2050-81-19	5000	South Central RWD	North Burleigh Water Treatment Plant	6/19/19	920,000	151,848	768,152
	2050-82-19	5000	Missouri West Water System	North Mandan/Highway 25 and Harmon Lake Area	8/8/19	1,095,000	76,547	1,018,453
	2050-83-19	5000	Tri-County Rural Water District	Phase 5	8/8/19	1,990,000	0	1,990,000
	2050-91-19	5000	Agassiz Water Users District	2019 Expansion	4/9/20	2,990,000	113,028	2,876,972
	2050-92-19	5000	East Central RWD	2019 Expansion Phase IV	10/10/19	375,000	201,261	173,739
	2050-93-19	5000	Greater Ramsey Water District	2019 Expansion	10/10/19	1,328,000	36,076	1,291,924
				TOTAL RURAL WATER SUPPLY		***45,927,844***	***9,945,912***	***35,981,932***
				TOTAL		***148,533,587***	***38,607,194***	***109,856,646***
			Capital Assets:					
	1736-05	8000	SWPP	Southwest Pipeline Project	7/1/17	18,112,359	3,712,995	14,399,364
	2374	9000	NAWS	Northwest Area Water Supply	2/8/18	22,248,857	1,462,355	20,786,501
				TOTAL CAPITAL ASSETS		***40,361,216***	***5,175,351***	***35,185,865***

SWC Board Approved to Continue

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium

FLOOD CONTROL

Approved By	SWC No	Dept	Sponsor	Project	Approved Date	Total Approved	Total Payments	Balance (Apr-20)
			Flood Control:					
SE	274	5000	City of Neche	Neche Levee Certification Project	9/16/19	36,600	0	36,600
SB 2020	1928-05	5000	Fargo Metro Flood Diversion	Fargo Metro Flood Diversion Authority 2015-2017	2/14/19	105,735,812	13,678,816	92,056,796
	1771-01	5000	Grafton	Grafton Flood Control Project	10/12/16	12,284,127	5,784,634	6,499,493
	1974	Rural	Souris River Joint WRD	Mouse River Rural Projects	6/19/19	40,351,930	4,224,822	36,127,107
	1974	M-15	Souris River Joint WRD	Mouse River Municipal Projects carryover 2015-17	various	4,928,633	4,033,885	894,748
	1974	M-17	Souris River Joint WRD	Mouse River Municipal Projects carryover 2017-19	various	29,402,346	11,502,068	17,900,278
	1974	M-19	Souris River Joint WRD	Mouse River Municipal New Projects	6/19/19	34,650,000	630,361	34,019,639
SWC	2107-02	5000	City of Minot	SWIF 2018 Outfall Pipe Project	10/11/18	880,421	322,437	557,984
SE	2122	5000		Development of Comprehensive Plan for Souris Basin	9/5/17	156,428	79,286	77,142
	1344-04	5000	Valley City	Sheyenne River Valley Flood Control Project PHII	8/29/16	4,531	92	4,440
	1504-01	5000	Valley City	Permanent Flood Protection Project Phase I	5/1/15	49,556	7,415	42,141
	1504-03	5000	Valley City	Permanent Flood Protection PH II	12/9/16	2,384,405	1,942,136	442,269
	1504-06	5000	Valley City	Permanent Flood Protection PH III & PH IV	12/8/17	153,732	135,484	18,248
	1504-07	5000	Valley City	Permanent Flood Protection PH III Construction	10/11/18	1,786,179	472,723	1,313,456
	1504-08	5000	Valley City	Permanent Flood Protection Erosion Sites	4/9/19	480,263	0	480,263
	1504-09	5000	Valley City	Permanent Flood Protection PH IV and V	4/9/20	11,610,554	0	11,610,554
SB 2371	1344-02	5000	Lisbon	Sheyenne River Valley Flood Control Project	8/8/18	103,971	0	103,971
	1991-10	5000	Lisbon	Permanent Flood Protection - Levee F Project	4/12/18	457,173	1,294	455,880
	1991-13	5000	Lisbon	Permanent Flood Protection - Levee C & E Extension	2/14/19	849,972	846,431	3,541
	2079-01	5000	Williston	West Williston Flood Control	12/9/16	2,472,255	0	2,472,255
SWC	2111	5000	Maple River WRD	Davenport Flood Risk Reduction	4/9/20	2,083,600	0	2,083,600
SWC	2118	5000	Cass County Joint WRD	Sheldon Subdivision Levee	10/11/18	370,200	0	370,200
SE	2124	5000	City of Belfield	Heart River & Tributaries Flood Control Study	11/8/18	27,000	0	27,000
SWC	2128	5000	City of Minot	Minot 2019 Bank Stabilization SWIF Action E	8/8/19	823,180	0	823,180
SWC	2140	5000	Grand Forks-Traill County Joint WRD	Thompson Drainage	4/9/20	688,107	0	0
				Subtotal Flood Control		***252,405,025***	***43,681,284***	***208,723,741***
			Floodway Property Acquisitions:					
0	1993-05	5000	Minot	Minot Phase - Floodway Acquisitions	4/12/18	123,277	123,276	0
0	1974-MA19	5000	Minot Acquisitions	Minot Phase - Floodway Acquisitions	6/19/19	11,950,000	975,943	10,974,057
0	1974-RA19	5000	Rural Floodway Acquisitions	Minot Rural - Floodway Acquisitions	6/19/19	3,225,000	819,349	2,405,651
SB 2371	1504-05	5000	Valley City	Valley City - Floodway Acquisitions	12/8/17	675,173	275,226	399,947
0	1991-05	5000	Lisbon	Lisbon - Floodway Acquisition	5/8/19	21,668	0	21,668
				Subtotal Floodway Property Acquisitions		***15,995,117***	***2,193,795***	***13,801,322***
				TOTAL FLOOD CONTROL		***268,400,143***	***45,875,079***	***222,525,063***
			Revolving Loan Fund: (General Water)					
SWC	1504	1050	Valley City	Valley City - Permanent Flood Protection Loan	12/6/19	3,676,600	0	3,676,600
			(Water Supply)					
				REVOLVING LOAN TOTAL		***3,676,600***	***0***	***3,676,600***
				TOTAL		***272,076,743***	***45,875,079***	***226,201,663***

SWC Board Approved to Continue

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium
Resources Trust Fund

WATER CONVEYANCE

Apr-20

Approved By	SWC No	Dept	Approved Biennium	Sponsor	Project	Approved Date	Total Approved	Total Payments	Balance
				Drain & Channel Improvement Projects:					
SE	1056	5000	2015-17	Bottineau Co. WRD	Stead Legal Drain	2/16/17	3,068	0	3,068
SE	1059	5000	2017-19	Bottineau Co WRD	Baumann Legal Drain	3/7/18	41,427	0	41,427
SWC	1059	5000	2017-19	Bottineau Co WRD	Baumann Legal Drain	12/7/18	378,976	28,275	350,701
SWC	1070	5000	2015-17	Maple River WRD	Drain #14 Channel Improvements	3/29/17	327,990	151,418	176,571
SWC	1071	5000	2015-17	Maple River WRD	Cass County Drain #15 Channel Improvements	3/9/16	89,533	0	89,533
SWC	1090	5000	2019-21	Southeast Cass WRD	Cass County Drain No. 40 Improvement Project	6/19/19	192,600	0	192,600
SWC	1217	5000	2019-21	Tri-County WRD	Drain No 6	10/10/19	738,900	0	738,900
SWC	1222	5000	2015-17	Sargent Co WRD	Drain No 11 Channel Improvements	10/12/16	1,374,596	0	1,374,596
SWC	1314	5000	2015-17	Wells Co. WRD	Hurdsfield Legal Drain	3/29/17	644,292	412,908	231,384
SWC	1331	5000	2015-17	Richland Co WRD	Drain #14 Reconstruction	12/9/16	72,886	0	72,886
SWC	1486	5000	2015-17	Griggs Co. WRD	Thompson Bridge Outlet No. 4 Project	10/6/15	590,146	0	590,146
SWC	1520	5000	2015-17	Walsh Co. WRD	Walsh County Drain 30-1	3/29/17	92,198	0	92,198
SWC	1520	5000	2017-19	Walsh Co. WRD	Walsh County Drain 30-2	10/11/18	301,501	205,483	96,018
SE	1638	5000	2019-21	Rush River WRD	Auka Ring Dike	10/30/19	24,374	0	24,374
SWC	1951	5000	2015-17	Maple River WRD	Lynchburg Channel Improvements	7/6/16	1,115,337	297,886	817,451
SWC	1978	5000	2015-17	Richland-Sargent Joint WRD	RS Legal Drain #1 Extension & Channel Improvemen	3/29/17	70,422	20,704	49,718
SWC	1990	5000	2011-13	Mercer Co. WRD	Lake Shore Estates High Flow Diversion Project	3/7/12	43,821	0	43,821
SWC	1999	5000	2019-21	Pembina Co. WRD	Tongue River Cutoff Channel Improvements	2/13/20	85,329	0	85,329
SE	2016	5000	2015-17	Pembina Co. WRD	Establishment of Pembina County Drain No. 80	4/10/17	24,609	0	24,609
SWC	2049	5000	2015-17	Grand Forks Co. WRD	Grand Forks Legal Drain No. 58	3/29/17	774,986	361,119	413,867
SWC	2068	5000	2015-17	Traill Co. WRD	Stavanger-Belmont Drain No. 52 Channel Impr	10/12/16	120,139	34,104	86,035
SWC	2087	5000	2015-17	Walsh Co. WRD	Drain #87/McLeod Drain	3/29/17	2,419,961	1,330,314	1,089,647
SWC	2088	5000	2015-17	Pembina Co. WRD	Drain No. 79	12/9/16	84,402	52,764	31,638
SWC	2094	5000	2019-21	McLean County WRD	Fort Mandan/4H Camp Access Road	4/9/20	67,996	0	67,996
SE	2101	5000	2017-19	Walsh Co. WRD	Walsh Co Drain #90	4/11/19	70,603	0	70,603
SWC	2104	5000	2019-21	Bottineau Co. WRD	Overgaard Extension	2/13/20	215,969	0	215,969
SWC	2108	5000	2015-17	Walsh Co. WRD	Walsh Co Drain #22	6/22/17	81,176	0	81,176
SE	2112	5000	2017-19	Pembina Co. WRD	Pembina Co Drain #81	7/30/17	340,982	0	340,982
SWC	2127	5000	2019-21	Sargent Co WRD	Sargent County Drain 12 Improvement	2/13/20	267,512	0	267,512
SE	2133	5000	2017-19	Burleigh Co. WRD	Missouri River Section 32 Bank Stabilization Projects	4/11/19	22,500	0	22,500
SWC	2136	5000	2019-21	Pembina County WRD	Drain No. 39	4/9/20	210,928	0	210,928
SWC	2138	5000	2019-21	Pembina County WRD	Drain No. 82	12/6/19	1,011,666	0	1,011,666
SWC	2140	5000	2019-21	Grand Forks-Traill County Joint \	Thompson Drainage	4/9/20	688,107	0	688,107
SE	2143	5000	2019-21	Traill Co. WRD	Hillsboro Drain No. 26 Channel Improvements	3/27/20	72,041	0	72,041
SWC/SE	1413-01	5000	2019-21	Traill Co. WRD	Camrud Drainage Improvement District No. 79	4/9/20	827,482	12,097	815,384
SE	2093/1427	5000	2015-17	Bottineau Co. WRD	Moen Legal Drain	9/6/16	17,412	0	17,412
				Snagging & Clearing Projects:					
SWC	568	5000	2019-21	Southeast Cass WRD	Sheyenne River Snag & Clear	8/8/19	294,000	0	294,000
SE	662	5000	2019-21	Walsh County WRD	Park River Snag and Clear	1/28/20	50,500	0	50,500
SE	1277	5000	2019-21	Emmons County WRD	Beaver Creek Snag and Clear	1/16/20	74,000	0	74,000
SWC/SE	1694	5000	2019-21	Pembina County WRD	Tongue River Snag and Clear	4/2/20	116,837	0	116,837
SE	1842	5000	2019-21	Richland County WRD	2019 Wild Rice River Snag and Clear	1/15/20	150,000	0	150,000
SWC	1868	5000	2019-21	Southeast Cass WRD	Wild Rice River Snag and Clear	8/8/19	120,000	0	120,000
SE	2095	5000	2015-17	Nelson Co WRD	Sheyenne River Snagging & Clearing	4/10/17	19,700	0	19,700
SE	2095	5000	2019-21	Barnes Co WRD	2019 Sheyenne River Snag & Clear Reach 1 - Projec	9/16/19	49,750	0	49,750
					TOTAL		14,380,654	2,907,073	11,473,581
					SWC Board Approved to Continue				

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium
Resources Trust Fund

COMPLETED WATER CONVEYANCE

Approved By	SWC No	Dept	Approved Biennium	Sponsor	Project	Approved Date	Total Approved	Total Payments	Apr-20 Balance
SE	2069	5000	2017-19	Center Township	Center Township Bank Stabilization	B. Nangare	3,720	3,720	0
SWC	1650	5000	2017-19	Sargent Co WRD	Sargent County Drain No. 7 Cost Overrun	B. Nangare	114,227	110,638	3,589
SWC	1311	5000	2015-17	Traill Co. WRD	Buxton Township Improvement District No. 68	B. Nangare	29,133	0	29,133
SWC	1180	5000	2017-19	Richland Co WRD	Legal Drain #7 Channel Improvements	B. Nangare	200,812	200,812	0
SE	662	5000	2015-17	Walsh Co. WRD	Park River Snagging & Clearing	B. Nangare	25,608	0	25,608
SE	2110	5000	2015-17	Ward Co. WRD	Meadowbrook Snagging & Clearing	B. Nangare	33,000	33,000	0
					SNAGGING & CLEARING PROJECTS				
					TOTAL		406,500	348,170	58,330

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium
Resources Trust Fund

GENERAL PROJECTS

Approved By	SWC No	Dept	Approved Biennium	Sponsor	Project	Approved Date	Total Approved	Total Payments	Apr-20 Balance
				Hydrologic Investigations:					
SWC	2041	3000	2017-19	USGS	Stream Gage Joint Funding Agreement	12/7/18	694,531	559,363	135,168
SE	989	3000	2019-21	ND Dept of Environmental Quality	Water Sampling Testing	8/13/19	110,000	55,000	55,000
					Subtotal Hydrologic Investigations		***804,531***	***614,363***	***190,168***
				Devils Lake Basin Development:					
SWC	416-10	4700		Operations	Devils Lake Outlet Operations	4/9/19	3,760,132	1,856,751	1,903,381
					Subtotal Devils Lake Basin Development		***3,760,132***	***1,856,751***	***1,903,381***
				General Water Management:					
SWC	160	5000	2017-19	McLean Co WRD	Painted Woods Lake Flood Damage Reduction & Habita	8/9/18	284,768	0	284,768
SWC	269	5000	2017-19	Walsh Co. WRD	Fordville Dam Rehabilitation	6/19/19	122,595	11,076	111,519
SE	390	5000	2015-17	Logan County WRD	Beaver Lake Dam Rehabilitation Feasibility Study	6/8/16	2,140	0	2,140
SWC	391	5000	2019-21	Sargent Co WRD	Silver Lake Dam Improvements	4/9/20	190,524	3,142	187,383
SWC	394	5000	2019-21	Golden Valley Co WRD	Odland Dam Rehabilitation Project	4/9/20	705,855	110,055	595,800
SWC	399	5000	2017-19	Barnes Co WRD	Kathryn Dam Project	8/9/18	754,875	0	754,875
SE	420	5000	2015-17	Hettinger Park Board	Mirror Lake Dam Emergency Action Plan	12/2/16	11,573	0	11,573
SE	460	5000	2015-17	Griggs Co. WRD	Ueland Dam Rehabilitation Feasibility Study	5/20/16	17,500	0	17,500
SE	512	5000	2015-17	Emmons County WRD	Nieuwsma Dam Emergency Action Plan	11/28/16	6,720	812	5,908
SE	531	5000	2017-19	Benson Co WRD	Bouret Dam Rehabilitation	12/20/18	31,843	0	31,843
SWC	531	5000	2017-19	Benson Co WRD	Bouret Dam Rehabilitation	4/9/19	591,750	5,034	586,716
SWC	551	5000	2015-17	McHenry Co. WRD	Buffalo Lodge Lake Outlet	6/22/17	61,540	0	61,540
SE	632	5000	2019-21	Bottineau County Highway Dept	Antler Dam Repair	1/16/20	34,800	0	34,800
SWC	688	5000	2017-19	Grand Forks Co WRD	Larimore Dam Rehabilitation	6/19/19	91,800	1,937	89,863
SWC	848	5000	2017-19	Sargent Co WRD	Brummond/Lubke Dam	10/11/18	280,043	192,439	87,604
SWC	980	5000	2015-17	Cass Co. Joint WRD	Rush River Watershed Detention Study	1/7/16	99,257	0	99,257
SWC	980	5000	2015-17	Cass Co. Joint WRD	Upper Maple River Watershed Detention Study	1/11/16	70,699	23,643	47,056
SE	1264	5000	2013-15	Barnes Co WRD	Little Dam Repurposing Feasibility Study	6/17/15	12,385	6,588	5,797
SE	1267	5000	2019-21	Bottineau County WRD	Westhope Dam Rehabilitation	2/7/20	47,529	0	47,529
SE	1289	5000	2015-17	McKenzie Co. Weed Board	Control of Noxious Weeds on Sovereign Land	4/10/17	27,549	0	27,549
SWC	1296	5000	2015-17	Pembina Co. WRD	Tongue River NRCS Watershed Plan	3/9/16	64,334	7,196	57,138
SWC/SE	1301	5000	2015-17	Richland Co. WRD	North Branch Antelope Creek NRCS Small Watershed	3/9/16	71,439	53,939	17,500
SWC	1303	5000	2015-17	Sargent Co WRD	Shortfoot Creek Watershed Planning Program	3/9/16	84,475	2,736	81,740
SE	1378	5000	2019-21	Barnes Co WRD	Clausen Springs Dam EAP	8/8/19	72,052	0	72,052
SWC	1389	5000	2013-15	Bank of ND	BND AgPace Program	8/8/19	180,365	80,000	100,365
SE	1431	5000	2019-21	USGS/LaMoure County	Rapid Deployment Gages under FEMA Hazard Mit	10/17/19	500	0	500
SE	1444	5000	2015-17	City of Pembina	Flood Protection System Certification	4/19/16	1,657	0	1,657
SE	1453	5000	2015-17	Hettinger County WRD	Karey Dam Rehabilitation Feasibility Study	5/23/16	6,853	0	6,853
SE	1453	5000	2017-19	Hettinger County WRD	Karey Dam Rehabilitation Design & Planning	12/14/18	48,284	0	48,284
SE	1453	5000	2017-19	Hettinger County WRD	Karey Dam Rehabilitation Project	4/9/19	971,325	0	971,325
HB1202	1625	5000	2019-21	Various Consulting Firms	Sovereign Land Navigability Determination	8/8/19	400,000	0	400,000
SWC	1785	5000	2019-21	Maple River WRD	Maple River Dam Site T-180 Improvements	2/13/20	212,216	0	212,216
SWC	1851-01	5000	2015-17	ND State Water Commission	Drought Disaster Livestock Water Supply Assistance	2/8/18	656,983	60,617	596,365
SWC	1878-02	5000	2017-19	Maple-Steele Joint WRD	Upper Maple River Dam Outlet Channel Improvements	4/9/19	82,320	0	82,320
SWC	1968	5000	2015-17	Garrison Diversion	MM 15 Irrigation Project	3/29/17	93,615	0	93,615
SWC	1968	5000	2015-17	Garrison Diversion	MM 42L Irrigation Project	8/23/17	77,958	0	77,958
SWC	1968	5000	2017-19	Garrison Diversion	MM 0 and MM 0.4 Irrigation Project	12/7/18	1,673,793	29,089	1,644,704
SE	2055	5000	2015-17	Red River Joint Water Resource District	Lower Red Basin Regional Detention Study	7/17/15	45,000	0	45,000
SWC	2059	5000	2015-17	Park River Joint WRD	North Branch Park River NRCS Watershed Study	10/6/15	81,200	0	81,200
SWC	2060	5000	2015-17	Walsh Co. WRD	Forest River Watershed Study	4/10/17	154,012	19,412	134,600
SWC	2060	5000	2017-19	Walsh Co. WRD	Matejcek Dam Rehabilitation	10/11/18	194,345	44,493	149,852
SE	2071	5000	2015-17	Foster County WRD	Alkali Lake High Water Feasibility Study	4/19/16	4,830	0	4,830
SE	2072	5000	2015-17	Barnes Co WRD	Ten Mile Lake Flood Risk Reduction Project	6/8/16	36,812	0	36,812
SWC	2075	5000	2015-17	Ward Co. WRD	Second Larson Coulee Detention Pond	7/6/16	602,307	0	602,307
SWC	2083	5000	2015-17	Pembina Co. WRD	Herzog Dam Gate & Catwalk Retrofit - Construction	10/12/16	106,188	81,817	24,370
SE	2085	5000	2015-17	Adams Co WRD	Orange Dam Rehabilitation Feasibility Study	10/13/16	8,840	0	8,840
SE	2089	5000	2015-17	Maple River WRD	Tower Township Improvement District No. 77 Study	12/19/16	16,458	0	16,458
SE	2090	5000	2015-17	International Water Institute	River Watch Program	1/12/17	59,074	5,234	53,840
SWC	2096	5000	2015-17	Southeast Cass WRD	Sheyenne-Maple Flood Control Dist. #2 Improvements	3/29/17	322,617	0	322,617
SWC	2103	5000	2017-19	Walsh Co. WRD	Bylin Dam Rehabilitation	6/19/19	131,370	10,055	121,315
SE	2109	5000	2017-19	Logan County WRD	McKenna Lake Feasibility Study	8/21/17	2,247	0	2,247
SE	2109	5000	2017-19	Logan County WRD	McKenna Lake Hydrologic Study	9/12/18	55,961	0	55,961
SWC	2115	5000	2017-19	Applied Weather Associates, LLC	(PMP) Probable Maximum Precipitation Estimates	10/11/18	600,000	280,690	319,310
SWC	2120	5000	2017-19	Apex Engineering	SWPP Transfer of Ownership Study	4/9/19	170,909	151,190	19,719
SWC	2121	5000	2017-19	Pembina Co. WRD	Senator Young Dam Rehabilitation	6/19/19	129,210	0	129,210
SWC	2123	5000	2017-19	Geotech, Inc.	Airborne Electromagnetic (AEM) 2018	8/9/18	427,354	404,250	23,104
SWC	2141	5000	2019-21	Pembina Co. WRD	Weiler Dam Gate and Catwalk Retrofit	4/9/20	118,924	0	118,924
SE	1396-01	5000	2013-15	State Water Commission	Missouri River Recovery Program	11/17/15	46,510	0	46,510
SWC	ARB-WMI-19-1	7600	2019-21	Weather Modification, Inc.	Atmospheric Resource Operations and Research Gr	6/19/19	875,722	0	875,722
SWC	PS/IRR/LOW	5000	2017-19	Lower Yellowstone Irrigation District #2	Lateral W Irrigation Project	6/14/18	366,445	0	366,445
SE	AOC/WEF	5000	2019-21	ND Water Education Foundation	ND Water Magazine	7/23/19	26,000	6,500	19,500
SWC	AOC/RRB	5000	2019-21	Red River Basin Commission	Red River Basin Commission Contractor	8/19/19	200,000	50,000	150,000
SWC	AOC/ASS	5000	2019-21	Assiniboine River Basin Initiative	ARBI's Outreach Efforts	6/19/19	100,000	0	100,000
SE	AOC/IRA	5000	2019-21	ND Irrigation Association	Water Irrigation Funding	6/28/19	50,000	25,000	25,000
SE	PS/WRD/DEV	5000	2019-21	Devils Lake Basin Joint WRB	Board Manager	7/1/19	60,000	0	60,000
SE	PS/WRD/MRJ	5000	2019-21	Missouri River Joint WRB	MRRIC Terry Fleck	5/2/19	45,000	0	45,000
SE	PS/WRD/LOW	5000	2015-17	Lower Heart WRD	Lower Heart Flood Control Study	5/10/17	21,140	0	21,140
					Subtotal General Projects		***13,202,390***	***1,666,944***	***11,536,446***
					TOTAL		17,767,052	4,138,058	13,628,994
					SWC Board Approved to Continue				

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium
Resources Trust Fund

COMPLETED GENERAL PROJECTS

Approvec By	SWC No	Dept	Approved Biennium	Sponsor	Project		Approved Date	Total Approved	Total Payments	Apr-20 Balance
					Hydrologic Investigations:					
0	0	0	0	0		0	1/0/00	0	0	0
								0	***0***	***0***
SWC	FUGRO	5000	2019-21	FUGRO	Aerial Imagery Project		6/19/19	790,000	790,000	0
SWC	2074	5000	2015-17	City of Wahpeton	Breakout Easements		7/6/16	265,250	265,250	0
SWC	2074	5000	2015-17	City of Wahpeton	Flood Control - Levee Certification		7/6/16	247,500	247,500	0
SE	2090-02	5000	2017-19	International Water Institu	River of Dreams Program		6/6/18	8,331	8,331	0
SE	849-01	5000	2017-19	Pembina Co. WRD	Goschke Dam Spillway Gate Retrofit		4/9/19	119,010	119,010	(0)
SE	1270	5000	2015-17	City of Wilton	Wilton Pond Dredging Recreation Project		12/29/15	35,707	0	35,707
SE	1273	5000	2019-21	City of Oakes	James River Bank Stabilization		11/26/19	16,869	16,869	0
SE	1403	5000	2019-21	NDSU	ND Water Resource Institute grant student stipends		1/16/20	25,000	25,000	0
SE	1431	5000	2017-19	USGS	Rapid Deployment Gage on the James River at Adrian		3/20/19	4,800	4,800	0
SE	1303	5000	2013-15	Sargent Co WRD	Gwinner Dam Improvement Feasibility Study Program		4/17/15	20,181	501	19,681
SWC	1859	5000	2017-15	ND Dept of Environmenta	NPS Pollution		8/23/17	200,629	200,000	629
SB2009	1986	5000	2019-21	ND Dept of Agriculture	Wildlife Services		8/15/19	125,000	125,000	0
SE	AOC/WEF/TOURS	5000	2019-21	ND Water Education Fou	Summer Water Tours		3/20/20	2,500	2,500	0
SE	ARB-NDAWN	5000	2019-21	North Dakota State Unive	North Dakota Agricultural Weather Network		3/16/20	1,500	1,500	0
SE	2070	5000	2015-17	Garrison Diversion Conse	Mile Marker 42 Irrigation Project		5/20/16	444	0	444
SE	477	5000	2015-17	Valley City	Mill Dam Rehabilitation Feasibility Study		6/8/16	2,937	2,937	0
SE	561	5000	2015-17	City of Tioga	Tioga Dam EAP		5/20/16	40,000	40,000	0
SE	667	5000	2017-19	Burke Co WRD	Northgate Dam 2 Emergency Action Plan		9/5/17	26,396	25,866	530
					Subtotal General Projects			***1,932,154***	***1,875,163***	***56,991***
					TOTAL			1,932,154	1,875,163	56,991

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium

					April-20 Balance
		MUNICIPAL/REGIONAL WATER SUPPLY			
			BUCKET TOTAL S.B.2020 2019-2021	***$***	***128,000,000***
			APPROPRIATED TO RED RIVER VALLEY	***$***	***43,000,000***
OBLIGATED THIS BIENNIUM					
2050-13	5000	Mandan	Mandan Raw Water Intake	6/19/19	7,840,000
2050-75-19	5000	Bismarck	Lockport Water Pump Station	6/19/19	2,280,000
2050-76-19	5000	Mapleton	Water Storage Tank	6/19/19	840,000
1973-07	5000	WAWSA	WAWSA	6/19/19	5,476,000
2050-84-19	5000	Cavalier	Water Tower Replacement	10/10/19	1,022,500
2050-85-19	5000	Mapleton	300,000 Gallon Storage Tank	10/10/19	540,000
2050-86-19	5000	Minot	SW Water Tower	10/10/19	2,855,000
2050-87-19	5000	Streeter	Well Installation and Tower Rehabilitation	10/10/19	265,000
2050-88-19	5000	Davenport	Water Improvement District No. 2019-1	10/10/19	466,000
2050-89-19	5000	West Fargo	9th Street NW Water Main	10/10/19	594,000
2050-90-19	5000	Grand Forks	Water Treatment Plant	10/10/19	9,875,000
2050-94-19	5000	Watford City	Water Distribution 2019	12/6/19	1,580,000
2050-95-19	5000	Garrison	Water Supply Treatment and Transmission Line	2/13/20	3,396,000
2050-96-19	5000	Larimore	2020 Water System Replacement	2/13/20	2,617,000
2050-97-19	5000	Park River	2020 Water Main Improvement	2/13/20	970,000
2050-98-19	5000	Sykeston	Water Tower Replacement	2/13/20	587,000
2050-99-19	5000	Valley City	Water Main Improvement 100/101	2/13/20	700,000
2050-100-19	5000	Wyndmere	2020 Water Main Improvements	2/13/20	1,730,000
2050-101-19	5000	Fargo	Downtown Water Tower	2/13/20	2,814,000
2050-102-19	5000	Lincoln	Water Tank Replacement	2/13/20	1,268,000
2050-103-19	5000	Kindred	Water Main Looping 2020	2/13/20	134,000
2050-104-19	5000	Hazen	Water Storage Improvements	2/13/20	1,430,000
2050-105-19	5000	Williston	42nd Street and 16th Avenue Water Main	2/13/20	1,196,000
2050-106-19	5000	Parshall	Water Tower Storage	4/9/20	1,323,000
2050-107-19	5000	Dickinson	North Annexation Water Supply	4/9/20	856,400
2050-108-19	5000	Valley City	Water Treatment Plant Membrane Replacement	4/9/20	867,607
			MUNICIPAL/REGIONAL WATER SUPPLY OBLIGATED		***53,522,507***
			BALANCE		***31,477,493***
COMPLETED WATER SUPPLY - FUNDS TURNED BACK					
			MUNICIPAL/REGIONAL FUNDS TURNED BACK		***0***

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium

		RURAL WATER SUPPLY			***April-20*** Balance
			BUCKET TOTAL S.B.2020 2019-2021	***$***	***37,200,000***
OBLIGATED THIS BIENNIUM					
2050-77-19	5000	Dakota Rural Water District	2019 Expansion	4/9/20	4,650,000
2050-78-19	5000	McLean-Sheridan Rural Water District	2019 Expansion	4/9/20	4,980,000
2050-79-19	5000	Northeast Regional WD	Devlis Lake Water Supply Phase II	6/19/19	1,328,000
2050-80-19	5000	Stutsman RWD	Phase 7, including Reule Lake	6/19/19	1,812,000
2050-81-19	5000	South Central RWD	North Burleigh Water Treatment Plant	6/19/19	920,000
2050-82-19	5000	Missouri West Water System	North Mandan/Highway 25 and Harmon Lake Area	8/8/19	1,095,000
2050-83-19	5000	Tri-County Rural Water District	Phase 5	8/8/19	1,990,000
2050-91-19	5000	Agassiz Water Users District	2019 Expansion	4/9/20	2,990,000
2050-92-19	5000	East Central RWD	2019 Expansion Phase IV	10/10/19	375,000
2050-93-19	5000	Greater Ramsey Water District	2019 Expansion	10/10/19	1,328,000
2050-35	5000	Southeast Water Users Dist.	System Wide Expansion	2/13/20	225,000
			RURAL WATER SUPPLY OBLIGATED		***21,693,000***
			BALANCE		***15,507,000***
COMPLETED RURAL WATER SUPPLY - FUNDS TURNED BACK					
					0
			RURAL WATER SUPPLY - FUNDS TURNED BACK		***0***

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium

						FLOOD CONTROL PROJECTS BUCKET		April-20 Balance
						BUCKET TOTAL S.B.2020 2019-2021	***$***	***197,000,000***
						APPROPRIATED TO FARGO		***66,500,000***
FLOOD CONTROL OBLIGATED THIS BIENNIUM								
SWC	1504-09	5000	2019-21	10/10/19	Valley City	Permanent Flood Protection PH IV and V		11,610,554
SWC	1974-M19	5000	2019-21	6/19/19	Souris River Joint WRD	MREFPP Minot Projects		34,650,000
SWC	1974-MA19	5000	2019-21	6/19/19	Souris River Joint WRD	MREFPP Minot Acquisitions		11,950,000
SWC	1974-R19	5000	2019-21	6/19/19	Souris River Joint WRD	MREFPP Rural Projects		32,675,000
SWC	1974-RA19	5000	2019-21	6/19/19	Souris River Joint WRD	MREFPP Rural Acquisitions		3,225,000
SE	2122	5000	2019-21	7/10/19	US Army Corps of Engineers	Development of Comprehensive Plan for Souris Basin		75,000
SWC	2128	5000	2019-21	8/8/19	City of Minot	Minot 2019 Bank Stabilization SWIF Action E		823,180
SWC	2129	5000	2019-21	8/8/19	Burleigh County WRD	Sibley Island Flood Control Project		96,420
SWC	274	5000	2019-21	9/16/19	City of Neche	Neche Levee Certification Project		36,600
SWC	2111	5000	2019-21	4/9/20	Maple River WRD	Davenport Flood Risk Reduction		2,083,600
						OBLIGATED 2019-2021		***97,225,354***
WATER CONVEYANCE OBLIGATED THIS BIENNIUM								
SWC	568	5000	2019-21	8/8/19	Southeast Cass WRD	Sheyenne River Snag & Clear		294,000
SE	662	5000	2019-21	1/28/20	Walsh County WRD	Park River Snag & Clear		50,500
SWC	1090	5000	2019-21	6/19/19	Southeast Cass WRD	Cass County Drain No. 40 Improvement Project		192,600
SWC	1217	5000	2019-21	10/10/19	Tri-County WRD	Drain No. 6		738,900
SE	1277	5000	2019-21	1/16/20	Emmons County WRD	Beaver Creek Snag & Clear		74,000
SWC	1638	5000	2019-21	10/30/19	Rush River WRD	Auka Ring Dike		24,374
SWC	1694	5000	2019-21	8/8/19	Pembina County WRD	Tongue River Snag & Clear		116,837
SE	1842	5000	2019-21	1/15/20	Richland County WRD	2019 Wild Rice River Snag & Clear		150,000
SWC	1868	5000	2019-21	8/8/19	Southeast Cass WRD	Wild Rice River Snag & Clear		120,000
SWC	2095	5000	2019-21	9/16/19	Barnes County WRD	2019 Sheyenne River Snag & Clear Reach 1 - Project 2		49,750
SWC	2138	5000	2019-21	12/6/19	Pembina County WRD	Drain No. 82		1,011,666
SWC	1999	5000	2019-21	2/13/20	Pembina Co. WRD	Tongue River Cutoff Channel Improvements		85,329
SWC	2104	5000	2019-21	2/13/20	Bottineau Co. WRD	Overgaard Extension		215,969
SWC	2127	5000	2019-21	2/13/20	Sargent Co WRD	Sargent County Drain 12 Improvement		267,512
SWC	2112	5000	2019-21	2/13/20	Pembina Co. WRD	Pembina Co Drain #81		284,982
SE	2143	5000	2019-21	3/27/20	Traill Co. WRD	Hillsboro Drain No. 26 Channel Improvements		72,041
SWC	2094	5000	2019-21	4/9/20	McLean County WRD	Fort Mandan/4H Camp Access Road		67,996
SWC	2136	5000	2019-21	4/9/20	Pembina County WRD	Drain No. 39		210,928
SWC	2140	5000	2019-21	4/9/20	Grand Forks-Traill County Joint WR	Thompson Drainage		688,107
SWC/SE	1413-01	5000	2019-21	4/9/20	Traill Co. WRD	Camrud Drainage Improvement District No. 79		812,925
						OBLIGATED 2019-2021		***5,528,416***
						SUBTOTAL OBLIGATED THIS BIENNIUM		***102,753,770***
						BALANCE OF S.B. 2020 BUCKET	***$***	***27,746,230***
COMPLETED FLOOD CONTROL - FUNDS TURNED BACK								
COMPLETED WATER CONVEYANCE - FUNDS TURNED BACK								
SWC	1650	5000	2017-19	6/19/19	Sargent Co WRD	Sargent County Drain No. 7 Cost Overrun		3,589
SE	662	5000	2015-17	2/17/17	Walsh Co. WRD	Park River Snagging & Clearing		25,608
SWC	1311	5000	2015-17	3/9/16	Traill Co. WRD	Buxton Township Improvement District No. 68		29,133
						TOTAL FUNDS TURNED BACK		***58,330***
						BALANCE PROJECT SUMMARY WORKSHEET	***$***	***27,804,560***
						VARIANCE		(58,330)

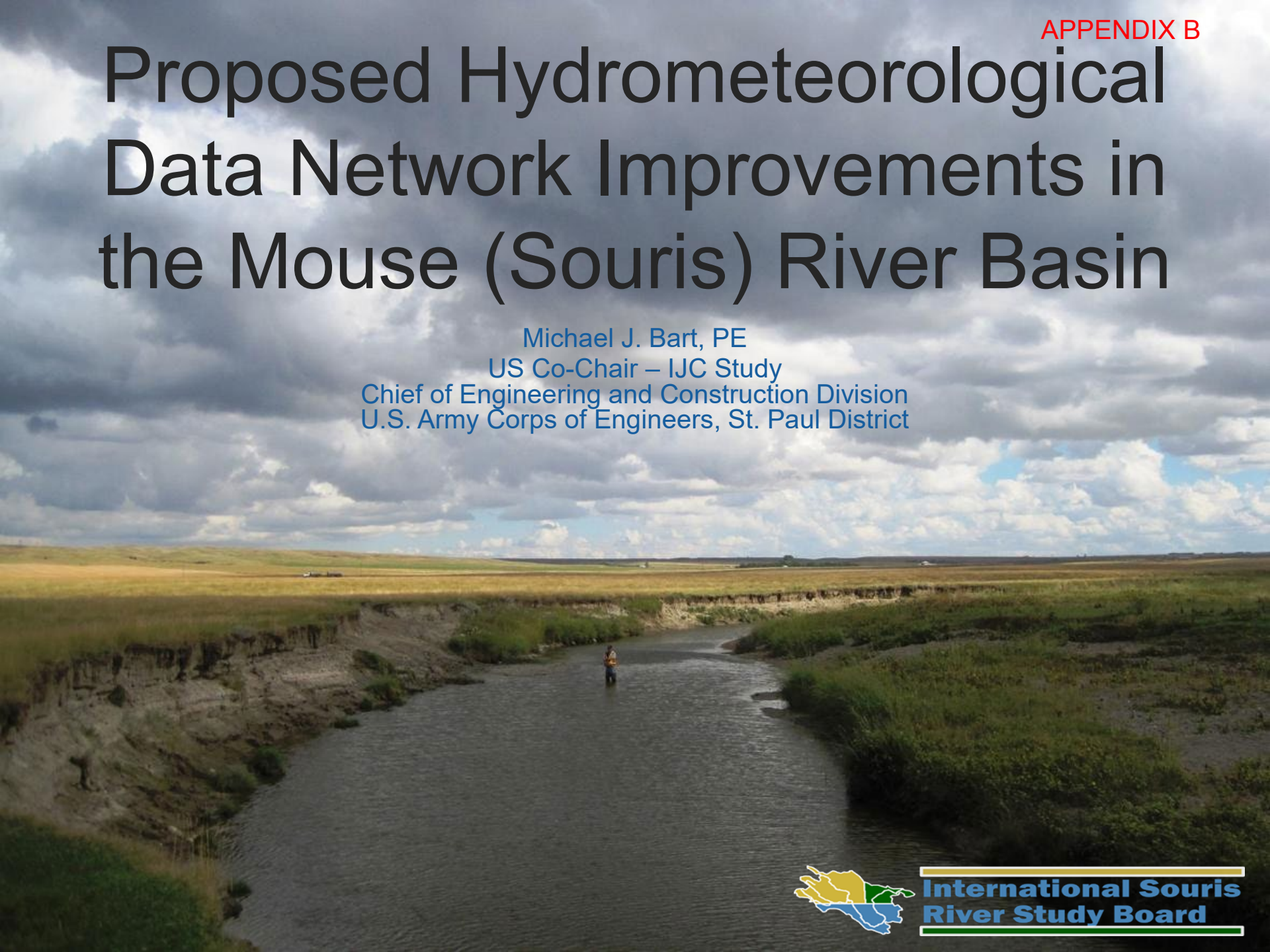
STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium

					GENERAL PROJECTS BUCKET		***April-20*** Balance
						BUCKET TOTAL S.B.2020 2019-2021	***$ 27,093,776***
OBLIGATED THIS BIENNIUM							
SWC	AOC/RRC	5000	2019-21	6/19/19	Red River Basin Commission	Red River Basin Commission Contractor	200,000
SWC	AOC/ASS	5000	2019-21	6/19/19	Assiniboine River Basin Initiative	ARBI's Outreach Efforts	100,000
SWC	2041	5000	2019-21	6/19/19	USGS	Stream Gage Joint Funding Agreement	81,149
SWC	62019	7600	2019-21	6/19/19	Weather Modification Inc.	Atmospheric Resource Operations and Research Grants	875,722
SWC	FUGRO	5000	2019-21	6/19/19	Fugro	Aerial Imagery Project	790,000
SE	AOC/WEF	5000	2019-21	7/23/19	ND Water Education Foundation	ND Water Magazine	26,000
SE	632	5000	2019-21	1/16/20	Bottineau County Highway Department	Antler Dam Repair	34,800
SWC	989	5000	2019-21	6/19/19	USGS	Stream Gage Joint Funding Agreement	110,000
SE	1273	5000	2019-21	11/26/19	City of Oakes	James River Bank Stabilization	16,869
SWC	1389	5000	2019-21	8/8/19	Bank of ND	BND AgPace Program	150,000
SE	1403	5000	2019-21	1/16/20	NDSU	ND Water Resource Institute Grant Student Stipends	25,000
SE	1431	5000	2019-21	10/17/19	USGS/LaMoure County	Rapid Deployment Gages Under FEMA Hazard Mitigation Grant Program	500
SWC	1859	7600	2019-21	8/8/19	ND Dept of Environmental Quality	NPS Pollution	200,000
SWC	1986	5000	2019-21	8/15/19	ND Dept of Agriculture	Wildlife Services	125,000
SE	2090	5000	2019-21	8/2/19	International Water Institute	River Watch Program	53,840
SWC	HB1202	5000	2019-21	8/8/19	Various Consulting Firms	Sovereign Land Navigability Determination	400,000
SE	AOC/IRA	5000	2019-21	6/28/19	ND Irrigation Association	Water Irrigation Funding	50,000
SE	PS/WRD/DEV	5000	2019-21	7/1/19	Devils Lake Basin Joint WRB	Board Manager	60,000
SE	PS/WRD/MRJ	5000	2019-21	5/2/19	Missouri River Joint WRB	MRRIC Terry Fleck	45,000
SWC	391	5000	2019-21	4/9/20	Sargent Co WRD	Silver Lake Dam Improvements	161,918
SWC	394	5000	2019-21	4/9/20	Golden Valley Co WRD	Odland Dam Rehabilitation Project	595,800
SWC	1267	5000	2019-21	2/7/20	Bottineau County WRD	Westhope Dam Rehabilitation	47,529
SE	1378	5000	2019-21	2/7/20	Barnes Co WRD	Clausen Springs Dam EAP	72,052
SWC	1785	5000	2019-21	2/13/20	Maple River WRD	Maple River Dam Site T-180 Improvements	212,216
SE	1301	5000	2019-21	3/30/20	Richland Co. WRD	North Branch Antelope Creek NRCS Small Watershed	17,500
SWC	2141	5000	2019-21	4/9/20	Pembina Co. WRD	Weiler Dam Gate and Catwalk Retrofit	118,924
SE	AOC/WEF/TOUR	5000	2019-21	3/20/20	ND Water Education Foundation	Summer Water Tours	1,500
SE	ARB-NDAWN	5000	2019-21	3/16/20	North Dakota State University	North Dakota Agricultural Weather Network	2,500
						OBLIGATED 2019-2021	***4,573,819***
						BALANCE OF S.B. 2020 BUCKET	***$ 22,576,949***
COMPLETED GENERAL PROJECTS - FUNDS DEOBLIGATED							
SE	1270	5000	2015-17	12/29/15	City of Wilton	Wilton Pond Dredging Recreation Project	35,707
SE	667	5000	2017-19	9/5/19	Burke County WRD	Northgate Dam 2 Emergency Action Plan	530
SE	1303	5000	2013-15	4/17/15	Sargent Co WRD	Gwinner Dam Improvement Feasibility Study Program	19,681
SE	1859	5000	2017-19	8/8/19	ND Dept of Environmental Quality	NPS Pollution	629
SE	2070	5000	2015-17	5/20/16	Garrison Diversion Conservancy Dist.	Mile Marker 42 Irrigation Project	444
						TOTAL FUNDS DE OBLIGATED	***56,991***
						BALANCE PROJECT SUMMARY WORKSHEET	***$ 22,576,949***
						VARIANCE	0

APPENDIX B

Proposed Hydrometeorological Data Network Improvements in the Mouse (Souris) River Basin

Michael J. Bart, PE
US Co-Chair – IJC Study
Chief of Engineering and Construction Division
U.S. Army Corps of Engineers, St. Paul District

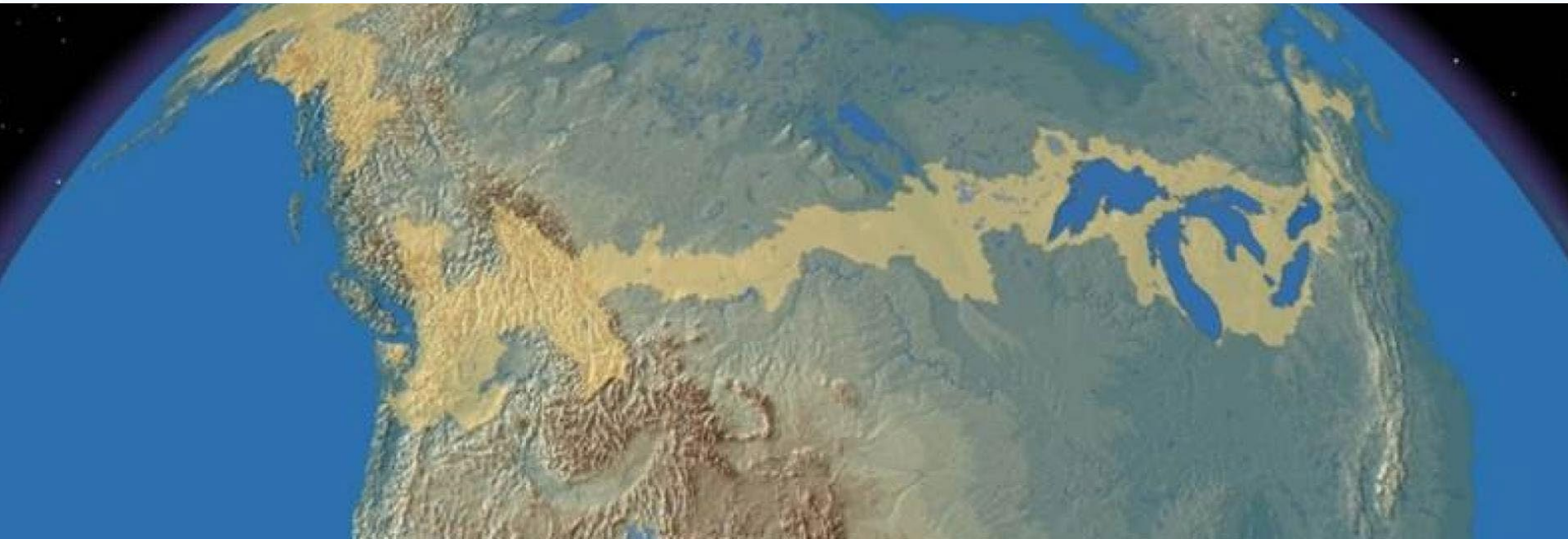


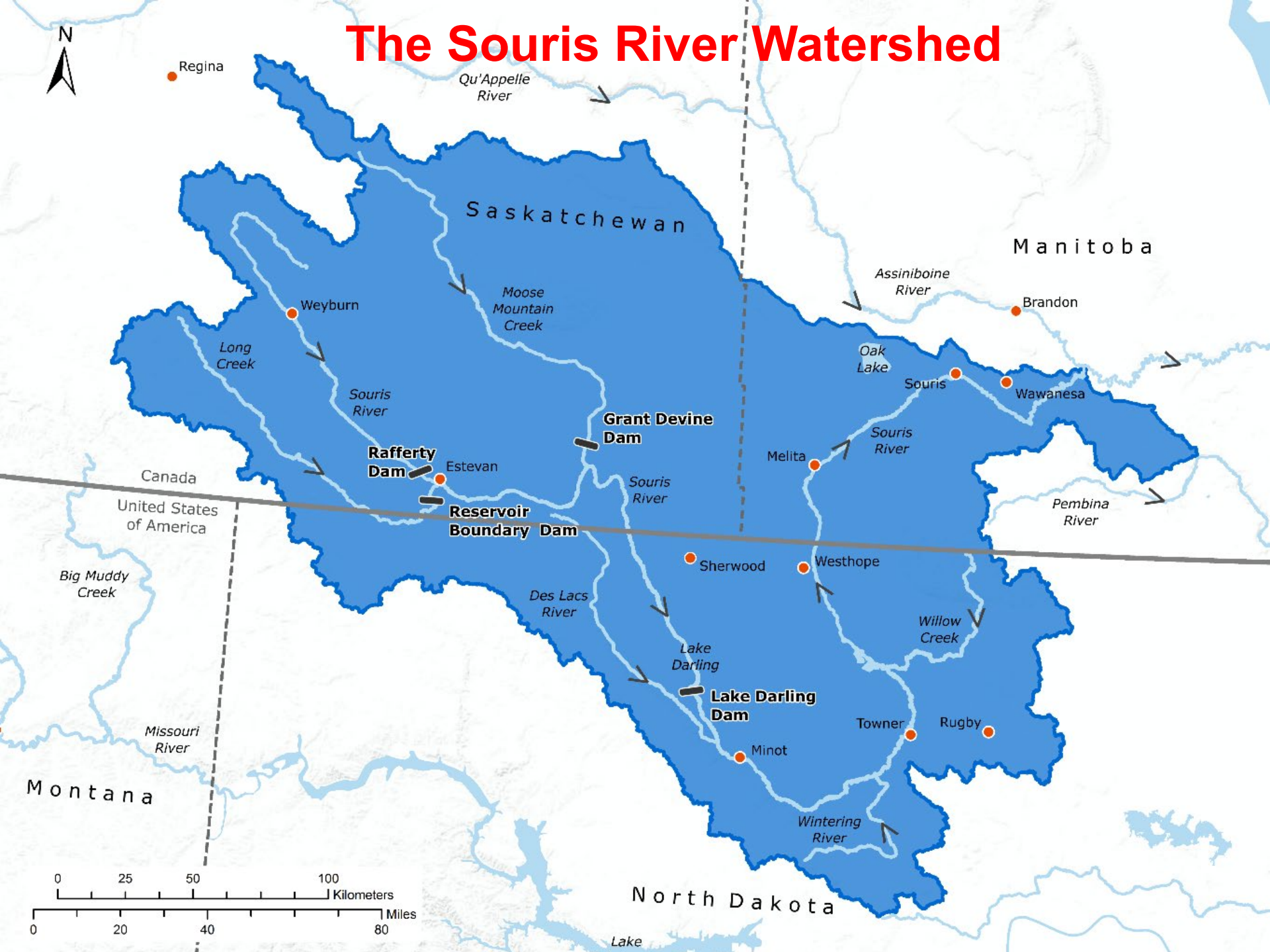
International Souris River Study Board

Presentation Outline

- Background Info on:
  - The International Joint Commission and the Souris River Board
  - The Souris River
  - The Souris River Study Board
- The Hydrometeorological Data Network Improvement Report
  - Proposed Precipitation Gages
  - Proposed Stream Gages
  - Other Recommendations

What is the International Joint Commission?




The Souris River Watershed
N
Regina
Qu'Appelle River
Saskatchewan
Manitoba
Assiniboine River
Brandon
Weyburn
Moose Mountain Creek
Long Creek
Souris River
Grant Devine Dam
Rafferty Dam
Estevan
Reservoir
Boundary Dam
Canada
United States of America
Oak Lake
Souris
Wawanesa
Melita
Souris River
Pembina River
Sherwood
Westhope
Big Muddy Creek
Des Lacs River
Willow Creek
Lake Darling
Lake Darling Dam
Towner
Rugby
Minot
Missouri River
Montana
Wintering River
North Dakota
0 25 50 100 Kilometers
0 20 40 80 Miles

What is the Souris River Study Board?

Water Security Agency

Manitoba

Environment and Climate Change Canada

Environnement et Changement climatique Canada

U.S. Fish & Wildlife Service

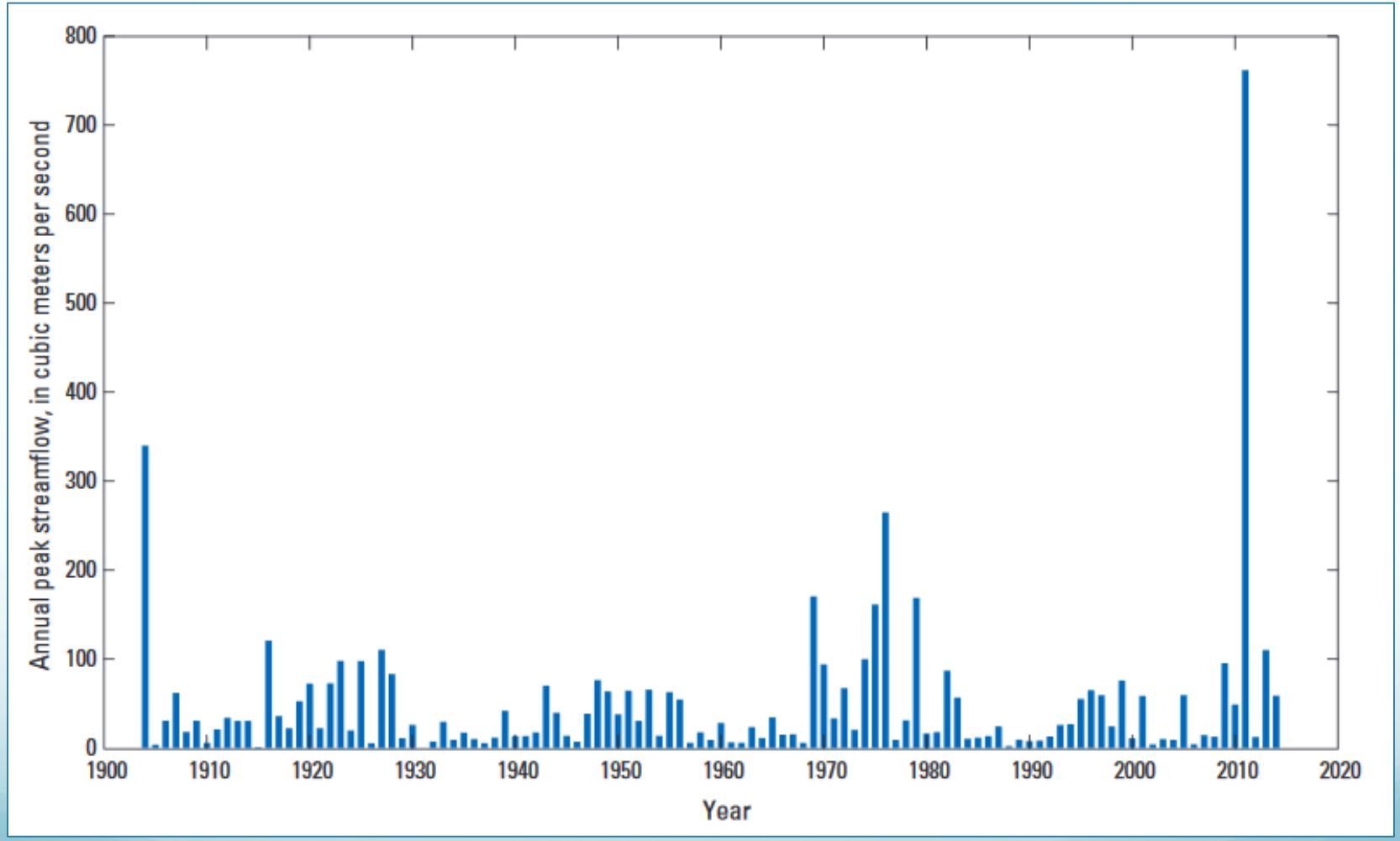
USGS science for a changing world

US Army Corps of Engineers®

North Dakota Be Legendary.™ | Water Commission & State Engineer

National Weather Service

Motivation Behind the Souris River Study



Study Components

Old No.	New No.	Name	Group
1a, 1b, 2	OR1	1989 Agreement Language Review	Operating Rules Review
3	DW1	Summarize POS Projects and Report Progress since 2013	Data Collection and Management
4	DW2	Lidar and Bathymetry for Reservoirs	
5	DW3	Review of Hydrometerological Network Report	
6	DW4	Data Collection for PRM	
7	HH1	Regional Hydrology	Hydrology & Hydraulics
8	HH2	Stochastic Water Supplies	
9	HH3	Artificial Drainage Impacts Review	
10	HH4	Flow Simulation Tools Development (MESH)	
11, A4	HH5	ECCC Climate Change Supplies	
12	HH6	Reservoir Flow Release Planning (RES-SIM)	
13	HH7	Reservoir Flow Release Planning (HEC-RAS)	
new	HH8	Develop PRM Model	
new	HH9	Model System Integration	
new	HH10	Forecasting Assessment	
14, A1, A3, A5, A	PF1	Workshops and Engagment	Plan Forumlation
15, 16, 17	PF2	Run and Evaluate Alternatives	
new	PF3	Dam Safety	
new	PF4	Roadmap for apport., water quality, and aquatic eco. health	
	A1	Administration - Independent Review Group	
	A2	Administration - Study Manager (Canada)	
	A3	Administration - Study Manager (U.S.)	

A Model and its Products are Only as Good as its Data. Models Guide Decisions.

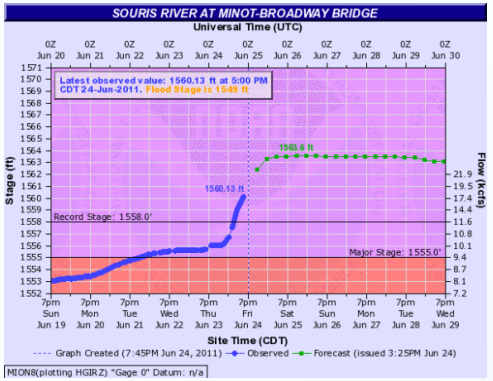
Stream Gages

Precipitation Gages

Runoff, River, Reservoir Models

CWMS
CORPS WATER MANAGEMENT SYSTEM

Outputs, such as River Stage

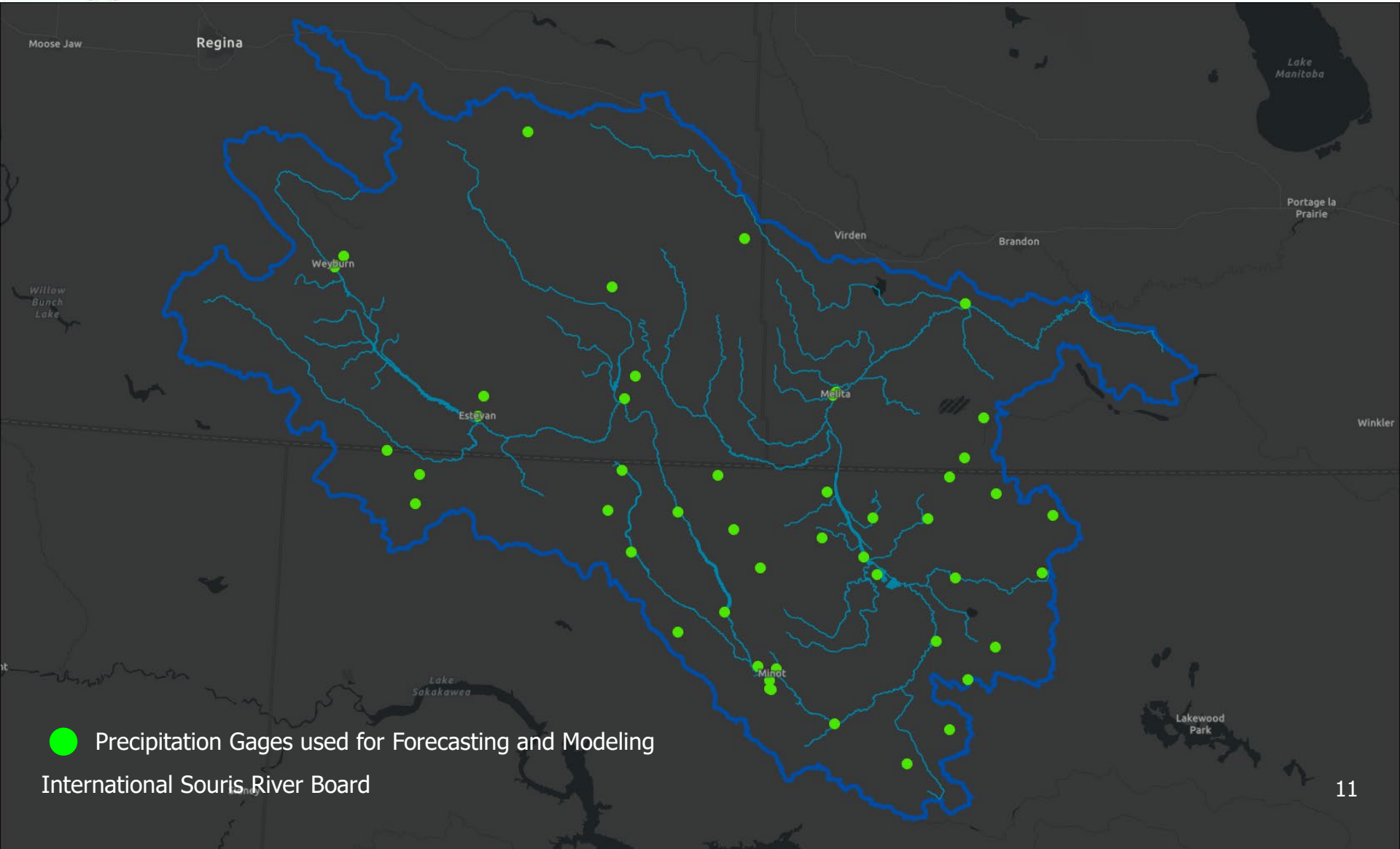


Other Hydrologic Data:

- Snowpack
- Soil Moisture
- Evaporation
- Etc…

Management and Response Decisions

Where are Precipitation Gages?



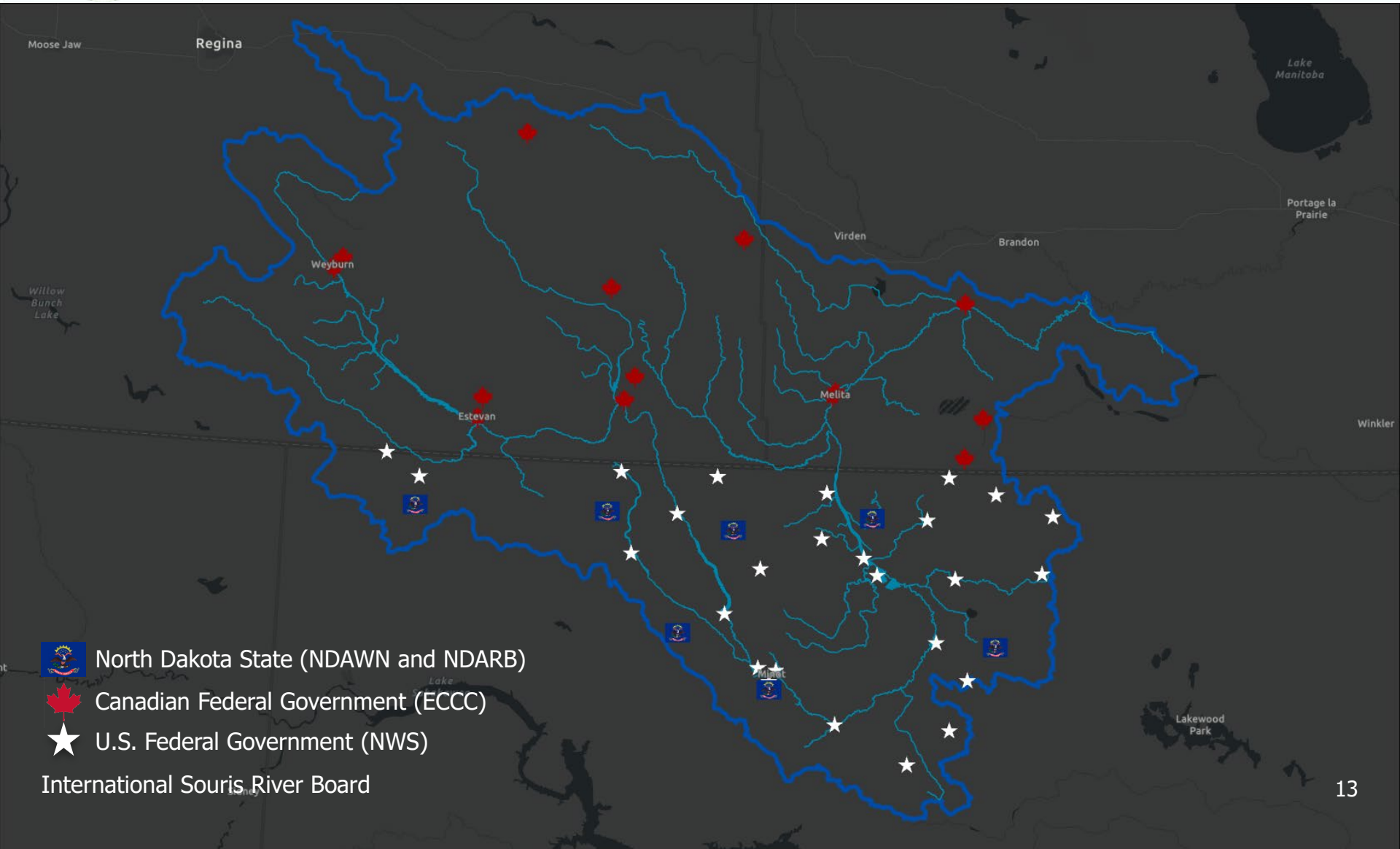
International Souris River Board

How is Data Reported from these Gages?

- Automatic Gages
- Manual Gages

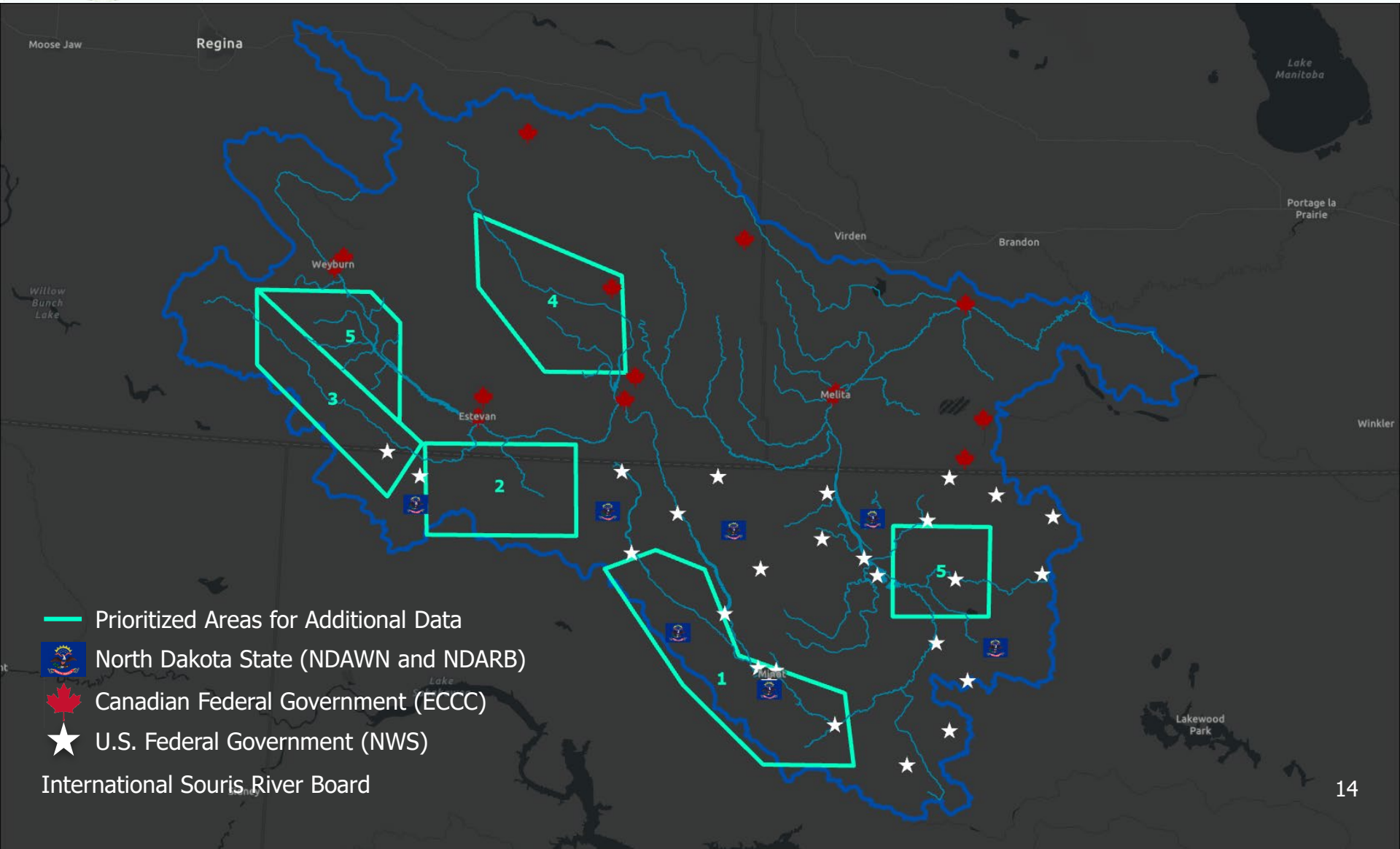
International Souris River Board

Who Operates these Precipitation Gages?



International Souris River Board

Where Would Additional Precipitation Gages Help Forecasting?

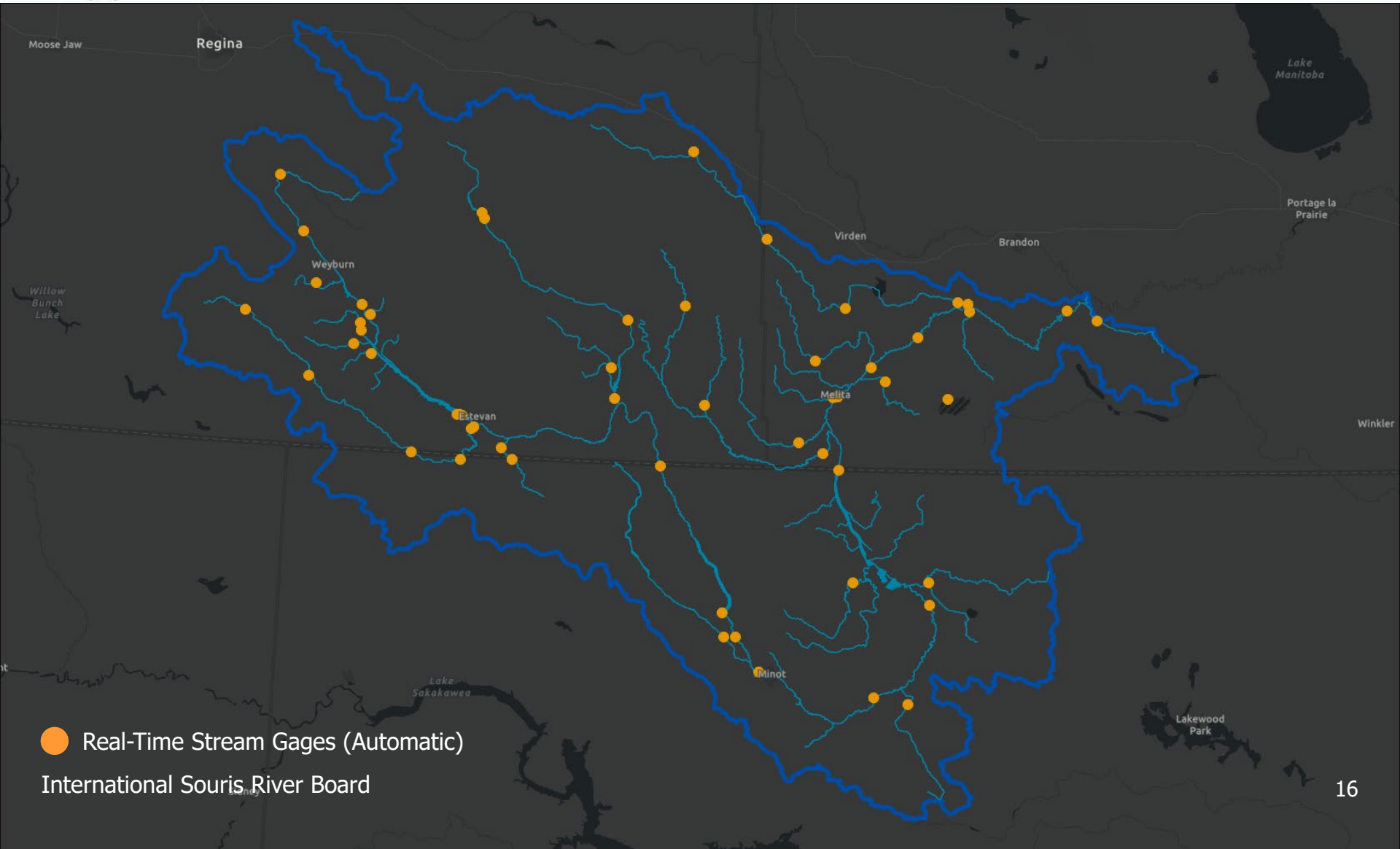


International Souris River Board

Where Would Additional Gages Help Forecasting?

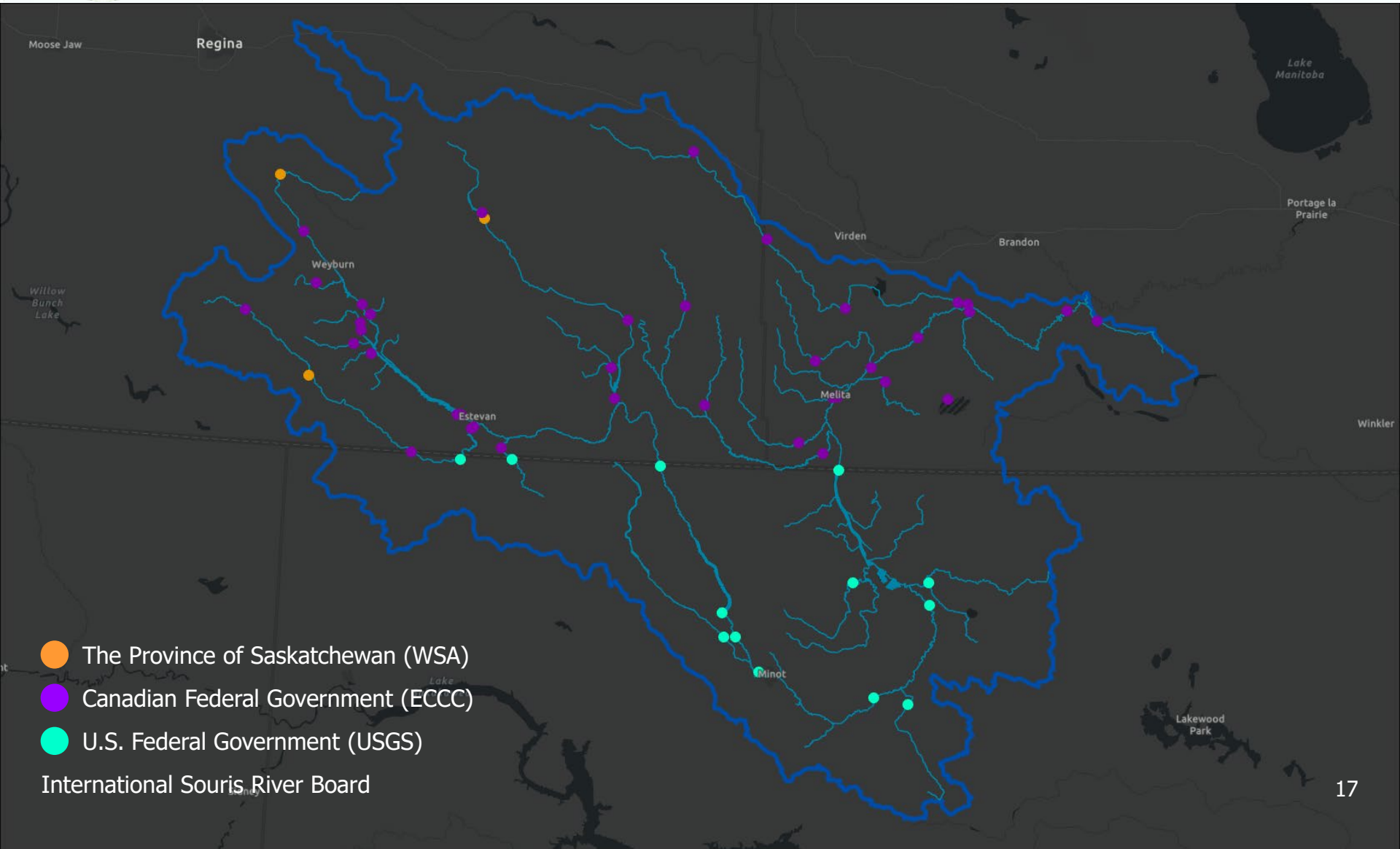
Priority	Gage Location	Rationale
1	Coulee Region (Des Lacs and Souris Rivers)	The coulees are flashy in response to precipitation and impact forecasting and regulation
2	North of McGregor	Lack of Radar
3	Tribune/Hoffer/Goodwater (Long Creek)	Lack of radar and important tributaries to Rafferty Reservoir
4	Arcola Area	Lack of Data
5	Tied – Innes/Neptune/Weyburn	Lack of Data
5	Tied – South of Bottineau	Lack of Data

Where are Stream Gages?



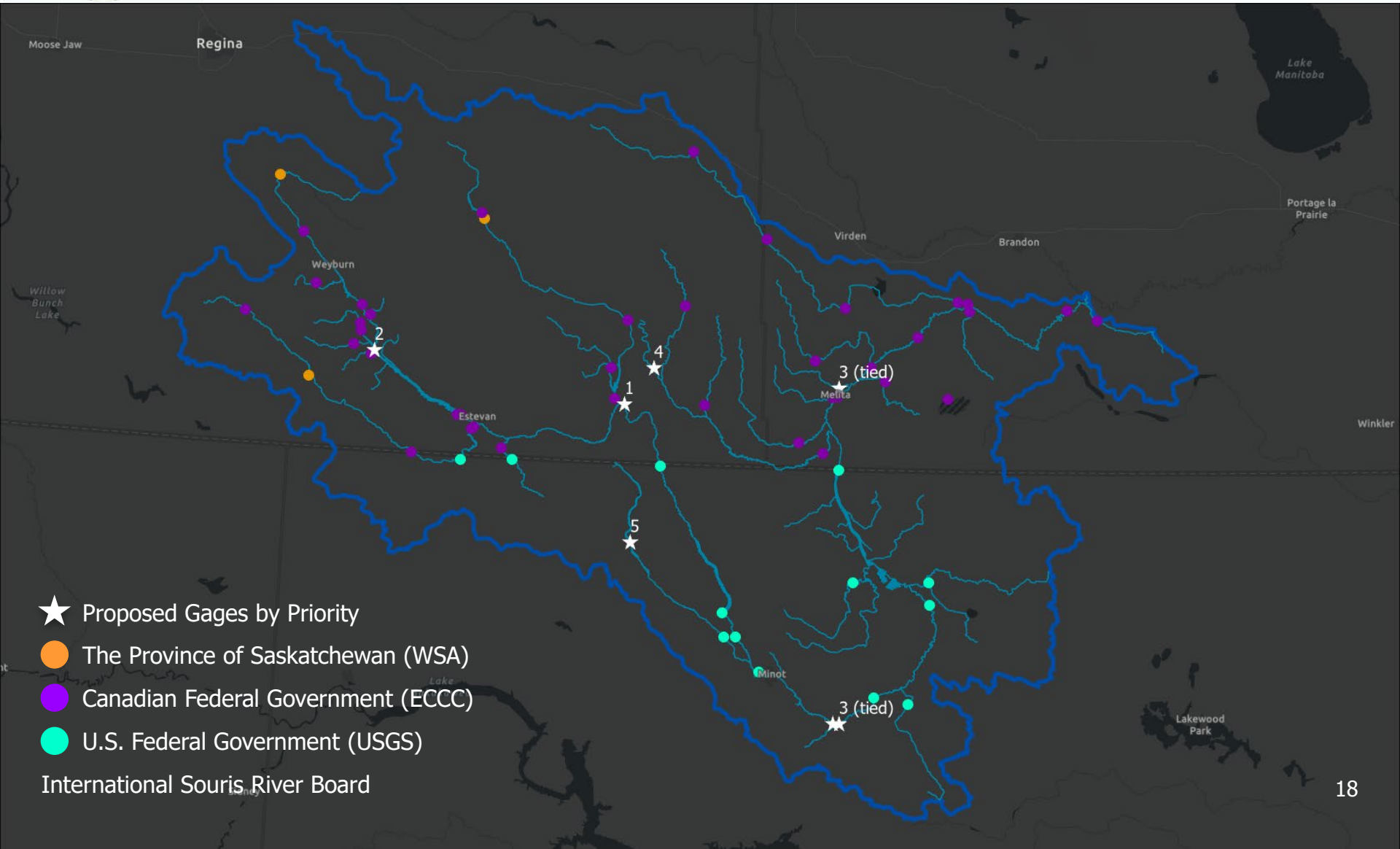
International Souris River Board

Who Operates these Stream Gages?



International Souris River Board

Where Would Additional Stream Gages Help Forecasting?



Where Would Additional Stream Gages Help Forecasting?

Priority	Gage Location	Purpose	Importance
1	Souris River near Oxbow	Flood Forecasting, Water Supply & Appropriations	Captures local area downstream of Rafferty and Grant Devine reservoirs and increases lead time for inflows in to Lake Darling
2	Rafferty Reservoir – Water Level Gage	Reservoir Regulation	Inflow to Rafferty; useful to minimize wind impacts on levels
3	Tied – Jackson Creek near Broomhill	Flood forecasting, modeling	Spatial distribution of real time data available, tributary
3	Tied – Bonnes Coulee near Velva	Flood forecasting, modeling	Major Coulee
4	Auburnton Creek near Auburton	Flood forecasting, modeling	Spatial distribution of real time data available, tributary
5	Des Lacs River at the NWR outlet	Flood forecasting, modeling	Outflow from Refuge and upper Des Lacs basin; rapid deployment gages have been used

U.S. Cost Estimates

	Initial Cost (per Gage)	Annual Operation and Maintenance Cost (per Gage)
Precipitation Gage	$6,000	$6,000 - $10,000
Stream Gage	$10,000	$20,000 - $22,000

*Maintenance cost estimates include the cost of replacing the equipment, as it is required

Other Recommendations

- Continue to address data dissemination issues with NDAWN and other agencies.
- Develop and maintain a comprehensive snow survey program for the basin.
- Explore the feasibility of a soil moisture observing program.
- Develop low-flow and drought monitoring tools and processes for water supply decision support, including methods and datasets to better estimate evapotranspiration.
- Examine the potential for satellite re-analysis products depicting soil moisture and ice conditions.
- Data accessibility and data harmonization continue to be challenging. Examine the value of various data assimilation products that blend observations and model output.
- Pursue studies and model improvements to incorporate a better understanding of runoff processes that are unique to the prairie pothole region, including fill and spill, frozen ground, and artificial drainage network impacts.

Questions?

APPENDIX C

Southwest Pipeline Project Transfer of Ownership

North Dakota State Water Commission

April, 2020

DGR ENGINEERING

Apex Engineering Group

Water | Transportation | Municipal | Facilities

Apex Engineering Group

Water | Transportation | Municipal | Facilities

DGR ENGINEERING

Certification

Southwest Pipeline Project Transfer of Ownership

North Dakota State Water Commission

Apex Project Number 18.110.0178

Certification

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of North Dakota.

Mike Berg

Signature

Mike Berg

Typed or Printed Name

4/8/20

Date

PE-5879

License Number

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. BERG
PE - 5879
DATE 4/8/20
NORTH DAKOTA

April, 2020

Apex Engineering Group, Inc.
600 South 2nd Street – Suite 145
Bismarck, ND 58504

Table of Contents

List of Figures

List of Tables

1.0 Introduction

The Southwest Pipeline Project (SWPP) is in Southwest North Dakota serving all or portions of approximately 13 counties. These include Adams, Billings, Bowman, Dunn, Golden Valley, Grant, Hettinger, Mercer, Morton, Oliver, Slope, Stark and a portion of McKenzie County. Additionally, the SWPP provides wholesale water to Missouri West Water System in Morton County and to Perkins County Rural Water System in South Dakota.

Southwest North Dakota is an area with limited water resources. Groundwater, where available, is generally of a poor quality and the small rivers in the region have flows that are considered inadequate for development. The SWPP was conceived to bring high quality treated Missouri River water to users in this area. It was initially planned to be a wholesale water supply system, servicing only entities under contract, such as cities and rural water systems within the project area. The SWPP was later expanded to service individual rural customers to improve overall efficiencies.

The SWPP is owned by the North Dakota State Water Commission (SWC). Preliminary planning and design began in 1981 and construction was authorized in 1985. Continued construction on the project is dependent on funding from the North Dakota Legislature and is anticipated to continue through 2028. In 1996, Operations and Maintenance (O&M) responsibilities of the SWPP were transferred to the Southwest Water Authority (SWA) through a Transfer Agreement. The SWA is a political subdivision governed by a 15-member board of directors.

1.1 Purpose

In April 2019, the SWC authorized this Ownership Transfer Study in order to determine the advantages and disadvantages of transferring not just O&M responsibilities, but full ownership of the SWPP from the SWC to the SWA. The study has been divided into two phases. Phase 1 will investigate the current Capital Repayment model of the SWPP and develop possible alternatives. The effect of those alternatives on water rates will be discussed. A comparative analysis of the capital financing model and governance model of the SWPP to the other large regional water systems in North Dakota will be conducted.

Phase 2 will investigate effects of ownership transfer on the ownership of land and associated facilities, construction contracts, water supply contracts, easements and permits, other agreements, and necessary legislative changes associated with the transfer of ownership. Phase 2 will proceed at the discretion of the SWC.

1.2 Scope

This report will focus on Phase 1 of the Ownership Transfer Study. The Capital Repayment Evaluation will include a review of the existing capital repayment model for the SWPP and an evaluation of potentially equitable options for adjustments to the capital repayment if ownership were transferred or retained. The study will evaluate the additional work required by the SWA to perform construction management functions and additional staff requirements that would result with the transfer of

ownership. The potential impact to existing water user rates will be evaluated. The funding framework currently used by the SWPP will be compared with the frameworks used by the Western Area Water Supply, Northwest Area Water Supply, and the proposed Red River Valley Water Supply Project. The governance models of each of the water systems will also be compared. Finally, the relative merits or demerits of the State divesting ownership of the SWPP to the SWA based on the above analyses will be evaluated.

Preliminary technical memoranda on these tasks have been presented to the SWC. A 30-day comment period following that presentation resulted in various comments from the public and the SWC. Those comments will be addressed in this final report as warranted and are presented in full in the Appendix.

2.0 Capital Repayment Evaluation

Funding for the project has come from state and federal sources. The primary funding source from the State for the SWPP has been the Resources Trust Fund (RTF). The RTF is funded principally through annual deposits from the Oil Extraction Tax (OET) and Capital Repayments from Regional Water Systems, such as the SWPP. The local share of the project is provided through capital repayment. This section of this technical memorandum will analyze the Capital Repayment model for the SWPP.

Both the State and SWA use the terms "Capital Repayment" and "Return on Investment" interchangeably in various reports and publications. For simplicity and clarity, this analysis will refer to these payments to the State only as "Capital Repayment." Methodology for capital repayment and initial rating baselines were established in a 1982 study (Heider Study) by financial advisor Chiles, Heider & Company, Inc. A portion of this analysis will summarize the Heider Study and highlight long-term implications of the rating methodology employed in 1982.

2.1 Initial Capital Repayment Model

A 1981 Preliminary Engineering Report (PER) by Bartlett-West/Boyle determined an Operation, Maintenance, Management and Replacement (OM&R) cost of $1.11 per-1,000 gallons for the initial 24 towns in the project area. Per the PER, the project would not be self-supporting and would require initial State backing.

USDA Rural Development (RD), formerly Farmers Home Administration (FmHA), frequently finances water projects for which user fees are inadequate to repay all capital costs. Water utilities financing capital improvements through USDA RD qualify for various grant assistance based on income limitations and a comparison of water rates between similar systems in the area. While there was some initial involvement in the SWPP from USDA RD, it has been withdrawn due to the project's access to other funding resources, primarily the RTF.

The impetus of the October 1982 Chiles, Heider & Co. report (Heider Study) was to determine a fair and affordable means of repayment to the State by users in the project area. The Heider study cites an FmHA method for determining a reasonable capital repayment rate in which to charge users a fee based on a percentage of their income, on par to that paid by users of similar projects, i.e. ability to pay.

Ability to pay as an economic principle suggests that the expense an individual pays should be dependent on the level of burden that expense will create, relative to the wealth of the individual. Thus, per-capita income was used as the baseline metric for determining ability to pay. The 1980 Weighted average per-capita income within the project area and State were $6,111 and $6,643 respectively. Incomes in the initial project area were 8% less than the average per-capita North Dakota Income, which indicates 8% diminished ability to pay relative to State averages.

Willingness to pay is a qualitative metric and thus more difficult to define than ability to pay. Willingness must anticipate and forecast individual's inclination to make future payments without fully

understanding the benefits they might receive. Existing water in the project area was generally poor in quality, requiring extensive treatment expense. Additionally, water was difficult to locate and costly to pump in many instances. The existing weighted average cost per-thousand gallons in the project area was determined to be $0.77, while the weighted average cost was $0.68 in selected communities throughout the remainder of the State.

The 1982 study circulated 2,000 questionnaire surveys in order to gain a better understanding of willingness to pay within the project area. A consensus supported the assertion that the project area had been economically impaired due in part to existing water conditions. In addition, many residential responses explicitly indicated a willingness to pay more for water, assuming the additional cost would be fair, equitable, and extendable over a long period of time. Most people, however, could not relate what the cost of their own residential water bills would be as a result of the project. Thus, any specific additional amount that individuals were willing to pay was impossible to quantify.

In summary, the 1982 Heider report presents an impaired ability to pay in the project area, albeit a perceived willingness to pay more due to the area's stifled economic growth as a result of a lack in water availability and existing poor quality. In mutual agreement with the PER, the Heider study deemed State financial assistance essential, especially in the early years of the project.

Rather than espousing the 3-State average capital repayment rate of $0.59/1,000 gallons, the Heider study endorsed the Bartlett-West recommendation to initially reduce the capital repayment rate by 25% and establish a rate of $0.44/1,000 gallons. This was due in large part to the project area's relatively high projected OM&R of $1.11/1,000 gallons compared to other similar systems. Furthermore, bonded debt levels within the project area were also considered higher than State averages, diminishing customers' ability to pay.

Table 1 1980 Weighted Average Cost

1980 – Weighted Average Cost to Project Users ($ per-1,000 gallons)			
	Total	**OM&R**	**Capital Repayment**
Project Area	$1.70	$1.11	$0.44
North Dakota	$1.60	$0.84	$0.76
3-State Area	$1.38	$0.79	$0.59

The capital repayment rate would subsequently be adjusted annually by the Consumer Price Index (CPI). Thus, capital repayments to the State RTF would generally reflect inflationary trends and keep pace with customers' increased ability to pay.

In 1991 the SWC expanded the authority of the SWPP to include individual rural customers in the project area. This expansion of authority took advantage of demand diversity and economies of scale to provide retail service in the project area. The capital repayment rate for individual rural customers was established at $20/month for a standard service, regardless of the amount of water consumed. This

fixed fee capital repayment is also adjusted annually by the CPI adhering to the concept that capital repayments increase with customers' "ability to pay".

However, this capital repayment model has some unique long-term implications that will be discussed in the remainder of this section. It is imperative to note that users in the project area would pay the CPI-indexed rates, either per-1,000 gallons on their actual water use or per service for individual customers. Consequently, as the user base continuously expands, water usage among existing customers increases, or usage increases due to population growth, capital repayment will outpace inflation. This is a major deviation from any similar systems studied for comparison that use termed and subsidized debt payments. Those systems pay a fixed annual capital repayment charge (i.e. debt service payments) with devalued dollars, regardless of their water usage or customer base. This results in a strong incentive to expand the customer base effectively reducing the capital repayment per customer or per-1,000 gallons as the system grows.

In addition, the absence of capital repayment terms styles the capital repayment arrangement analogous to that of a perpetual annuity with escalating payments for the benefit of the State. The 1996 Transfer Agreement and subsequent amendments shifted OM&R responsibilities to the SWA. Particularly regarding the replacement responsibilities, the SWC divested itself of future capital outlays related to replacements. This is another significant difference from similar systems where the Owners of the facility are responsible, at least financially, for replacing those assets.

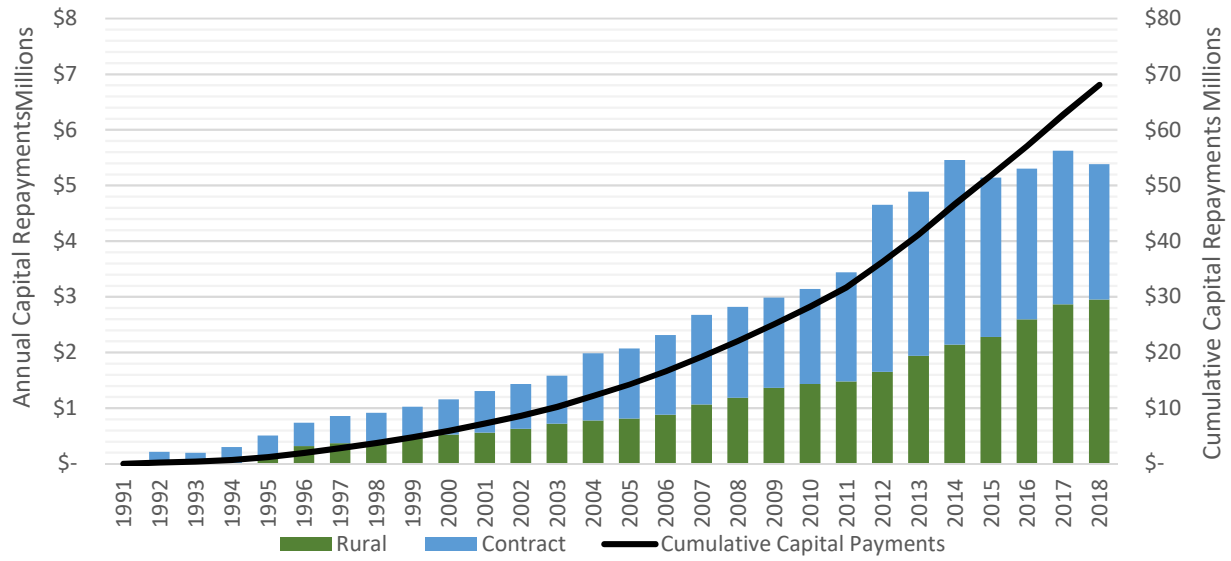
Finally, as part of the 1996 Transfer Agreement, the State required the SWA to make separate payments into the Replacement and Extraordinary Maintenance Fund (REM Fund). Various practices have developed over the years to identify what types of expenses qualify for REM Funds. In general, these are infrequent/extraordinary maintenance expenses greater than $20,000. Based on conversations with SWC staff and a review of historical expenses, items include any major replacement of capital that does not expand or increase capacity. Where capacity is increased or expanded it is funded through the RTF funds as part of the original authorization. In circumstances where an asset is replaced and capacity is increased at the same time, efforts are made to allocate the costs accordingly.

Critical to the analysis is that both the State and the SWA appear to be planning for these major capital replacements by pre-funding the REM Fund in addition to the capital repayments. This is a significant difference from other water utilities that predominantly use debt instruments for major replacements. Using debt ensures the customers that are utilizing an asset are paying the cost of that asset. By prefunding replacements, current SWPP customers are not only making capital repayments on the existing facilities, in perpetuity, but are also making payments on assets that are yet to be placed in service.

2.2 Capital Repayments Made to Date

Capital repayment history from 1991 through 2018 is included in Appendix A of this report and summarized below in **Figure 1**. The values shown include all capital repayments made by SWPP customers including those that were deposited into the RTF or used to make loan or bond payments.

Figure 1 Capital Repayments by Customer Class 1991 - 2018



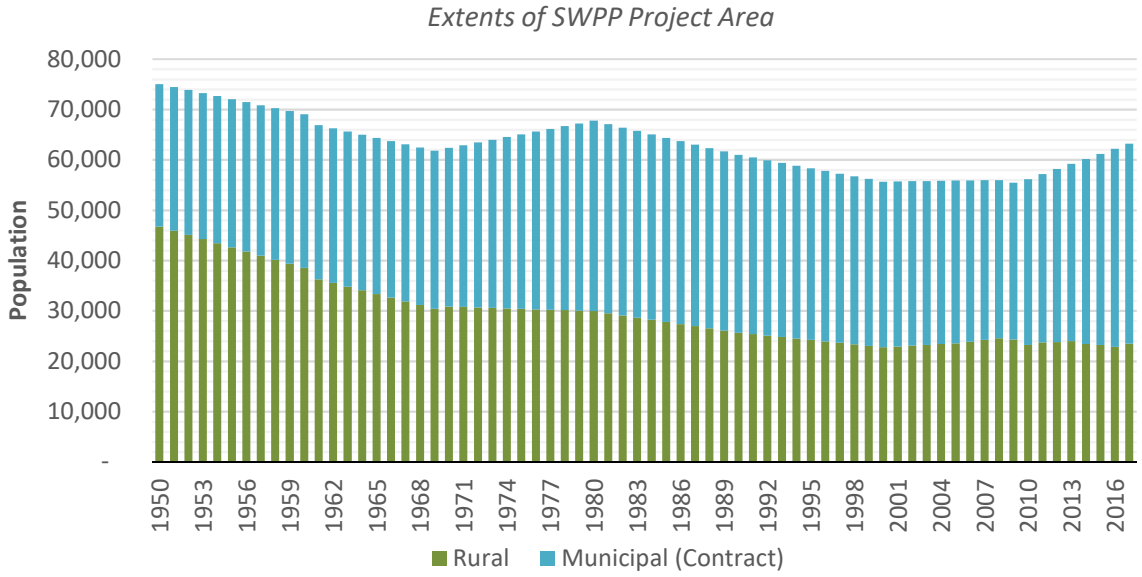
2.3 Forecasting the Current Capital Repayment Model

This analysis expands upon previous attempts by others to forecast future capital repayments made to the State (RTF), updating the existing model. The most significant modification is that the updated model accounts for changes in user base in addition to rate changes. Several demographic metrics are identified, analyzed, and used to define assumptions which are discussed below.

2.3.1 Population

Population data for the Project area from 1950 to the present is shown in **Figure 2**. The general pattern since the 1950's indicates a population shift in the project region from that of predominantly Rural to predominantly Municipal. The current total population in the project area is approximately 63,000. This is 85% of the population in 1950 and about 93% of total population in 1980.

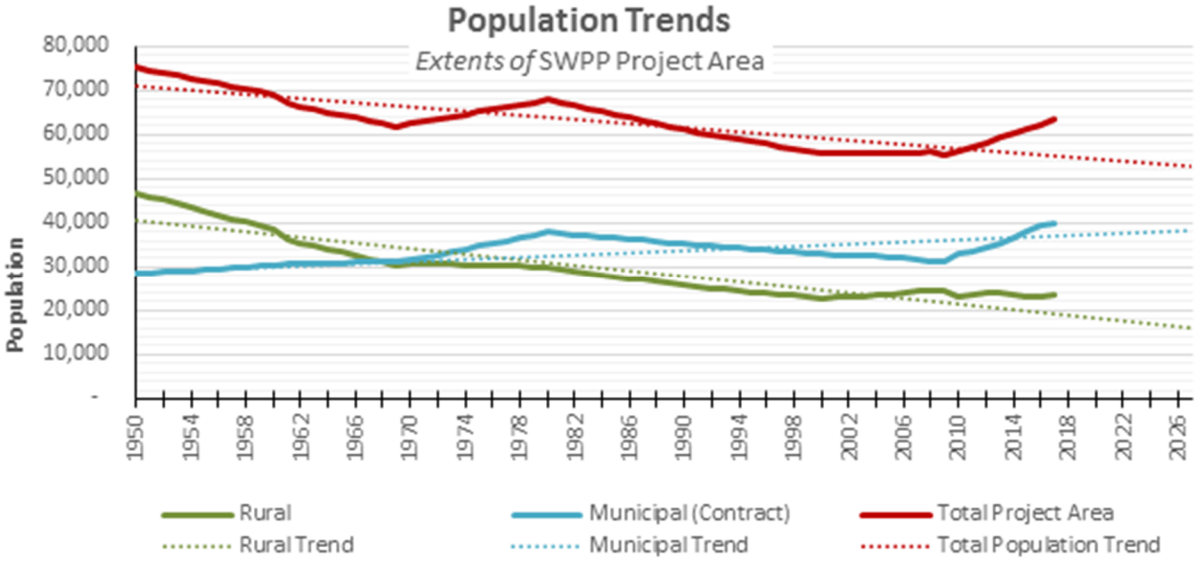
Figure 2 Total Population



Population trends are shown in **Figure 3** where the change from rural to municipal becomes even more evident. A linear trendline of each user group is projected using the entire dataset. However, the current 10-year trend of total population is positive. The rural population consistently trends downward from 1950 through the late-1990's and has remained relatively stable since about 1998.

Municipal population increased to an inflection point of about 37,800 in 1980, after which it declined until 2009. The long-term annual population growth rate since 1950 is approximately 0.5%. Since 2009 the municipal populations have been growing at approximately 3.1% per year.

Figure 3 Population Trends



The Capital Repayment for contract users is based on consumption and is therefore dependent on municipal population trends. The updated Capital Repayment Model conservatively assumes a continuation of the long-term municipal population trend from 1950 to the present of approximately 0.5% and a stable rural population. This equates to population growth of approximately 175 people per year throughout the project area.

2.3.2 Individual Rural Services Projections

Capital repayment from rural users is based on the number of accounts, and therefore not a direct function of population trends. The number of rural services depends on rural housing units, pastured livestock, and other rural commercial agriculture water demands. Rural service began in 1992 and new rural service areas continue to be added each biennium depending on State funding from the RTF.

SWPP defines individual rural service into four main categories including Standard Service, Pasture Taps, High Consumption, and Seasonal. A current breakdown of types of services is shown in **Figure 4**. Trends of cumulative rural accounts (net of disconnects) through 2019 are shown in **Figure 5**.

The SWC anticipates the addition of 4,000-6,000 new rural accounts, including all types by project completion in 2029, or around 500 per year. This approximation was based on a comparison between billing records and 911 addresses within the project area. At the current Capital Repayment Rate of $36.97 per account per month, this would result in an increased annual capital repayment in 2019 dollars of approximately $1.8 – $2.7 Million from new rural services.

Figure 4 SWPP Rural User Breakdown

7,194 Total Services (2019)

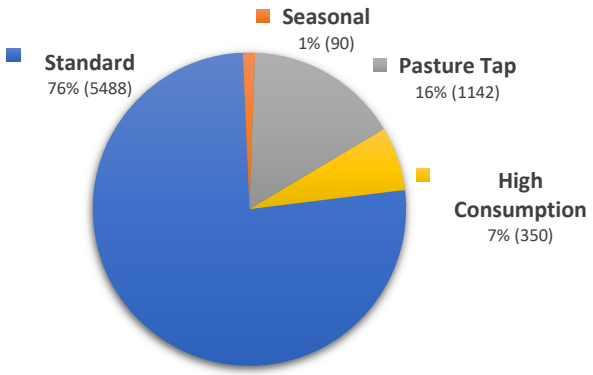
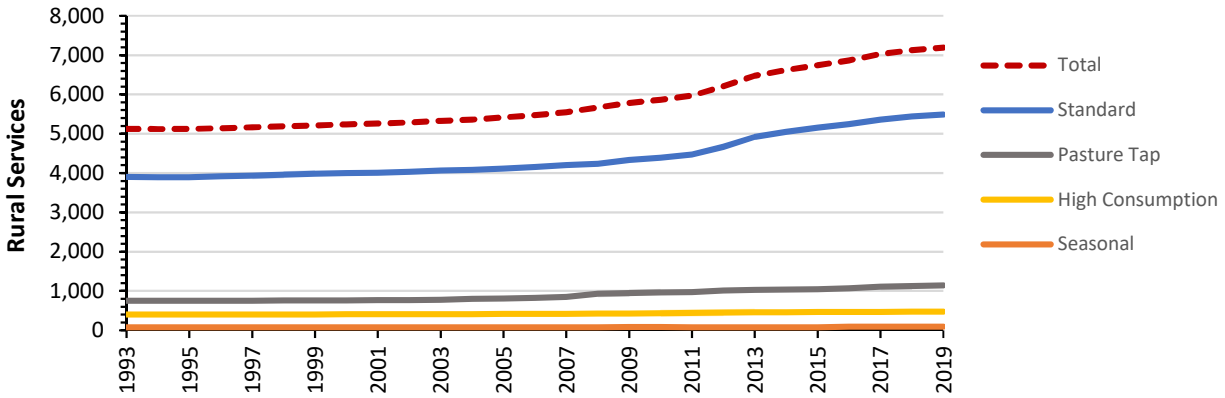


Figure 5 SWPP Rural Service Trends

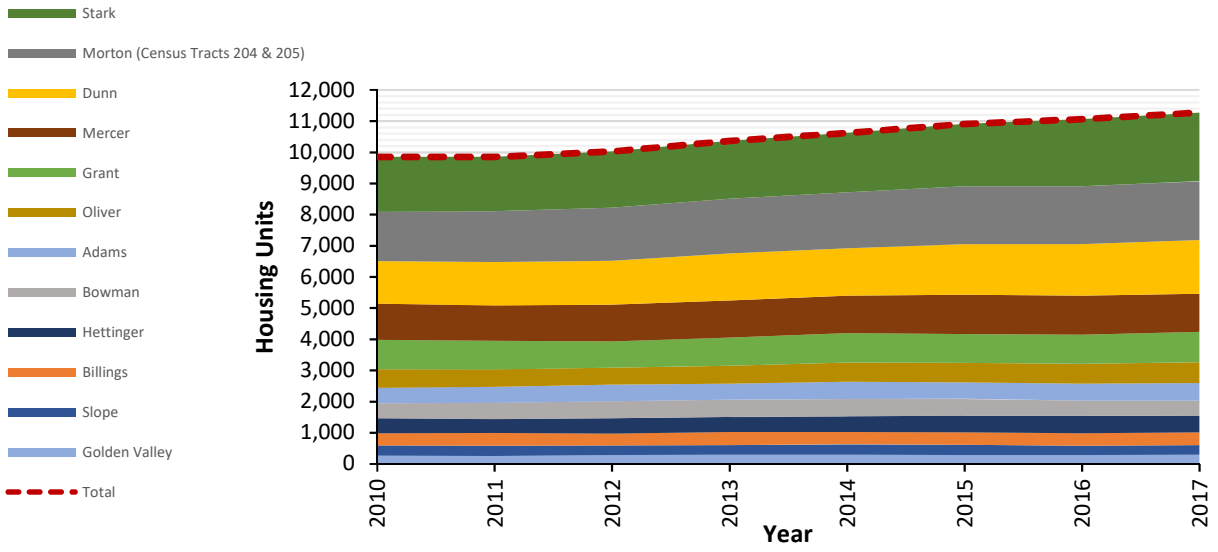
(Cumulative, Net of Disconnects)



The updated Capital Repayment Model uses an alternative method of approximating the magnitude of new accounts by attempting to forecast growth of rural accounts by account type. SWA classifies rural dwellings, trailers, or places of business as Standard Rural Services. Thus, it is reasonable to compare the count of standard services with the number of rural housing units in the project area to approximate market penetration and, ultimately, the potential for added accounts. **Figure 6** shows an annual count of rural housing units in the SWPP project area, by county, from 2010 to 2017. The number of rural housing units in 2017 was 11,200. Morton County excludes Census Tracts 201-203 which are associated with Mandan and the surrounding area which are outside SWPP service boundaries.

Figure 6 Rural Housing Units

SWPP Project Area, by County



The current trend in rural housing units is positive despite steady to declining rural population estimates. The average number of rural housing units in the SWPP service area from 2010 to 2017 is 10,497, as shown in **Figure 7**. The number of rural housing units is estimated to stabilize in the future at around 11,750, as shown in **Figure 8**. This is compared to the current count of Standard Services in 2019 of 5,488 as shown in **Figure 4**. This suggests a market penetration of approximately 52% for standard rural services, based on the average number of housing units.

Figure 7 Rural Housing Units by County

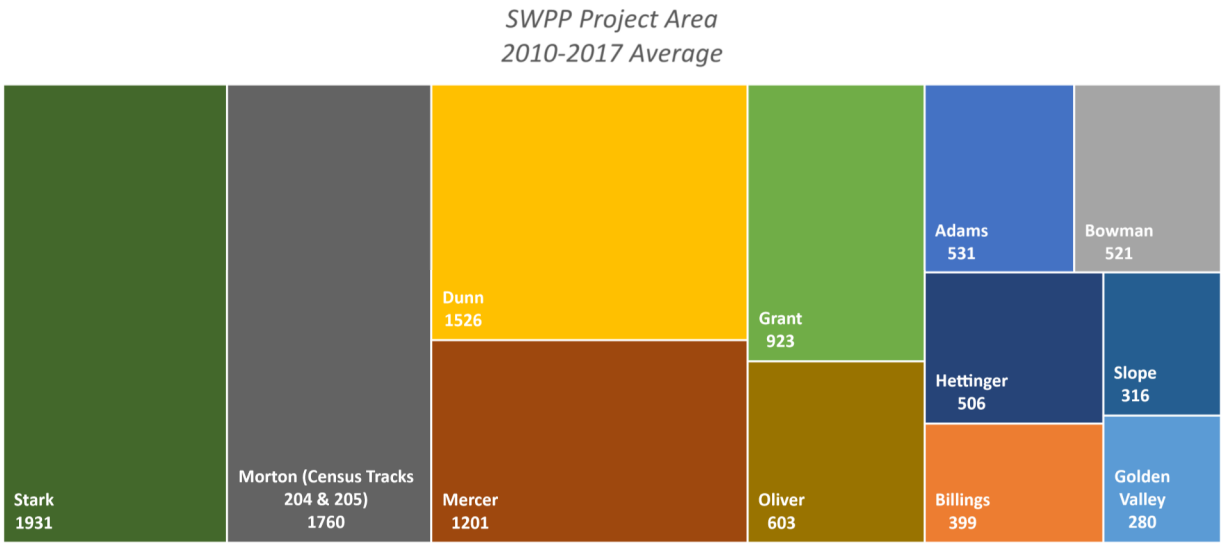


Figure 8 SWPP Projected Standard Rural Services

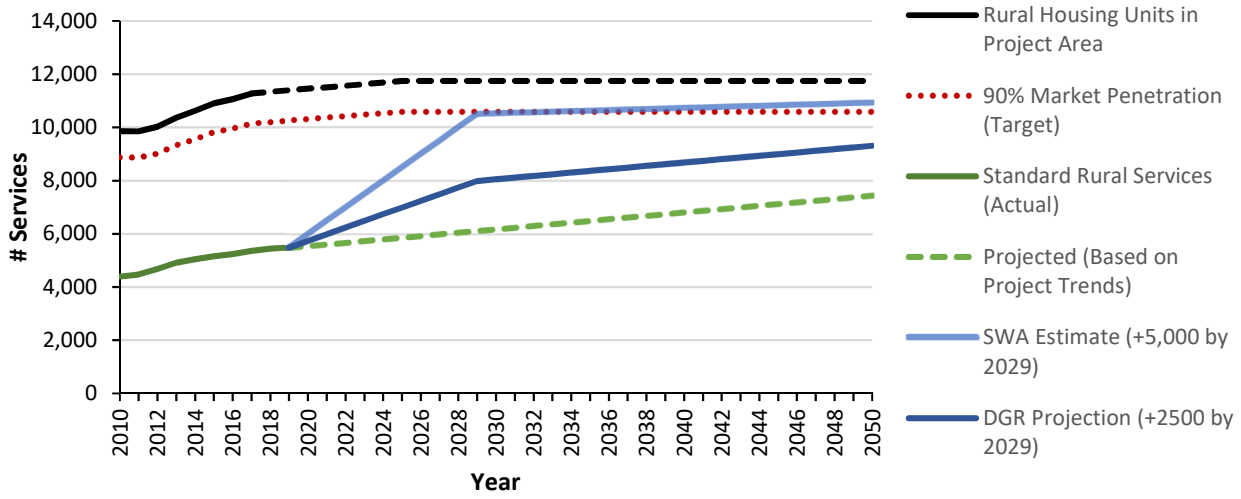


Figure 8 provides an illustration of various methods to project Standard Rural Services. The midpoint of SWA's estimate for additional services is 5,000 over the next 10 years and is a close approximation to a 90% market penetration of the Rural Housing Units in the project area. However, the maximum standard services added to the system in any given year so far is only 255. Therefore, the model conservatively anticipates the actual number of new standard services added in the next 10 years to be comparatively modest at +2,500. In comparison to fully built systems with policies that actively encourage new customers, the model estimates that 90% is a reasonable target for market penetration for long-term planning. However, it will likely take more than 10 years to develop.

The model estimates the same percentage of rural services as the existing system. Therefore, the model includes the following new services each year for the next 10 years.

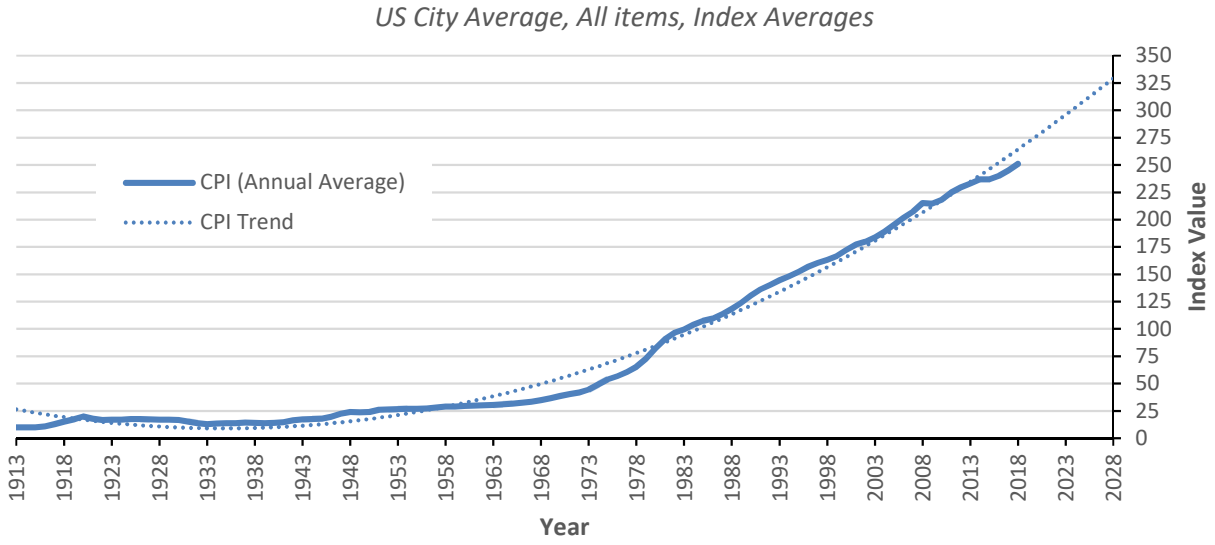
Standard Service: +250/year
Pasture Tap: +53/year
High Consumption: +23/year
Seasonal: +4/year
TOTAL = 330/year

The updated Model shown in **Figure 8** estimates 10,430 Individual Rural Services (all types) by 2029, assuming 90% market penetration. We conservatively estimate an approximate annual growth of approximately 0.5% thereafter or about +50/year.

2.3.3 Consumer Price Index

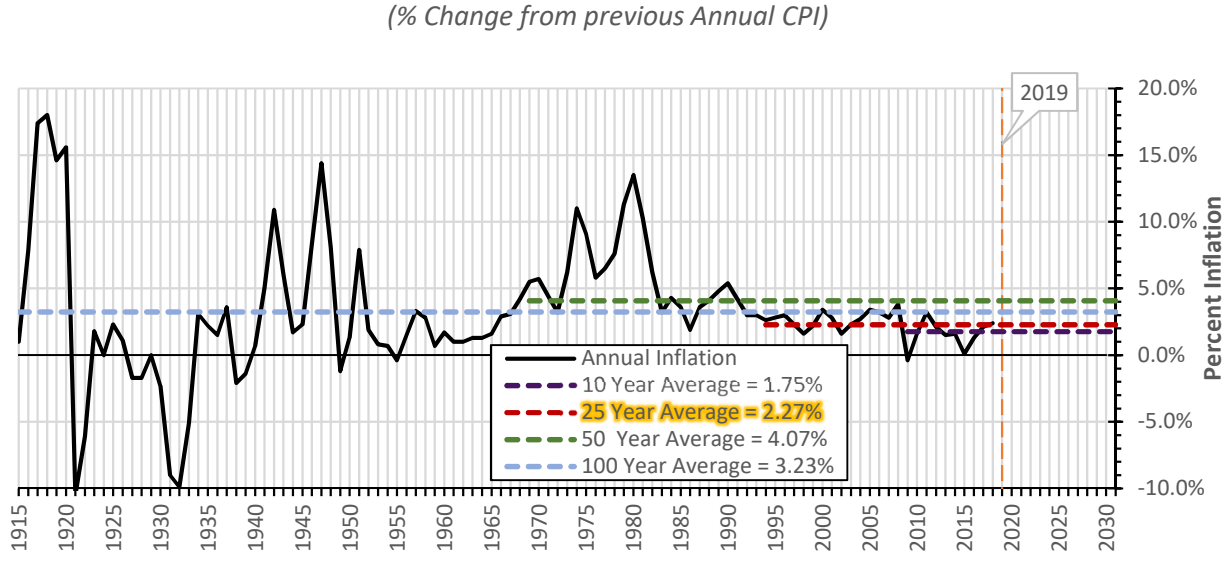
A Consumer Price Index (CPI) measures changes in the price level of a market basket of consumer goods and services purchased by households. The annual percentage change in a CPI is generally used as a measure of inflation. Thus, the CPI can be used to index the real value of wages and to deflate monetary magnitudes to show changes in real values. It is also a commonly used means of price regulation, as is the case with the current SWPP capital repayment model. Annual CPI data for all urban consumers (CPI-U) from 1913 to present is summarized in **Figure 9**.

Figure 9 Historical CPI for All Urban Consumers (CPI-U)



Percent change from previous annual CPI is shown in **Figure 10**. Inflation has varied wildly over the 100+ years of data collection, however it has shown less volatility since the mid-1980s. The updated capital repayment model utilizes a 25-year average for annual inflation, or 2.27%. The 25-year average value was chosen as it most closely aligns with the SWPP project timeline.

Figure 10 Average Annual Inflation



2.3.4 Water Usage

Per capita water usage amongst the municipal contracts has followed an upward trajectory. **Figure 11** shows the 20-year trend for per capita water usage for SWPP is slightly positive, with a large spike in

2012. The average is 109 gallons per capita per day (gpcpd) and a maximum of 144 gpcpd. The updated capital repayment model utilizes a fixed per capita water usage of 120 gpcpd for contract customers.

Figure 11 Municipal Water Usage

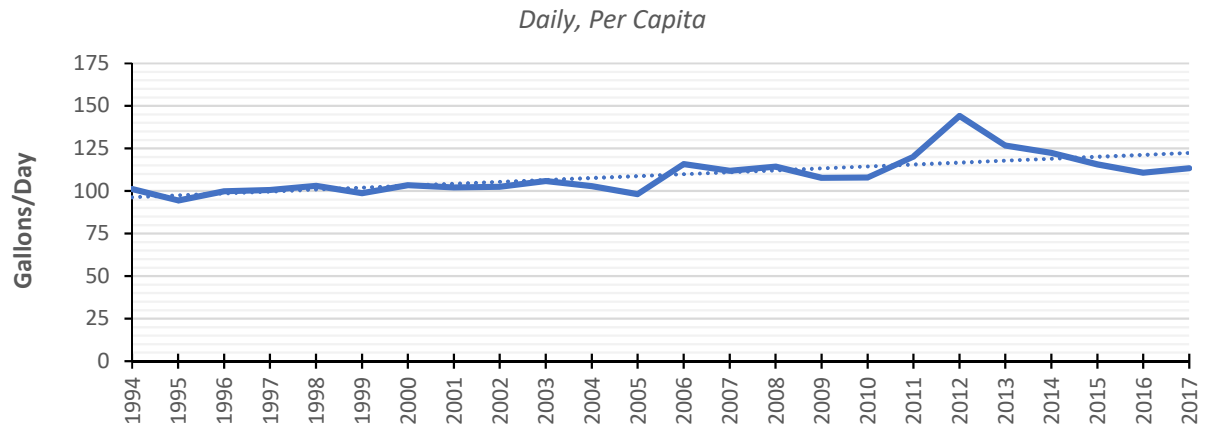
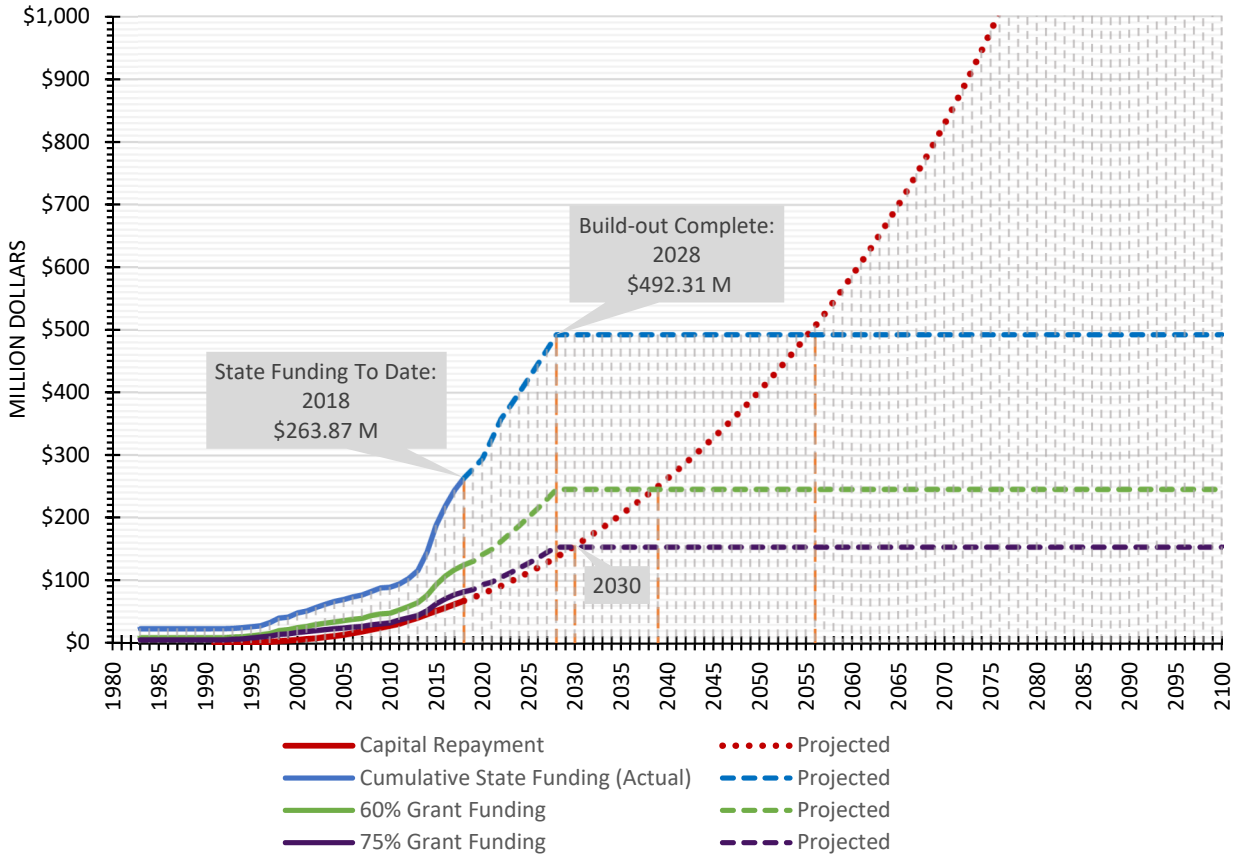


Figure 12 Cumulative State Funding vs. Capital Repayment



2.3.5 Forecast Results

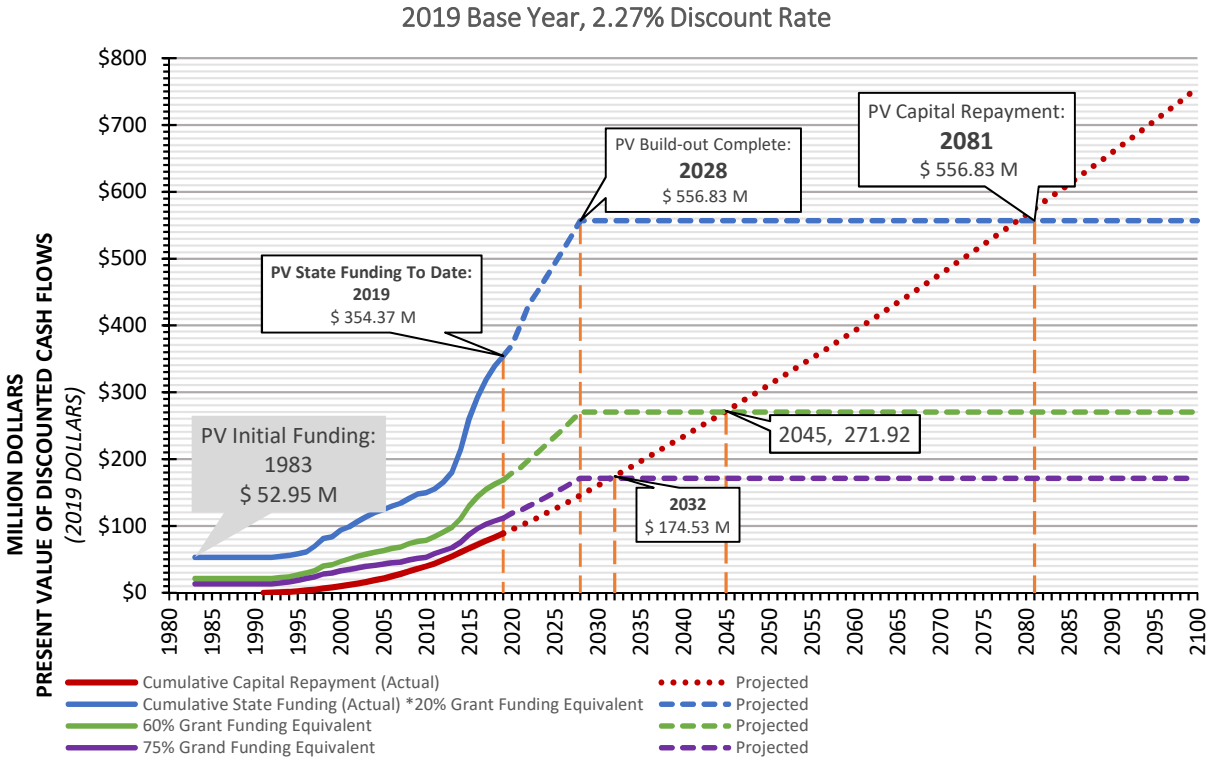
In July of 2018, SWC Staff prepared an Ownership Transfer Memo in which they developed a Capital Repayment Model. This Capital Repayment model was updated with the inputs previously described in this report and shown in **Figure 12**.

The model shows total cumulative project funding excluding grants. Current grants represent approximately 32% of project funding to date. However, future project funding is expected entirely from the RTF, which reduces the overall grant percentage without State cost share to approximately 20%. Additional lines are provided for reference showing project funding assuming State cost-share to achieve 60% grant funding or 75% grant funding. Finally, the cumulative capital repayments from all SWPP customers are shown.

In general, the models are very similar in the early years and both predict repayment of project funding with a 75% grant in 2030 and a 60% grant in 2039. The updated model includes several growth-related additions that the previous model did not. Most of the assumptions have remained relatively conservative. Nonetheless, the updated model predicts full repayment of State funding by 2056, approximately 10 years earlier than the previous model. It is noted that financial projections made this far into the future are highly speculative and lack much precision.

Due to the time-value of money, early investments and future capital repayments have been adjusted to present values. A version of the Capital Repayment model is shown in **Figure 13** that adjusts project spending and capital repayments to present value in 2019.

Figure 13 Cumulative State Funding vs. Cumulative Capital Repayment



The results show that the “payback” is generally delayed a few years under the State grant funding scenarios compared to the nominal dollars chart of **Figure 12**. Full repayment of the State funding in adjusted dollars is delayed until approximately 2081.

3.0 Capital Finance Plan Used by Each System

Each of the regional water systems were developed for different reasons and had vastly different stakeholders during their development. Furthermore, federal authorization and support has varied for each of the systems. Therefore, the customer base is different as well as the capital financing models and rate structures for each system.

This section provides a summary of the capital financing plan used by each major regional water system in North Dakota and a brief look at other rural water and municipal systems.

3.1 Northwest Area Water Supply

The Northwest Area Water Supply (NAWS) was authorized under the Garrison Diversion Reformulation Act of 1986 and received funding through the Municipal, Rural and Industrial (MR&I) Grant Program. The project financing model was set up for 35% local share and 65% federal share through the MR&I Grant Program.

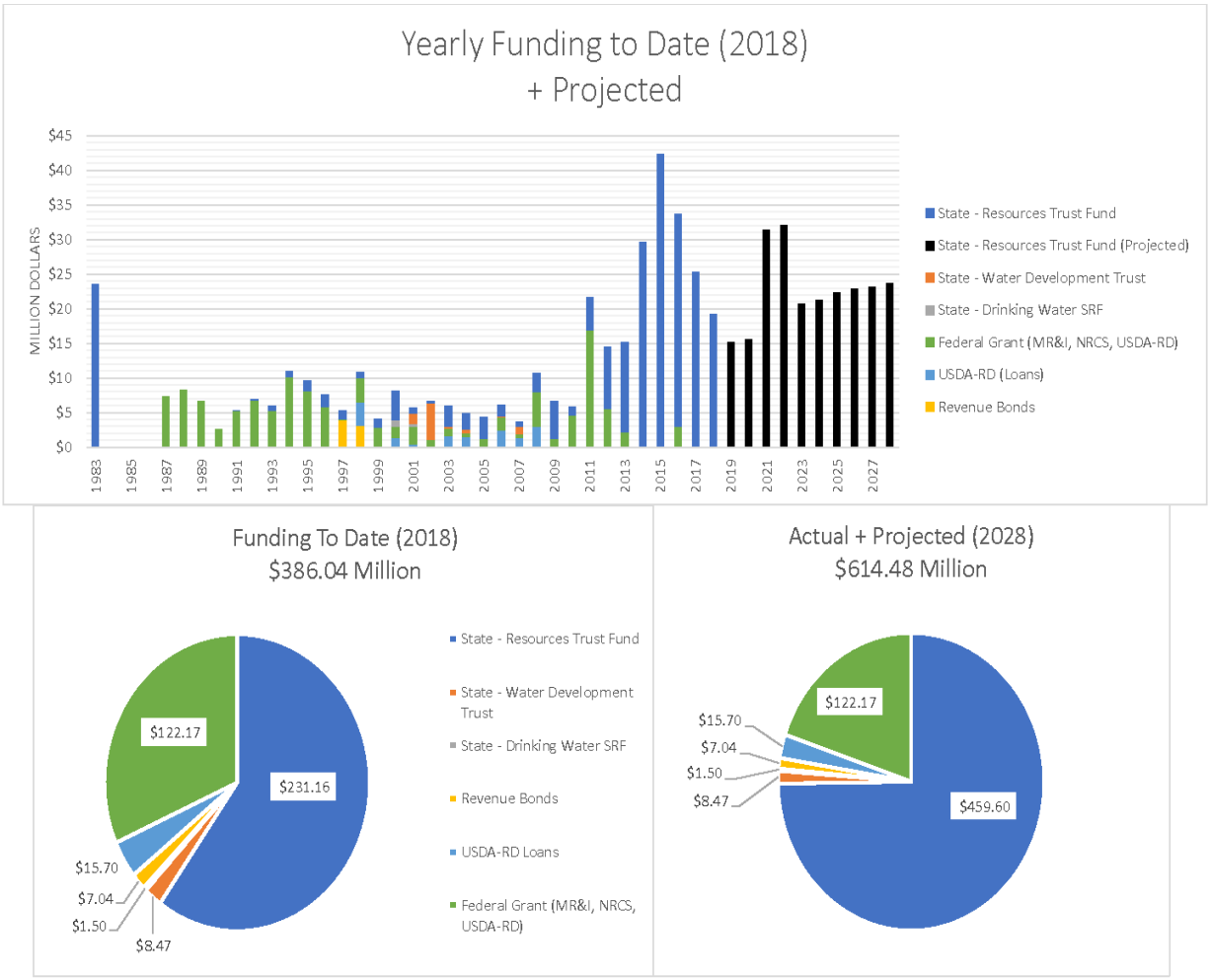
Legal challenges from the Province of Manitoba and the State of Missouri put some of the project on hold. However, NAWS received approval to construct some portions of the project, and the City of Minot provided the local share. The SWC has provided most of the federal share for these interim construction projects.

Based on discussions with SWC staff involved with NAWS, they anticipate the project financing model to maintain the 35% local share. However, the remaining 65% of the project funds will be split between state and federal cost sharing or grants. The specific distribution is not known at this time but won't have an impact on customer rates.

3.2 Southwest Water Pipeline Project

The Southwest Water Pipeline Project (SWPP) was authorized in 1981. A detailed capital financing plan used for the SWPP was described previously in Section 2. The specific distribution of source funds is presented in **Figure 14**. State and Federal funding provided all the project funds at the time it was used. The local share is provided according to a Capital Repayment model established as an ability to pay model developed in a 1982 report by Chiles, Heider & Co. report (Heider Study).

Figure 144 Capital Repayments by Customer Class 1991 - 2018



The current capital repayment model was used to repay all loan and bond requirements associated with the project. Current annual repayments are directed to the Resources Trust Fund (RTF). The capital repayments are expected to continue in perpetuity, generally providing the RTF with additional funds to be used on other projects as the SWC defines their priorities. Over time, and under the current capital repayment model, the entire balance of state funds will be returned to the RTF.

3.3 Western Area Water Supply

The Western Area Water Supply (WAWS) was established after the 2011 Legislative Session and was originally conceived as a public-private partnership that would provide potable water service to five rural water systems in the area. It would also sell surplus water to the oil industry, which was rapidly expanding at the time.

Initial project funding was provided entirely as loans. Revenue from oil industry sales was expected to repay the loans. Lower than projected revenues from water sales in the area has diminished their ability to repay the loans from this revenue source. Recent project funding has been provided by the state

between 33% and 75% cost share. Funding over the next 10 years is currently proposed at 75% cost share from the state.

A current breakdown of the funding sources for the NAWS, SWPP and WAWS is shown in the Appendix B.

3.4 Red River Valley Water Supply Project

The Red River Valley Water Supply Project (RRVWSP) proposed to protect North Dakota from severe drought by transporting water from the Missouri River in the central part of the state to the Sheyenne River in the eastern part of the state. The project was conceived as a federal, state, and locally funded project. However, at the time of this report, the project has yet to receive federal authorization. Current funding for the preliminary development work is proposed as 75% cost share from the state and 25% from local entities.

3.5 Rural and Municipal Water Systems

Program guidelines within the SWC currently allow up to 60% cost share for municipal systems and up to 75% cost share for rural water systems. It is the responsibility of the water utility to provide the local funds. Various funding sources are available, including the Bank of North Dakota, USDA Rural Development, State Revolving Loan funds, revenue and general obligation bonds.

3.6 Advantages and Disadvantages of the Capital Finance Plans

One primary difference between capital financing for the SWPP and all other systems in the state is the fundamental disconnect of the water revenues from project costs. This was a significant benefit to the customers during the initial development as the current customers had a defined cost that was indexed to their ability to pay. Adjustments to the initial rate were made due to the diminished economic condition of the service area. Growth of the customer base, an increase in economic conditions, and the addition of individual rural customers to the project scope have all contributed to the project success. Current municipal customers pay a lower percent of their per capita income for capital repayment than originally projected in 1982 when the rate was developed. However, this capital repayment model has some long-term implications that will ultimately result in higher water rates to the project customers when compared to other similar systems. With this model, the state is the beneficiary of growth within the project area.

The capital financing for all other systems has recognized that water utilities in rural areas are not self-sufficient and require significant subsidy to be affordable to the end user. However, when capital financing is set up as a termed loan, two factors make it very difficult during the early stages.

1. Debt terms usually do not extend as far as the useful service life of the asset.
2. The initial customer base making the debt payments is low compared to the future customer base.

These two factors represent a development hurdle as the costs for initial customers are relative higher than they will be as the utility matures. Because debt payments remain constant throughout the life of

the loan, as the customer base expands, water rates typically do not increase as much as incomes and the rate payers can usually expect a benefit over the long-term. This is experienced as an increase in purchasing power with water rates making up a smaller and smaller percentage of the utility's income over time. In this manner, the rate payers are the beneficiary of growth within the project area.

Finally, there was a significant difference for the early development of the WAWS. Due to the economic condition of the oil industry when the project was conceived, stakeholders moved quickly to capture the attention and revenue of this temporary condition. Without continued revenue from this source or federal cost assistance, the project will remain dependent upon state cost share as local contribution from customers will not be self-sustaining.

4.0 Governance Models for Regional Water Systems

There are three large regional water systems currently in operation in North Dakota; Southwest Pipeline Project, Western Area Water Supply, and Northwest Area Water Supply. A fourth system has been set forth in the North Dakota Century Code (NDCC) to serve the Red River Valley and surrounding areas, but the system is still in the design phase. How it will operate and what entities will participate have yet to be determined. Each of the existing systems were formed at different times to service the different needs of their specific areas. As a result, each system's governance model is unique.

4.1 Southwest Pipeline Project

The Southwest Pipeline Project (SWPP) was created under the NDCC Chapter 61-24.3. It was established to provide for the supplementation of the water resources from the Missouri River for multiple purposes, including domestic, rural, and municipal uses. The SWPP is intended to serve the area of North Dakota west and south of the Missouri River. The SWPP was originally implemented to serve the following counties; Dunn, Stark, Golden Valley, Billings, Slope, Bowman, Adams, Grant, Oliver, Hettinger, Morton, and Mercer. The Southwest Water Authority (SWA) was created in the NDCC Chapter 61-24.5 to manage the system, while the State retains ownership of the project. The SWA is governed by a board consisting on one member from each of the above counties, two members from the City of Dickinson, and one member from the City of Mandan. The board members are elected in the City/County elections for a term of four years. The SWC currently owns the SWPP and constructs additional pipelines. The SWC sets the Capital Repayment rate and approves the other rates set by the SWS. The SWA plays the role of the local sponsor for the SWPP. The SWA operates and maintains the system and collects moneys.

4.2 Northwest Area Water Supply

The Northwest Area Water Supply (NAWS) project was created under the NDCC Chapter 61-24.6. It was established to provide for the supplementation of the water resources from the Missouri River for northwestern North Dakota. The NAWS serves the following counties; Bottineau, Burke, Divide, McHenry, McLean, Montrail, Pierce, Renville, Ward, and Williams. The SWC sets the rates. NAWS owns, operates and maintains the system. The NAWS is governed by a board consisting of members appointed by the State Engineer from the following entities:

- One person from the City of Minot
- One person from the City of Williston
- One person from the water resource districts in the above counties
- One person from the SWC
- One representative from the Three Affiliated Tribes
- One representative from the rural water distribution systems in the above counties
- One representative from a municipality other than Minot
- One representative from the Garrison Diversion Conservancy District
- One at-large representative

4.3 Western Area Water Supply

The Western Area Water Supply (WAWS) Authority was created under NDCC Chapter 61-40. It was established to provide for the supply and distribution of water to the people of western North Dakota for purposes including domestic, rural, municipal, livestock, industrial, oil and gas development and other uses. The WAWS serves the following counties; McKenzie, Williams, Burke, Divide, and Mountrail. The WAWS is governed by a board consisting of two representatives from the following entities; Williams Rural Water District, McKenzie County Water Resource District, City of Williston, BDW Water System Association, and R&T Water Supply Association. Board members are appointed by the governing boards of each entity for a 1-year term. The WAWS owns, operates, and maintains the system. The WAWS sets its own rates. The SWC approves the planning, location, and water supply contracts of any authority depots, laterals, taps, turnouts, and risers for industrial users. The WAWS follows the SWC requirements for funding and presents an overall plan to the SWC for funding approval.

4.4 Red River Valley Water Supply Project

The Red River Valley Water Supply Project (RRVWSP) was created under NDCC Chapter 61-24.7. it was established to provide water of enough quantity and quality for various uses in the Red River Valley, specifically as a supplemental water supply in times of drought. The NDCC states that the legislature intends to provide State funding for a share of the construction of the RRVWSP. At the time of this report, a governance model of the RRVWSP has not been determined. However, it will be owned by the Garrison Diversion Conservancy District (GDCD). The GDCD will also operate and maintain the system. The Lake Agassiz Water Authority has been created to acquire bulk water from the GDCD/RRVWSP and supply water to eastern and central North Dakota and western Minnesota.

The governance models of the large regional water systems are summarized in **Table 2**.

Table 2 Governance Model Summary

	Counties Served	Board Members	Terms	How Elected	SWC Role
SWPP/SWA	·Dunn ·Stark ·Golden Valley ·Billings ·Slope ·Bowman ·Adams ·Grant ·Hettinger ·Morton ·Mercer Oliver	·1 from each county ·1 from Mandan ·2 from Dickinson (15 total)	4 years	City/County Elections	·Owns SWPP ·Manages Construction of SWPP ·Sets Rates
NAWS	·Bottineau ·Burke ·Divide ·McHenry ·McLean ·Mountrail ·Pierce ·Renville ·Ward ·Williams	·1 from Minot ·1 from Williston ·1 from each Water Resource District (10 total) ·1 from SWC ·1 from Three Affiliated Tribes ·1 from each Rural Water District (10 total) ·1 from a city other than Minot ·1 from Garrison Diversion Cons. ·1 “At-Large” (27 total)	As determined by the State Engineer	Appointed by the State Engineer	·Approves Rates ·Sets Capital Repayment rate ·State Eng. Appoints Board
WAWS	·McKenzie ·Williams ·Burke ·Divide ·Mountrail	2 representatives from each: ·Williams Rural Water District ·McKenzie Rural Water District ·City of Williston ·BDW Water System Assoc. ·R&T Water Supply Assoc. (10 Total)	1 year	Appointed by governing boards of each member org.	SWC approves funding
RRVWSP	TBD	TBD	TBD	TBD	TBD

5.0 Alternatives to the SWPP Capital Repayment Program

Regional water utilities in North Dakota have a unique funding opportunity in the RTF. The State recognized the opportunity to collect revenues from a non-renewable resource through the OET and reinvest those dollars in a renewable resource that benefits the citizens of North Dakota.

The SWPP is also uniquely structured such that the local share is returned to the RTF through the Capital Repayment program described in this report. Other water systems seeking development or improvement projects are provided with a defined cost-share grant and/or termed debt payments.

This type of capital repayment approach provides a critical advantage during the initial development phase. Namely, the capital repayment is based on actual consumption and indexed to customers' ability to pay and the State assumes the risk related to how long it takes for demands to develop to a point of become self-sustaining, or at least self-sustaining with an acceptable level of subsidy. This investment during the early development phase of a regional water supply is critical in most circumstances, particularly in economically depressed areas.

However, the current capital repayment model also has some negative long-term implications to customers that were previously discussed in Section 2. Therefore, the SWC requested development of alternative capital repayment models that may be available to the SWPP customers.

5.1 Alternative Capital Repayment Models if Ownership is Retained by the SWC

5.1.1 Alternative 1 – No Change

The "No Change" Alternative would maintain the existing capital repayment model, resulting in a perpetual annuity with escalating payments for the benefit of the State. This is advantageous to the State as surplus funds from this project will be available for other projects within the State.

Current SWPP customers would continue to pay capital returns to the State even after the assets provided by the State are retired from service. Furthermore, current SWPP customers will prepay for replacement assets through the REM fund. Ultimately, the rates that SWPP customers pay will exceed the cost to provide that service. Correspondingly, SWPP customers will be paying significantly higher rates compared to similar systems, deviating from the original intent of the repayment model.

5.1.2 Alternative 2 – Assume State Cost-Share Percentage

The SWC provides cost-sharing opportunities for rural and municipal water supply projects up to 60% or 75%, depending on project eligibility. It is reasonable to assume that State cost-share would also be available for SWPP customers.

At some point, the SWPP will have generated Capital Repayments equal to pay back the State's investment, less any cost-share allowance. Once the "payback" has been reached, capital repayments to the RTF could be terminated. **Figure 13** illustrates an effective 2.27% return during the payback period, which may be assumed to fairly compensate the RTF for the original investments.

Future replacements and capital improvements could be funded through the RTF and subject to the terms consistent with other systems. Debt service payments could be made with REM revenues rather than pre-funding capital improvements.

5.1.3 Alternative 3 – Utility Basis Method of Accounting for Capital Costs

The American Water Works Association (AWWA) promotes the use of cost-based rates and provides guidance in Manual M1 – Principals of Water Rates, Fees, and Charges. Within this manual, two methods are described to account for capital costs. The Cash-Needs Method and the Utility-Basis Method.

The alternatives described so far most closely align with the Cash-Needs Method in which customers pay capital costs based on debt service payments and rate-funded capital outlays.

The Utility-Basis Method is more common for investor-owned utilities or those utilities whose rates are regulated by a public utilities commission. This method is discussed because it provides an interesting perspective of the State as an Investor-Owner of the water utility. This is also worthwhile to investigate as it relates to what reasonable return the State should anticipate given the constraints applied to other Investor-Owned utilities in the State.

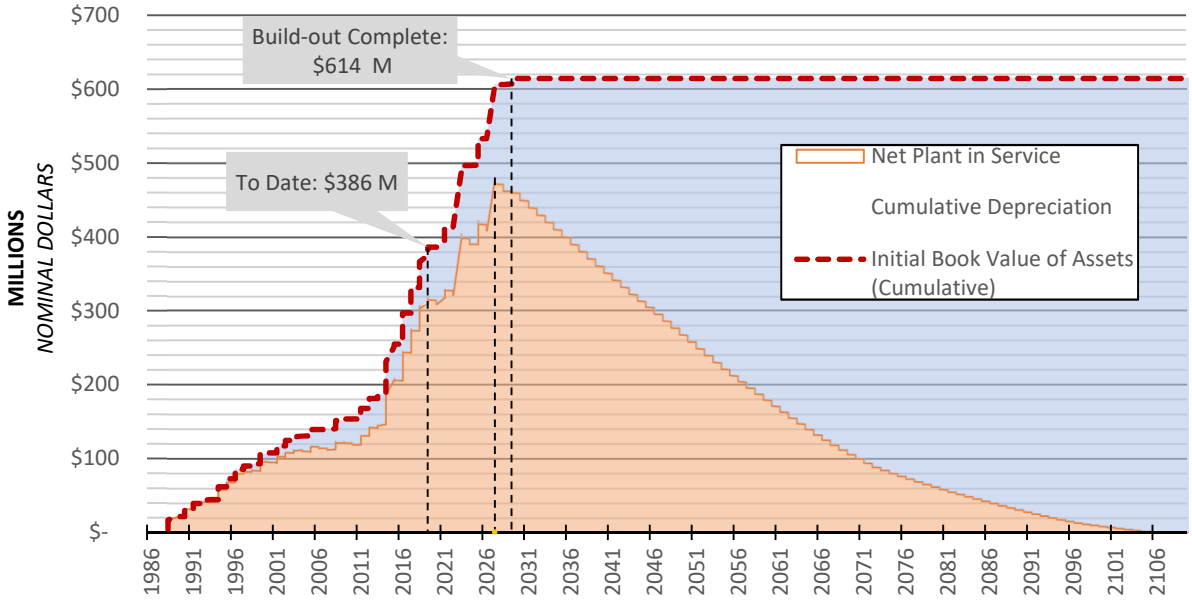
Under the Utility-Basis Method, capital costs are estimated based on annual depreciation of the assets and a Rate of Return applied to the Rate Base or Return on Investment (ROI). The Rate Base is generally the Net Plant In Service, or the value of assets dedicated to public service.

Figure 15 was developed to demonstrate the concept of the Utility Basis Method as it applies to the SWPP. Neither the SWC nor the SWA maintain SWPP assets on a balance sheet, nor are depreciation expenses accounted for in either of their annual expenses. For purposes of this analysis, depreciation rates are assumed to be similar to service lives based on asset classes rather than generally accepted accounting principles. For example, water transmission and distribution lines were depreciated using straight-line methods over 80 years while Telemetry and Controls were straight-line depreciated over 15 years. Using this method, the annual depreciation is estimated at $6.2 M in 2019.

With an estimated rate base of $318 M and a low-risk rate of return corresponding with the CPI rate used for other projections in this study of 2.27%, the ROI in 2019 would be $7.2 M. Alternatively, using the expected returns for the Existing Capital Repayment Model of $5.4 M, a rate of return of 1.7% is calculated. The rate base could be reduced by cost-share allowances consistent with other rural and municipal projects funded through the RTF.

Figure 155 Net Plant in Service

(No Reinvestment Post-2029)



5.2 Alternative Capital Repayment Models if Ownership is Transferred to the SWA

5.2.1 Alternative A – No Change

If Ownership is transferred to the SWA, the State Legislature could require that capital repayments continue according to the existing model. However, without an ownership stake and without future participation in capital financing, the capital repayments would be better described as a tax. It would function similar to the OET and generate funds for the RTF, but at a much higher rate. The capital repayment rate as a percent of total revenues for SWA is approximately 35% - 40% depending on sales within various customer groups.

5.2.2 Alternative B – Termed Debt

At the time of the ownership transfer, the difference between the cumulative State funding and the cumulative capital repayments as shown in **Figure 12** or **13** could be calculated and designated as the outstanding balance, reduced by any State cost share. The outstanding balance could be transferred to a termed USDA RD Loan or converted to termed debt through the RTF.

The current annual capital repayments of approximately $5.4M - $5.8M per year would service debt of approximately $125M - $130M based on standard SRF terms of 2% for 30-years. When added to the cumulative capital repayments to date of $68.1M, the total payments to the RTF could be $193.1 M - $198.1 M, or about 75% of the State's investment to date of $263.87M.

5.2.3 Alternative C – Benchmark the Capital Repayment to Industry Standard

The AWWA publishes results of annual benchmarking surveys in the water industry. Two benchmarks which are appropriate to this discussion include the Return on Assets (%) and System Renewal and Replacement (%). Survey data is summarized in several ways, including national and regional estimates. Region III of the study includes IA, IL, IN, MI, MN, ND, OH, SD, WI, and Ontario.

The Return on Assets (%) (ROA) is defined as the Net Income / Total Assets. The System Renewal and Replacement (%) (R&R) is defined as the Amount of Funds Reserved for R&R / Present Worth of Assets. While there are some differences between Total Assets in one calculation and Present Worth of Assets in the other, the precision of the data would not benefit from differentiating between the two in this analysis.

The median ROA for Water Utilities in Region III is 2.4%. For small communities serving populations less than 50,000, the ROA is 2.0%. Multiplying this percentage times the present value of the State investment of $354.37 M shown in **Figure 13** results in an Annual Return between $7.1 M and $8.5 M.

The median R&R is listed by asset class, but generally ranges between 0.6% for Transmission and Distribution Pipes to 0.9% for Water Pumping Facilities. A weighted average of 0.75% was used based on the mix of assets in the SWPP. Performing a similar calculation to that above results in an Annual R&R of approximately $2.7 M.

6.0 Water Rates

6.1 Review of Existing Rates

For all contract customers, capital repayment is based upon a per- 1,000 gallon charge. For all rural customers, capital repayment is a portion of the monthly minimum payment. A small fraction of contract customers are classified as oil industry, and are charged a different rate. All capital repayment is assessed, collected, and remitted to the SWC on a monthly basis. Current rates are shown below in **Table 3**. A graphical history of contract and rural capital repayment rates is shown in **Figures 16** and **17**, respectively.

Table 3 Capital Repayment by Customer Class

Account Type	2018	2019	
*Raw, Contract	$ 1.18	$ 1.21	/1,000 gallons
Demand	$ 2.36	$ 2.42	/1,000 gallons
Oil	$ 7.33	$ 4.00	/1,000 gallons
*Rural			
Standard	$ 36.00	$ 36.97	/month
Pasture Tap	$ 18.00	$ 18.49	/month
High Consumption 1	$ 45.00	$ 46.21	/month
High Consumption 2	$ 54.00	$ 55.46	/month
High Consumption 3	$ 63.00	$ 64.70	/month
*Customers in first two years pay an additional $5/month in Capital Repayment			

Figure 166 Contract Rate

Per 1,000 Gallons

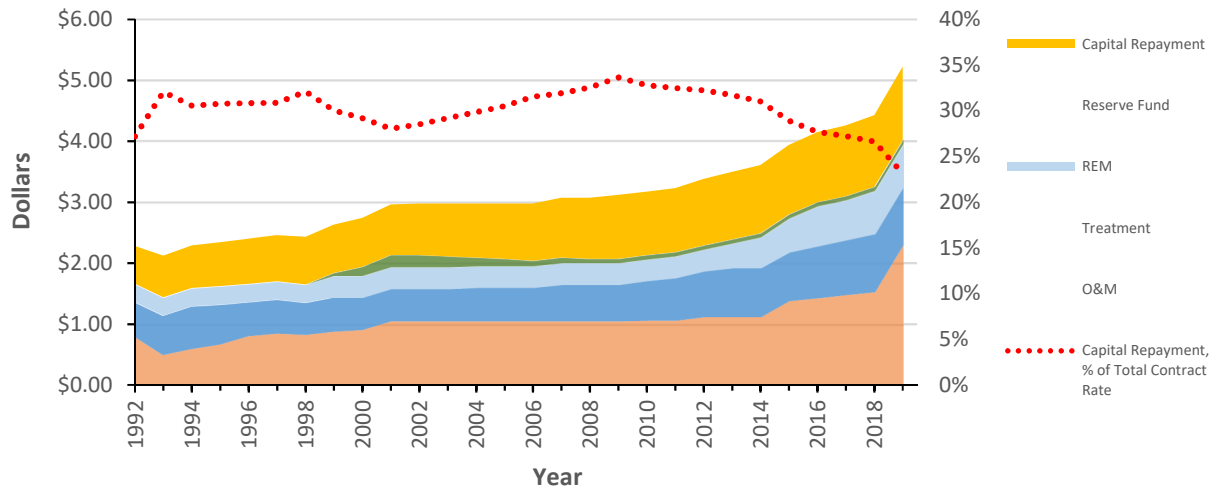
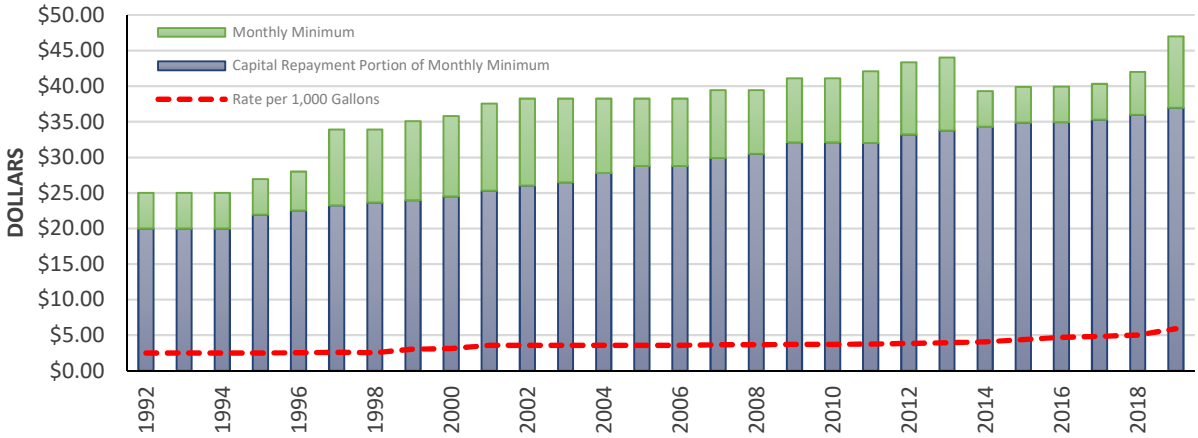


Figure 17 Rural Rate

Monthly, Per Account



Between 1997 and 2013 the monthly minimum included up to 2,000 gallons. This minimum allowance was removed for 2014 and shows a corresponding reduction in the monthly minimum.

6.2 Distribution of Costs by Customer Class

Figure 18 shows the distribution of Capital Repayment between the customer classes. We compare that with annual water consumption by customer class shown in **Figure 19**.

Based on this analysis, individual rural customers pay a significantly higher percentage of capital repayment costs relative to their water usage. While it is likely that the individual rural customers are a more capitally intensive customer group, requiring more miles of pipe to serve each user, it was an interesting finding. The SWC may want to consider a Cost of Service Rate Study if changes are made to the capital repayment model. A Cost of Service Rate Study should determine the relative costs of each customer group and design a rate structure that collects only those costs from the group.

Figure 178 Annual Capital Repayments by Customer Class

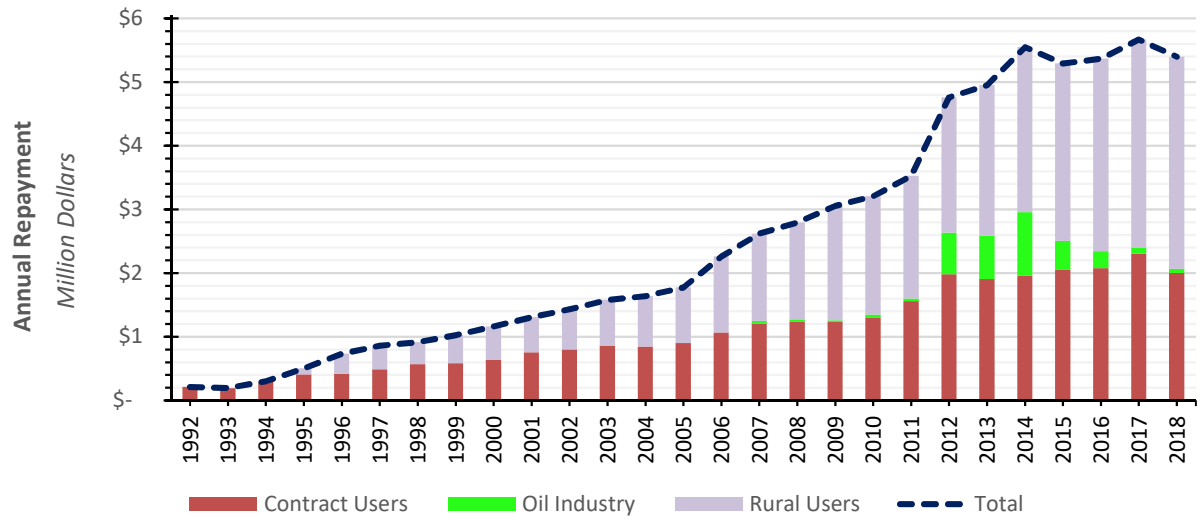
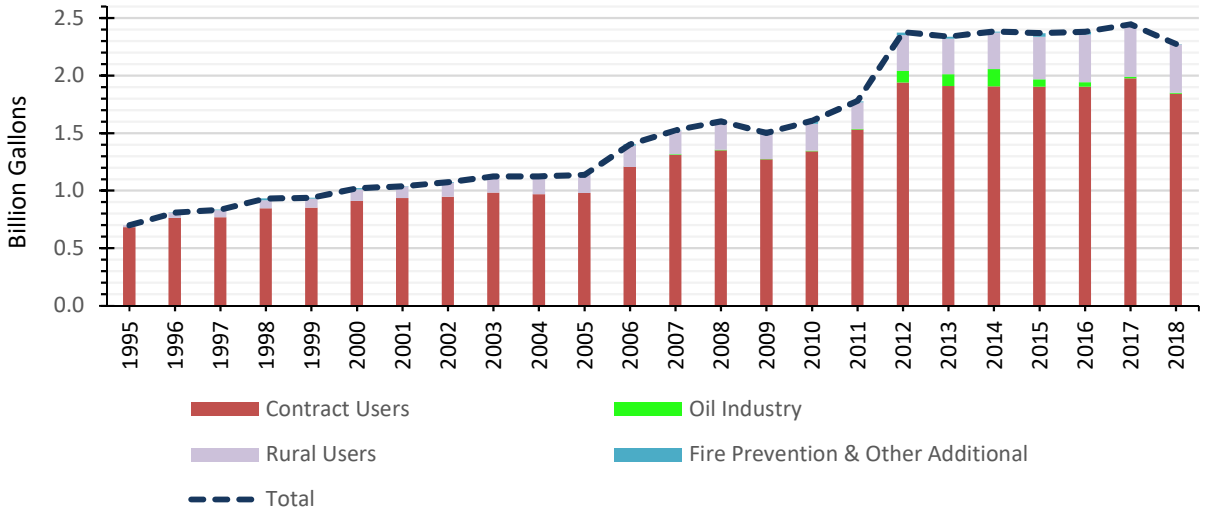


Figure 189 Annual Water Use by Customer Class



7.0 Construction Management

The SWA currently performs operation and maintenance on the SWPP, while the SWC performs engineering and construction management of the SWPP. Ownership transfer of the SWPP would result in additional administrative and engineering duties to be taken on by the SWA or transferred from the SWC.

The SWA would need to hire a Civil Engineer. In addition to aiding in the operation and maintenance of the existing SWPP, this individual would also manage construction of the SWPP. They would be responsible for reviewing and approving construction documents, obtaining necessary permits for construction, maintaining the SWPP construction budget, and administering water supply contracts and agreements.

In addition to an engineer, the SWA would require an engineering technician. This individual would be responsible for maintaining record drawings, coordination with contractors and consulting engineers, and field inspection during construction.

The SWA would also need additional personnel to carry out right-of-way/property acquisition and general office duties associated with the SWPP. One person with the proper skills, or two part time persons, could fulfil these duties.

It is estimated that the SWA would need 3 additional FTE's if Ownership of the SWPP is transferred. The cost is summarized in the following table.

Table 4 Additional Full Time Employees

Additional Work/Personnel	Estimated Cost
Civil Engineer	$85,000
Civil Engineer Technician	$60,000
Administration/ROW-Property	$55,000
Benefits/Payroll Taxes	$50,000
Overhead	$20,000
Software/hardware	$20,000
Total Costs	**$290,000**

Salaries for Civil Engineer, Civil Engineer Technician and Administration are based on Salary.com national averages. Benefits are estimated for 3 additional full-time employees with families. Software/hardware costs include licensing and equipment costs.

Table 4 represents annual costs that the SWA will have to take on without assistance. These costs will be funded by the water rates alone. Other expenses, such as legal fees, will also be the responsibility of the SWA once ownership is transferred. These expenses can vary greatly from year to year, depending on the circumstances. For example, litigation issues can occur on construction contracts. Such expenses

are impossible to predict with any accuracy. However, the SWA will need to consider these contingencies when developing their annual budget and water rates.

The cost for SWC Agency Operations is already included in the future capital outlays for the SWPP. Based on the description above, these costs are already included in the analysis. Therefore, no appreciable impact to SWPP customers is expected based on SWA performing Construction Management services. Construction Management is presumed to be a cost of employing capital assets and is therefore typically capitalized. However, if SWA prefers to include costs for Construction Management for new construction with current year revenues, they will need to increase their annual revenues by the amount listed in **Table 4**. This would result in a one-time rate increase of approximately 2.0% of annual revenues.

8.0 Evaluation of Results

8.1 Affordability based on Per Capita Income

The Heider Study recommended a rate such that the Capital Repayment for a residential customer was approximately 0.23% of per capita income (PCI). **Figure 20** shows how the Project Area PCI has changed over time and illustrates the Capital Repayment as a percentage of PCI based on municipal per capital water consumption previously presented. Generally, residential water costs have declined since inception which means that customers of SWPP spend less of their income today than when the project began.

An affordability analysis relative to domestic water consumption was not performed as a part of this study. That analysis has more to do with rate design than capital repayment alternatives.

Figure 20 Project Area Affordability

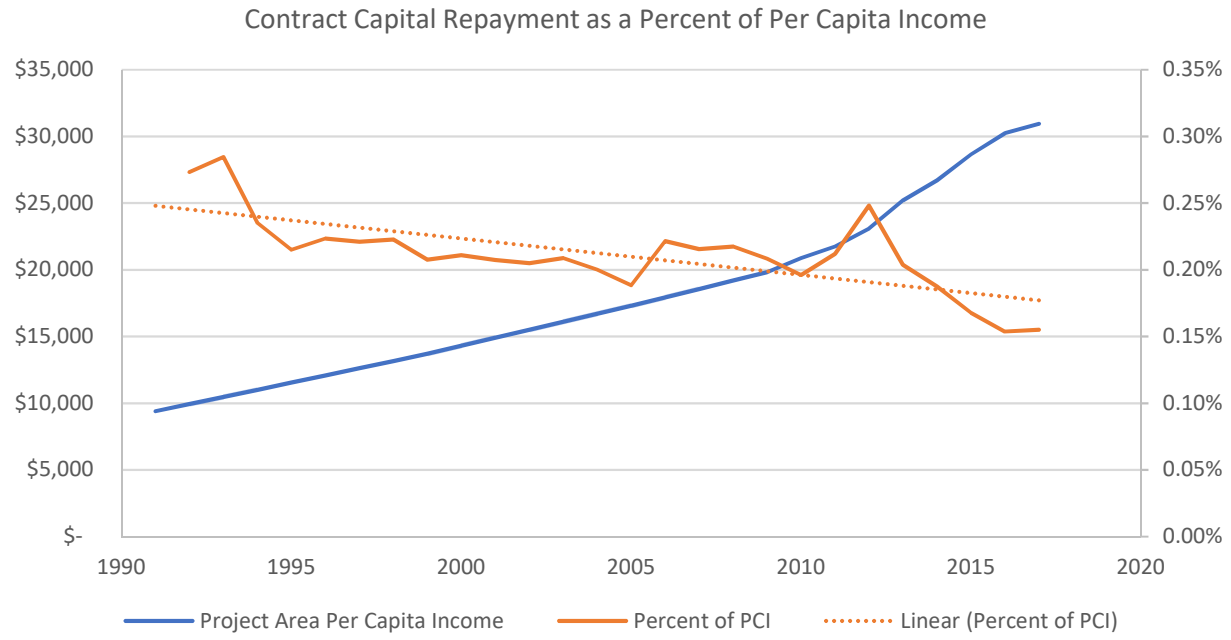
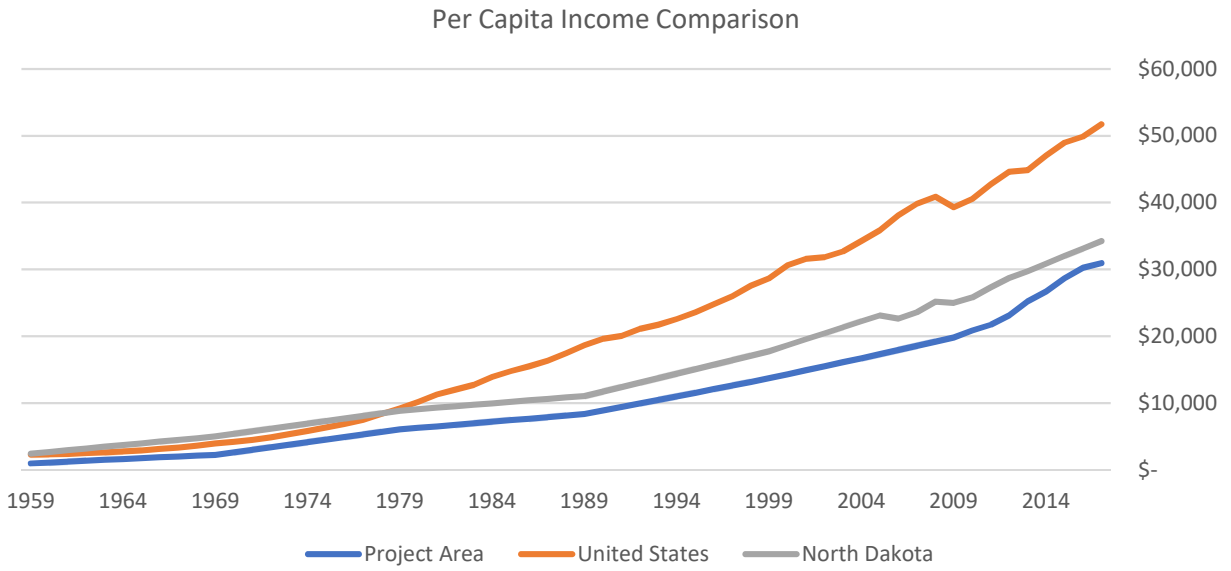


Figure 21 shows the Project Area PCI compared with State and national PCI. The project area generally trends with the rest of the State, which lags behind incomes across the nation.

Figure 191 Project Area PCI



8.2 Impacts to the RTF, State and SWPP Customers

The following section summarizes the impacts of the various models on the RTF, the State and the SWPP customers. The impacts of the transfer of ownership to SWA and the retention of ownership by the State are discussed.

8.2.1 Current Capital Repayment Model

Applies to:

Alternative 1: No Change in Ownership/No Change in Capital Repayment
Alternative A: Ownership transferred to SWA/No Change in Capital Repayment

As previously described, the current Capital Repayment model is analogous to that of a perpetual annuity with escalating payments for the benefit of the State. As a result of this structure, it is impossible to perform any kind of present value comparison to other alternatives.

Without future expenses for maintaining the capital, the benefit of continued involvement is heavily weighted toward the RTF. The RTF will redistribute receipts from the SWPP to other water development projects throughout the State, which in turn benefits the State.

Unfortunately, the current Capital Repayment model has some negative long-term implications to current customers of the SWPP. Current customers will eventually be paying more than other similar systems because the State Cost Share, which is available to other systems, has not been guaranteed to the SWPP. Even further in the future, capital repayments will exceed all existing investments from the State while the capital repayment portion of the rate will continue to escalate.

Finally, by prefunding capital replacements through the REM Fund, there will exist significant intergenerational inequity as current customers pay for both existing and future assets.

8.2.2 State Cost Share Alternatives

Applies to:

Alternative 2: No Change in Ownership/Assume State Cost-Share Percentage
Alternative 3: No Change in Ownership/Utility Basis Method
Alternative B: Ownership transferred to SWA/Termed Debt
Alternative C: Ownership transferred to SWA/Benchmark Capital Repayment

Several of the capital repayment alternatives developed in this study allow for State cost share or subsidy to the SWPP. While this single factor affects the rates and the relative impacts to stakeholders more than any other factor, it is relatively independent of any particular method. The effect of the cost-share can be incorporated into any of the models. But, most notably, indication of a grant percentage on capital would signify that the SWPP would be paying back some proportion of capital, rather than increasing payments in perpetuity.

The amount of cost-share will directly benefit SWPP customers and reduce future payments to the RTF. This will inherently reduce the amount of funds available through the RTF for other State priorities.

8.2.3 Termed Debt

Applies to:

Alternative B: Ownership transferred to SWA/Termed Debt

Depending on the State cost share and the terms of the debt, this alternative likely represents the lowest cost to existing SWPP customers. Existing capital repayments will service debt payments that exceed cost-share percentages of similar systems.

8.2.4 Utility Basis and Benchmark Alternatives

Applies to:

Alternative 3: No Change in Ownership/Utility Basis Method
Alternative C: Ownership transferred to SWA/Benchmark Capital Repayment

Both the Utility Basis and the Benchmarking alternatives represent independent methods of estimating capital costs. Conducting a Utility Basis analysis for the State invested capital may provide a method to balance the competing objectives for the RTF to earn a “fair return” on capital supplied, without being punitive to the SWPP customers. If this alternative is selected by the SWC, a separate analysis should be made to determine the Rate Base allowed considering granted facilities along with a low-risk interest rate to be utilized such as the short-term treasury bill or the current SRF interest rate.

8.2.5 Summary of Impacts

Table 5 has been prepared as a summary of the three main categories of models. It shows a probable example assuming a transfer of ownership date in 2023 and a State cost-share percentage of 75% of the total project spending. The value shown represents the annual amount that will be paid back to the RTF and would be reflective of the relative impact to the customer rates.

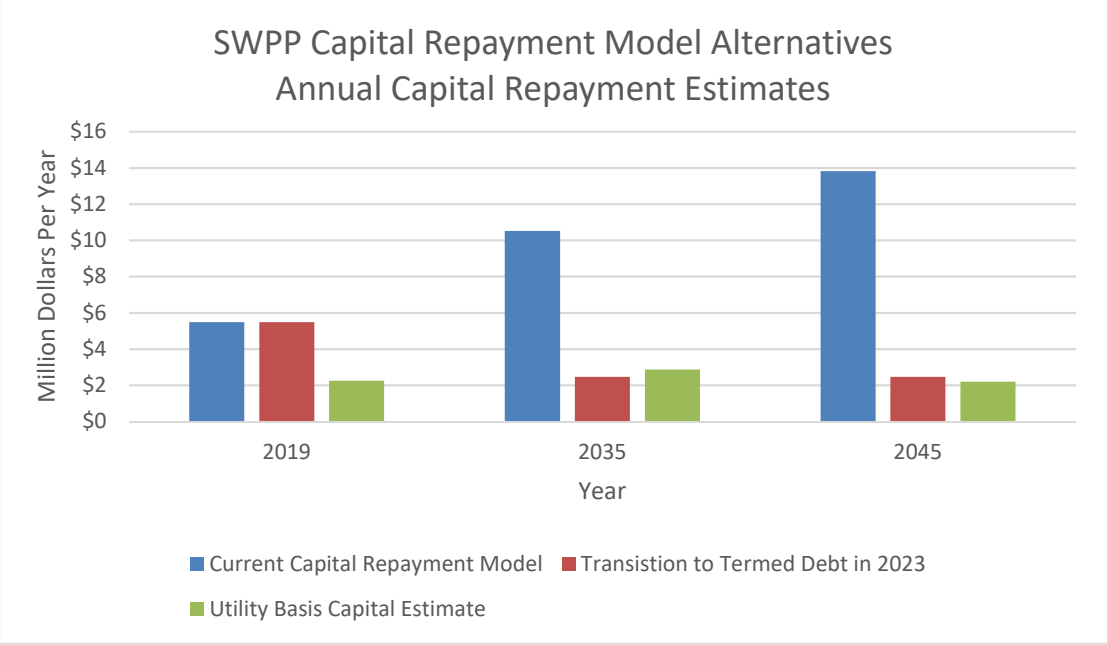
Table 5 Annual Capital Repayment Estimates

Annual Capital Repayment Estimates (Million $)			
	2019	**2035**	**2045**
Current Capital Repayment Model[1]	$5.47	$10.52	$13.82
Transition to Termed Debt in 2023[2]	$5.47	$2.45	$2.45
Utility Basis Return on Rate Base[3]	$2.25	$2.87	$2.19

1. The Current Capital Repayment Model is based on the following assumptions:
   a. Municipal population growth rate of 0.5%
   b. Per capita water usage = 120 gpcd
   c. 330 rural service additions per year for system build out and 50 per year thereafter
   d. Consumer Price Index escalates 2.27% per year
2. The Transition to Termed Debt Model is based on the following assumptions:
   a. Total cumulative spending in 2023 = $501.1 M
   b. Total cumulative State spending in 2023 = $379.0 M
   c. Total cumulative Capital Repayments in 2023 = $98.7 M
   d. State cost share = 75% of total spending
   e. Existing differential and all Future spending will be debt financed at 2% for 30 years
   f. Value shown includes principal and interest payments
3. The Utility Basis Return on Rate Base Model is based on the following assumptions:
   a. Rate Base = Original Rate – Depreciation
   b. Rate of Return = 2.27%, matching 25-year average of Consumer Price Index escalation
   c. State cost-share = 75% of total spending
   d. Depreciation follows straight-line methods over estimated service life of each asset
   e. Service Life estimates as follows:
      i. Water Transmission/Distribution = 80 years
      ii. Water Storage Facilities = 60 years
      iii. Water Treatment Equipment = 15 years
      iv. Cathodic Protection = 20 years
      v. Generators, pumps, equipment = 10 years

The above table is reflected is **Figure 22**.

Figure 202 Annual Capital Repayment Estimates



9.0 Conclusions

Significant differences exist between the capital financing used by the regional water systems in North Dakota. The governance models also vary remarkedly. These differences developed uniquely by necessity to address the issues of the project stakeholders at the time of formation.

A fundamental difference between the SWPP and the other regional systems is that for SWPP customers, capital payments are based on the ability to pay rather than a subsidized cost-based rate. The existing SWPP capital repayment model was initially a net benefit to the SWPP users.

The SWPP could not have been done by the users without the financial help of the State. Typically, regional, rural and municipal water utilities incur a "development hurdle" where the initial costs to the customers are relatively high. The initial users of the SWPP were not financially able to overcome that "development hurdle." By the SWC owning and financing this project in the beginning, the SWPP was able to proceed without financially crippling the users.

However, while the long-term benefit of growth within the project area directly benefits the rate payers, the SWPP is becoming a net benefit to the State. As the customer base expands within the SWPP project area, capital repayment will correspondingly increase. Under the current Capital Repayment model, the SWA will eventually pay for the entire SWPP.

SWPP Ownership can now be transferred in a way that is equitable and does not negatively impact water rates. Capital financing models that would achieve this have been identified.

The cost of the transfer of ownership is not a part of this study. The actual cost of transferring the ownership of property, easements, and facilities has not been evaluated. The estimation of the cost of time and personnel required to carry out the transfer of ownership will be addressed in Phase 2, if desired by the SWC.

APPENDIX A – SWA CAPITAL REPAYMENT HISTORY

NORTH DAKOTA STATE WATER COMMISSION
SOUTHWEST PIPELINE OWNERSHIP TRANSFER
CAPITAL REPAYMENTS AS OF DECEMBER 31, 2018

CAPITAL REPAYMENT THROUGH 2018

Year	Contract	Rural	Total
1991	$ 11,166.00	$ -	$ 11,166.00
1992	$ 212,899.00	$ -	$ 212,899.00
1993	$ 190,433.00	$ 5,540.00	$ 195,973.00
1994	$ 292,997.00	$ 7,475.00	$ 300,472.00
1995	$ 408,563.00	$ 95,616.00	$ 504,179.00
1996	$ 418,179.77	$ 316,814.38	$ 734,994.15
1997	$ 487,828.22	$ 370,085.00	$ 857,913.00
1998	$ 568,497.91	$ 347,293.46	$ 915,791.37
1999	$ 580,865.33	$ 445,131.91	$ 1,025,997.24
2000	$ 634,275.73	$ 524,952.50	$ 1,146,779.77
2001	$ 751,392.41	$ 556,470.52	$ 1,308,267.93
2002	$ 800,159.52	$ 630,004.66	$ 1,432,224.68
2003	$ 861,015.31	$ 718,768.94	$ 1,581,284.21
2004	$ 846,041.48	$ 774,667.77	$ 1,621,239.25
2005	$ 897,289.69	$ 809,668.64	$ 1,706,958.33
2006	$ 1,067,345.59	$ 881,134.67	$ 1,948,480.26
2007	$ 1,244,385.61	$ 1,063,680.25	$ 2,308,065.86
2008	$ 1,269,698.28	$ 1,184,034.70	$ 2,455,506.88
2009	$ 1,255,131.37	$ 1,363,856.74	$ 2,618,988.11
2010	$ 1,344,386.07	$ 1,432,160.52	$ 2,776,546.59
2011	$ 1,595,570.21	$ 1,480,846.23	$ 3,076,416.44
2012	$ 2,634,953.62	$ 1,652,322.24	$ 4,287,275.86
2013	$ 2,582,830.77	$ 1,938,810.07	$ 4,521,640.84
2014	$ 2,955,122.24	$ 2,139,203.24	$ 5,094,325.48
2015	$ 2,501,338.51	$ 2,275,038.66	$ 4,776,377.79
2016	$ 2,344,000.93	$ 2,592,756.86	$ 4,591,752.67
2017	$ 2,394,258.31	$ 2,863,924.59	$ 5,258,182.90
2018	$ 2,067,663.85	$ 2,947,752.89	$ 5,015,416.74
Perkins County Rural Water Total To Date			$ 5,459,000.00
TOTAL	**$ 33,218,288.73**	**$ 29,418,010.44**	**$ 67,744,115.35**

APPENDIX B – CURRENT BREAKDOWN OF FUNDING AND SERVICE AREA

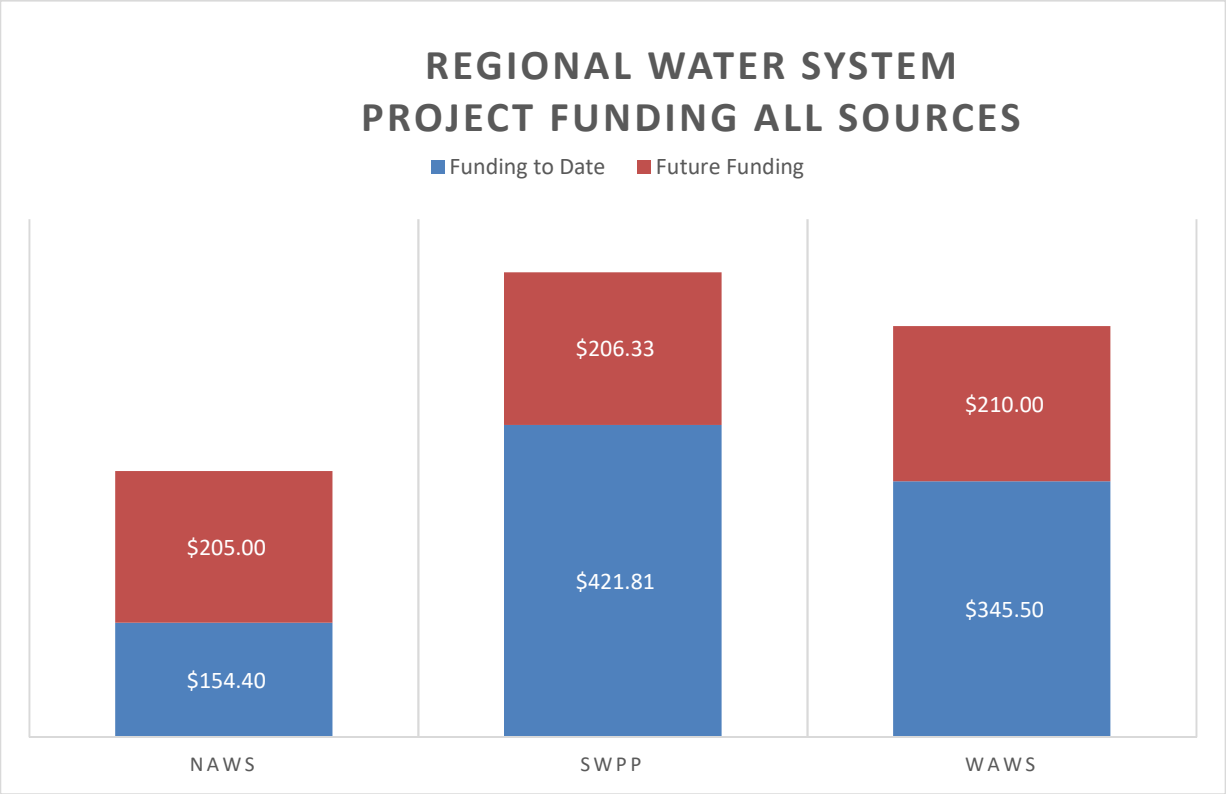
Current Breakdown of Funding (Millions of Dollars)			
	NAWS	**SWPP**	**WAWS**
State Funding Allocated through 6/30/2019	$53.70	$275.40	$119.50
State Future Funding	$180.90	$206.33	$157.50
Federal Funding	$52.15	$122.17	-
Federal Future Funding	-	-	-
Loans/Bonds	-	$24.24	$226.00
Future Loans/Bonds	-	-	$52.50
Local Share through 6/30/2019	$48.55	$70.31	-
Future Local Share	$24.10	-	-
Total Project Cost	**$359.40**	**$628.14**	**$555.50**

NOTES:

NAWS
1. City of Minot and City of Rugby contribute towards the local share of the NAWS project.
2. Local Share is deposited into the RTF.
3. A portion of the State Future Funding is expected to be reimbursed by the Federal Government.

SWPP
1. State Funding allocated to the SWPP includes the $18.3 Million towards Bond payoff made by SWC.
2. Capital Repayment includes deposits to RTF totaling $51.06 Million by SWA and Perkins County and $19.25 Million towards bond repayment.
3. Future Local Share is Capital Repayment.

WAWS
1. Local share is through loans from SWC ($84.5 Million), BND ($90 Million) and General Fund ($25 Million. $26.5 Million through Drinking Water SRF. $10 Million of the $26.5 M DWSRF loan was taken by R&T and Northwest Rural Water (member entities) to provide a local match for the grant from SWC.
2. The Loans/Bonds amount does not include the member entity loans that WAWS took over when WAWS was formed in 2011. The May 2019 balance on the member entity loans is $27.4 Million. This exclude the $10 Million DWSRF taken by R&T and Northwest Rural Water.
3. Future Local Share will likely be through DWSRF.



Current Breakdown of Service Area					
Project	**Service Area Population**	**Service Area Square Miles**	**Population/ Square Mile**	**Population/Square Mile less Primary Population Center**	**Distance from Primary Treatment/Population Center to Water Source**
SWPP	90,352	15,341	5.9		
SWPP Less Mandan	67,833	15,319	4.4	2.9	90
NAWS	82,345	6,432	12.8	5.4	45
WAWS	63,583	9,028	7.0	4.0	0

APPENDIX C – COMMENTS RECEIVED DURING 30-DAY COMMENT PERIOD

Summary of Comments Received

1. Utility Basis Alternative is unclear, needs more explanation. Need a list of underlying assumptions and explanation of calculations for each alternative.
   - NOTED – See final report.
2. "Ability to Pay" basis of capital repayment only applicable to contract customers. Rural users pay a flat rate comparable to the repayment rates of other rural water systems. Needs more discussion
   - NOTED – See final report.
3. What is the impact of a transfer of ownership of the SWPP on commercial and industrial users? How does this relate to the Return on Investment?
   - It is assumed that the transfer of ownership will result in a change in the capital repayment model. The State's return on investment will be the cost share percentage all parties decide upon. As the report shows, when the model is changed, the capital repayments go down. As the capital repayments go down, the rates should also go down.
4. Growth projections seem aggressive and the per capita water usage seems high. Is industrial consumption considered part of the per capital usage? How do the growth projections compare with future hook up costs and system capacity requirements?
   - The growth projections are based on data from the US Census and SWA. The report uses a growth projection of rural water hookups based on the SWA historic data not on the SWA projected number. See the final report.
   - The per capita water usage is for municipal users only. See the final report.
   - This study did not evaluate hook up costs as they will likely be borne by the individual user, not included in the rates.
   - Evaluating system capacity was not a part of this study.
5. What would the rates look like if the locals were required to pay interest on their 25% share to date if they were required to fund depreciation.
   - See Section 8. The Utility Basis Analysis model considers depreciation. This model would result in lower capital repayment costs than the current model and would subsequently result in lower rates.
6. Provide a tool for policy makers to use to fund future projects.
   - Not a part of the scope of work.
7. Provide an "apples to apples" comparison between the SWPP, WAWS, NAWS and RRVWS.
   - Not a part of the scope of work.
8. The projects were created at different times in different parts of the state with different stakeholders for different purposes. An "apples to apples" comparison will be difficult.
   - Not a part of the scope of work.
9. Provide a recommendation on governance and funding models for future use.
   - Not a part of the scope of work.
10. Provide a comparison to rural water systems.
    - See Section 3 of the final report.

Questions received from Mark Owan 12/10/19

1) *Structure of the Analysis/Phased Deliverable:*
   a) *What was the primary reasoning for deferring large portions of the originally requested scope?*
      - *This was done at the request of the Commission*
   b) *Did the Study Team believe the Commission had enough information in hand with the first phase to make a decision on ownership transfer?*
      - *No*
      i) *If no, what would be the anticipated duration/cost for the second phase?*
      - *The scope would need to be updated to accurately answer this question.*
2) *Selected Growth Projections:*
   a) *The growth projections used seem aggressive and long-term per capita water usage seems high:*
      i) *Did Study Team adjust out industrial consumption from historical per capita demands?*
      - *We used municipal sales and municipal populations. The per capita consumption has been very stable.*
      ii) *Considering national trends in per capita water use reductions, did the team consider lowering this over time?*
      - *We note that the trend of per capita water consumption observed for the SWPP is opposite of that described by most national records. However, we also noted that the per capita consumption in this area of North Dakota has been very stable. It was felt more prudent to rely on historical data for the area rather than national trends.*
      iii) *Do growth projections mirror future hook-up costs and system capacity requirements/costs?*
      - *Growth projections look only at the projected future consumers, not the cost of them hooking up to the system.*
3) *Alternative Analysis:*
   a) *Can the Study Team provide a more comprehensive list of underlying assumptions and calculations for each alternative (let the commission peak behind the curtain)?*
      - *Noted. See the final report.*
   b) *Can the team better explain what the utility method is and how it might be utilized long-term?*
      i) *Did the analysis consider funding depreciation in addition to RoR (the alternative doesn't appear to have included annual depreciation funding)?*
      - *Noted. See the final report.*
   c) *Did the team consider analyzing the total NPV cost to the state for each of the alternatives?*
      - *No. It was not part of the scope of work.*
   d) *Does the alternatives analysis give the benefit of past grant dollars to the State or local share (are they buying down the 75% share or the 25% share)?*
      - *The alternatives analysis gives the benefit of past grant dollars to the State.*
   e) *It appears the alternative analysis does not consider the cost of carried capital over time/to date:*
      i) *What would the total P&I payments have been in comparison to existing capital repayments if the locals were required to pay interest on their 25% share to date?*
      - *Figure 13 illustrates an effective 2.27% rate.*
      ii) *Likewise, if they were required to fund depreciation and an RoR on the 25% share to date?*
      - *This was not analyzed.*
4) *Comparison with other funding models:*
   a) *Did the Study Team attempt to create "what if" scenarios for the SWPP under other funding models to analyze local and State total cost differences?*
      - *We looked at the capital repayment under each model for the SWPP. See Section 8.*

Questions received from the City of Dickinson 1/6/20

1) *How would a transfer of ownership of the Project impact the "return on investment" (hereinafter "ROI") terms under the current agreement between the State and the SWA? Would the SWA be responsible for a continues "ROI" payment to the State after the transfer? If not, how would the ROI be converted into a repayment plan for past expenses? If so, what type of cost-share arrangements would be available to the SWA for future expenses?*
    - *We recommend that the State discontinue the current Capital Repayment Plan and replace it with one of the alternatives discussed in the report. We provided alternatives to the current Capital Repayment Plan if ownership were transferred to the SWA, including a transition to Termed Debt or adopting a benchmark published by the AWWA for Return on Assets (ROA) and Renewal and Replacement (R&R). We provided estimates of the total dollars each model would require. These estimates would be greatly influenced by the cost share by the State for previous expenditures and by the loan terms. The total dollars for each alternative can be compared with the total dollars generated by the current Capital Repayment Plan to understand which alternatives increase or decrease the costs to the SWA. If ownership is transferred, we assume the Project would receive similar cost-share arrangements as other systems, which may vary year by year depending on the funding availability and State priorities.*
2) *What type of impact, both financial and in terms of infrastructure, would such a transfer have on both commercial and industrial water users? In determining impact to individual water users within the SWA jurisdiction, has Apex considered the pass-through costs that entities such as the City of Dickinson must assess to its water customers when estimating future water rates?*
    - *We understand that the State would increase or decrease the capital costs as a constant percentage to all customer groups within the SWA.*
3) *The current ROI terms allow for a somewhat unpredictable payment schedule and increases in water user rates; how could these terms be modified to reduce large unanticipated increases to water customers?*
    - *We understand the ROI, or Capital Repayment component of the rate was established in 1982 and has increased annually according to the Consumer Price Index (CPI). While the CPI may change from year to year, this method is fairly consistent in comparison to other methods. We would recommend the State consider a 3-year or 5-year rolling average. This would reduce the volatility of the increases.*

Questions received from Jim Lennington 1/17/20

1) The study refers to the 1982 Chiles and Heider report and talks about "ability to pay" being the basis of the capital repayment rates. While this is correct, it is only correct for the contract customers of the project. As noted in the study on page 3, in 1991 the SWC expanded the authority of the SWPP, with legislative approval, to include service to individual rural water users in the project area. The capital repayment for the rural users was set at $20/month, which was according to minutes from the May 3, 1991 SWC meeting "comparable to rates throughout the state" and then indexed to inflation using the CPI just as the capital repayment for the contract users was. You can download these minutes right off the agency's website. In SWA's 2018 annual report you can see that as of 2016 the actual capital repayment by rural customers exceeds that of the contract customers. This is a significant point that should be highlighted in the study – the rural rates were not based on ability

to pay but were simply set to be comparable to the repayment rate on other rural water systems. The SWC (Jeffrey Mattern) keeps track of rural water system rates throughout the state and in deference to those claiming the current system is unfair perhaps a little more discussion on the rural rate in comparison of other systems is in order. The claims of unfairness seem to be more about the funding that SWPP receives rather than the rates so perhaps this won't help dispel those claims but it could still be included or discussed.

- Noted. See the final report.

2) At the SWC subcommittee meeting on December 20, 2019 there was discussion from Lt. Governor Sandford as well as Commission members relative to the scope of the study. As I recall the discussion there was a general consensus to consider the transfer of ownership as one option and to change the title of the study. Most of the questions and discussion related to the comparison of options for repayment or comparison between the different models, those being SWPP, WAWS, NAWS, and the Red River Valley Water Supply. I recall one Commissioner [Owan?] saying something to the effect of comparing apples to oranges or giraffes to zebras. My comment is in that regard. While I understand the desire to have a "level playing field" [Richard Johnson, I believe] by the members of the committee that will present some difficulty for the study team in that the projects, being borne at different times in different parts of the state with different stakeholders – had different objectives. The original authorizing legislation for SWPP did not allow water supply to industrial users unless those users paid their proportionate share of costs of the project up front. I obtained a copy of SB2251 from the librarian at the Legislative Council and it is attached. They were not allowed to get a water supply and then pay capital repayment like other users. This got changed later when Red Trail Energy was allowed to connect and pay capital repayment [2005, 61-24.3-07 modified]. At that point in time the SWPP had an excess of capacity and SWA was short operating revenue. Similarly, SD users (Perkins County RWS) had to pay their share of the costs as can be seen in 61-24.3-08.
   - Noted. This study was concentrating on the current capital repayment model and moving forward. As such, the history of payment policies was not investigated. We agree that comparing the different systems is problematic.
3) As I understand WAWS, water supplies for oil exploration (fracking) were a major part of the project planning from the outset. I think the concept was to sell water for fracking and use that to pay off the majority of the cost of construction, with the state guaranteeing any loans. This "excess capacity" is something SWPP was not allowed to include. Granted, at the time in the late 80's and early 90's there wasn't such a thing as fracking and the industrial uses being contemplated in the authorizing legislation were of the coal fired electric generating variety. Since I am not directly involved in NAWS I cannot be sure of this and it should be verified.
   - Noted.
4) As I understand RRVWS, it is even more speculative, in that capacity is being included for possible ag processing facilities in the eastern part of the state. While I personally support this concept, it is in stark contrast to the approach that was taken for SWPP and for NAWS. If one was to apply the SWPP Capital Repayment concept to RRVWS, this payment of proportionate share and not a water rate would be a fundamental aspect that has to be included. If not included how are you then comparing "giraffes to giraffes"?
   - Noted.

5) I don't believe the NAWS legislation addresses industrial uses other than to say the project purpose supports "light industrial" and other uses.
    - Noted.
6) My comment is really that I think it will be difficult to conduct a comparison of these projects on an "apples to apples, giraffes to giraffes" basis given these differences. Hypothetically, if a capital repayment model was adopted for RRVWS industrial users (ag processing), that is similar to that of SWPP, and those users are allowed to make capital repayments on the same basis as the cities and rural water systems, then what has happened is inherently unfair to SW North Dakota and that would switch the tables on the argument about fairness. Not to mention that taxpayers in ND would in effect, be subsidizing those industrial users. Perhaps the capital repayment model for RRVWS and WAWS would only be available to the municipal and rural users and any industrial users would have a different repayment model. The RRVWS has no direct rural users as planned but might have rural water systems as customers. How would you apply the SWPP model for rural capital repayment to those users? Same with WAWS and NAWS which provide wholesale supplies to several rural water systems which in turn have a rate structure that they set themselves based on their own O&M and capital costs.
    - Noted.
7) SWPP also has a cost limit for the amount that can be spent to bring rural water to any one user. This is natural and appropriate since the capital cost was not based on a loan. The SWC set the limit at $25,000 in July 1993 and then adjusts that also according to the change in CPI based on January 2000. The current limit is now about $45,000. This is all well and good but over time the amount of pipe that can be installed has become less and less. At one point in time it meant we could go 3.5 miles between users, but it has steadily dropped and is now close to less than 1.5 miles. It would not be possible for you to include this in any comparison to a rural water system that has been built but it should be discussed. I doubt the other systems would want a system like this. This also brings to mind the point about the project area population density that you've already covered. That was one of the reasons why the state had to get involved and it will be hard to get a level playing field between a more densely populated east rural water system and one out west, because of that simple fact it will always be more expensive to build in the west and it will take more support from the state.
    - Noted.
8) You also need to be aware that SWPP charges a different rate for any water that is being used for fracking. They have an oil industry rate that was $22/1,000 gallons in 2018 but was reduced in 2019 to $12 and will be in 2020 also. Of this amount $3 is for capital repayment if the water comes from SWA's water depot and $4 if the water comes from elsewhere. SWA gets a report from cities and other entities that are engaged in selling SWPP water for fracking and assesses these fees on them. This would be extremely difficult to compare with other systems and may not be important. It could be important if you tried to use the WAWS model on the SWPP. There has been very little revenue generated this way for several years but back in the fracking and hauling water with trucks heyday the SWA took advantage of this to generate revenue to build infrastructure including their current HQ office building. Now frackers use lay-flat piping systems and find closer sources and this revenue stream has dried up. The $10 drop in price didn't really help much.
    - Noted.

SOUTHWEST WATER AUTHORITY

May 21, 2020

Mr. John Paczkowski, P.E., Interim State Engineer & Secretary
North Dakota State Water Commission
900 East Boulevard Avenue
Bismarck, ND 58505

RE: SWPP Funding for the 2019-2021 Biennium, Including Strategic Distribution System Improvements

Dear John:

I am writing you today requesting the North Dakota State Water Commission's (SWC) commitment moving forward with the current plans for the Southwest Pipeline Project (SWPP).

The SWPP is challenged to serve additional customers throughout the Project Service Area. Southwest Water Authority (SWA) and the SWC have developed a three-prong approach to serve the region in southwest North Dakota. To move forward with the plans, your commitment is critical.

This three-prong approach was presented in the letter to the SWC dated June 3, 2019, to then State Engineer, Garland Erbele. We have continued to move forward, but are at the point where the SWC's firm commitment is needed. This approach includes:

1. Increasing capacity system-wide in both raw and treated water capacity
2. Strategic hydraulic improvements to allow potential customers on the Project
    a. Current waiting list is 760 locations – it is our intent to move forward with a financial commitment from potential customers, but we cannot without the SWC's resolve
3. Phased development plan for rural areas

SWA is currently in the easement acquisition phase for main transmission pipelines (MTLs). These MTLs are for increasing potable water capacity in all directions for the regions served from the water treatment plants (WTP) in Dickinson. These MTLs could be ready for bid within the next two months. The attached spreadsheets define the estimated costs for each.

SA219, the *Preliminary Design of Distribution System Expansion Engineering Report*, has provided both the SWC and SWA with strategic improvements to allow waiting list users to sign up and build their lines. Several areas have been identified for possible strategic capacity improvements that

would allow additional subsequent users to connect to the Project. A subsequent user is one who has applied for service from the Project after construction has been completed in a service area. A hydraulic analysis is completed to determine if the addition of the user would negatively impact existing users. If there is no impact, the user is allowed to pay for and construct their own connection to the pipeline, generally at a cost to themselves exceeding $10,000. These are people who definitely want Project water! Currently, the Project serves 7,273 active accounts, with 2,343 of those being subsequent users. It is important to note that subsequent users represent nearly 1/3 of all the active accounts on the SWPP. This is more users than some other rural water systems have in their entire system. This reflects the desire and need for an adequate supply of good quality drinking water in southwest North Dakota. The additional capacity built in the system is gone. It has proved, beyond a shadow of a doubt, just how important the SWPP and quality water is to our region.

SWA is also asking for support and Project funding with the metallic MTLs in the system. Just this last week, we experienced our fourth failure in a ductile iron MTL due to corrosion. SWA has lost confidence in the integrity of the ductile iron pipeline. This last repair was on the 30 inch raw water line to Dickinson at a location east of Taylor. It was a more than 40-hour repair. We were genuinely concerned with keeping our region in drinking water. Red Trail Energy was also out of process water from Thursday until Monday. The integrity of the system and capability of adequate flows are at stake.

The first repair of this sort was a 29-hour repair of the 16 inch MTL south of Dickinson in 2004, followed by another one nearby in 2016. After that repair a 450 foot section of that pipe was replaced, also in 2016. We are currently working on a replacement project for a 1,500 foot section of 16 inch MTL at a different location just south of Dickinson. It is estimated this repair will cost about $1 million. We have spent Replacement and Extraordinary Maintenance (REM) funds for the 2016 repair. However, with the repairs themselves running a million dollars each, and this being of such an extraordinary nature, I am requesting construction funds be made available for these repairs. The REM Fund was established by the Legislature in 1983, but was not established for wholesale replacement of large-ticket Project components. It was established for items such as repainting water reservoirs, replacing pumps, valves, and other smaller items; it is simply not adequate for replacing large sections of main transmission pipelines. We have just started the investigation on the raw water line break near Taylor, so there is no current cost estimate or adequate knowledge of the situation at this location. We are researching the reasons for the new found failures in the system. The metallic MTL has an impressed current cathodic protection system we monitor and maintain. It appears that microbiologically influenced corrosion is taking place beneath the polyethylene encasement on the ductile iron pipe in certain areas with high sulfates in the soil and very wet conditions. This was confirmed at the 2004 and 2016 failure locations and is suspected for the two more recent failure locations.

I am including the map of the pipelines for the MTL construction easement acquisition phase. Also included are the summary of the system strategic improvements along with a “Top Ten” list for the

Project, the Proposed Construction Projects Estimated Costs for this construction year and next, and one map of the Davis Buttes Service Area Improvement DB-4 showing the subsequent users hooked up after construction was complete.

The Sixty-Sixth Legislative Assembly approved buckets for funding in the current biennium via Senate Bill 2020. Legislative intent was for $25.5 million of the Capital Assets bucket to be appropriated to the SWPP.

Quality of life is possible because of teamwork and our steadfast dedication to those we serve. Southwest North Dakota will keep growing with additional capacity for the SWPP, and its award-winning, quality water. ***Quality Water for Southwest North Dakota*** only continues with our sustained working together.

SWA respectfully requests your consideration for funding and constructing Project enhancements as you are able.

Sincerely,

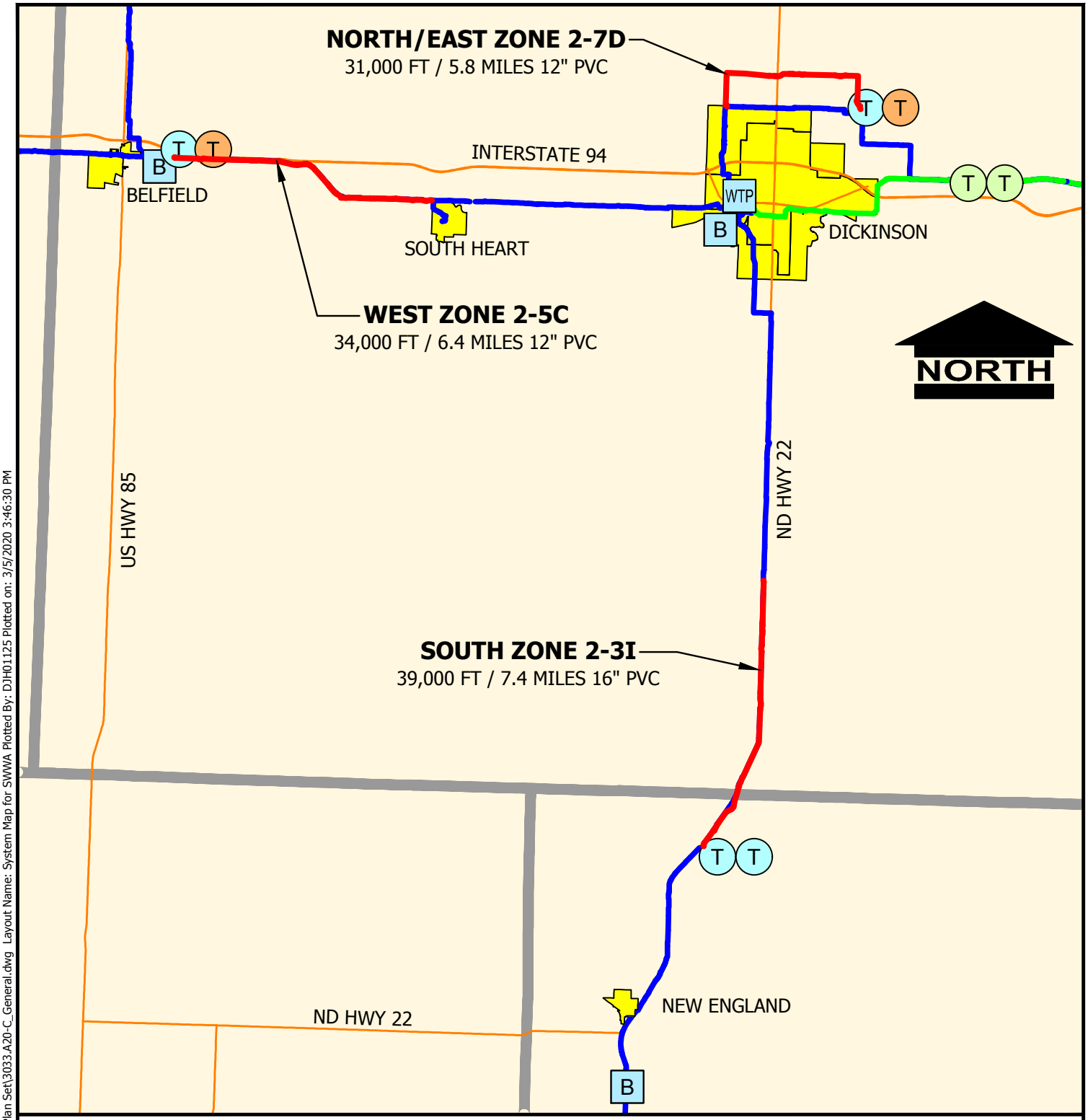
Mary Massad
Manager/CEO
Southwest Water Authority

Enclosures:

- Main Transmission Line Map
- Strategic Improvements Summary (SA219)
- "Top Ten" Strategic Improvements List
- 2019-2020 Construction Projects Estimated Costs
- 2020-2021 Construction Projects Estimated Costs
- SWPP Project Service Area Waiting List Map
- Davis Buttes Service Area Improvement DB-4 Map

Electronic Copy:

- The Honorable Rich Wardner, Senate Majority Leader, North Dakota State Legislature
- The Honorable Don Schaible, Director, SWA
- The Honorable Jim Schmidt, Chairperson, Water Topics Overview Committee
- Commissioner Steven Schneider, SWC, Little Missouri River Basin
- Sindhuja S. Pillai-Grinolds, P.E., Project Manager, SWC
- Jim Lennington, P.E., Project Manager, Bartlett & West



LEGEND OF MTL FACILITIES

- POTABLE WATER PIPELINE
- RAW WATER PIPELINE
- FUTURE WATER PIPELINE
- STATE & US HIGHWAYS
- T — RESERVOIR (POTABLE)
- T — RESERVOIR (RAW WATER)
- T — RESERVOIR (FUTURE)
- WTP — WATER TREATMENT PLANT
- B — PUMP STATION (POTABLE)
- B — PUMP STATION (RAW WATER)
- B — PUMP STATION (FUTURE)

Bartlett&West
www.bartlettwest.com

SWPP
FACILITY LOCATION MAP

PROJ NO: 3055.004
DATE: 03/03/20

SHEET NUMBER 1 OF 1

Table 2: Strategic Improvement Summary

Service Area Improvement Number	Description of Improvement	Additional Users	Cost	Cost Per ESU
Beach Service Area				
BA-1	Upgrade 5,200 feet of 3-inch pipe with higher class 3-inch pipe. Add a small booster. Add a Type 3 PRV. Add a Type 2 PRV. All done on branch line that goes north of Home on The Range.	6.5 waiting list ESU	$352,000	$54,154
BA-2	Addition of Golva SA Tank to help the Beach SA	N/A	$1,272,000	N/A
BA-3	Parallel 21,600 feet of 2-inch pipe with 2-inch. Parallel 13,980 feet of 3-inch pipe with 3-inch. Parallel 53,600 feet of 4-inch pipe with 4-inch. Parallel 32,800 feet of 6-inch pipe with 6-inch. Add a small booster. Add a PRV crossover.	37 waiting list ESU	$2,522,000	$68,162
Belfield Service Area				
BF-1	Parallel 6,250 feet of 2-inch pipe with 3-inch pipe in area NE of Belfield Tank and Booster location	2 waiting list ESU*	$74,000	$37,000
Burt Service Area				
BU-1	Add 2 boosters downstream of the Coffin Buttes VFD Booster	7 waiting list ESU*	$622,000	$88,857
BU-2	Add a booster downstream of the PLC VFD Booster	7 waiting list ESU*	$261,000	$37,286
BU-3	Add a booster north of Carson and parallel 12,000 feet of 3-inch pipe just north of Carson	5.5 waiting list ESU*	$404,000	$73,455
Davis Buttes Service Area				
DB-1	Parallel 31,000 feet of 12-inch MTL from RCPS to Davis Buttes Reservoir	N/A	$1,484,000	N/A
DB-2	Additional 22,000 feet of 6-inch pipe from 12-inch MTL to 6-inch west branch line and a prefabricated control vault/PRV	23 ESU	$793,000	$34,478
DB-3	Parallel 1 mile of 4-inch pipe north of the Davis Buttes Reservoir	29.5 ESU	$92,000	$3,119
DB-4	Add a Taylor Elevated Reservoir for area downstream of Davis Buttes Reservoir. Reservoir is 300kgal, 160 feet to overflow, 300 service units.	58.5 waiting list ESU*	$1,890,000	$32,308

Service Area Improvement Number	Description of Improvement	Additional Users	Cost	Cost Per ESU
Fairfield Service Area				
FF-1	Parallel 5,300 feet of 4-inch pipe with 4-inch pipe through Grassy Buttes. Parallel 11,000 feet of 3-inch pipe with 3-inch pipe north of Grassy Buttes.	39 waiting list ESU*	$223,000	$5,718
FF-2	Parallel pipe west and southwest of Fairfield Tank.	N/A	N/A	N/A
Fryburg Service Area				
FB-1	Parallel 3,400 feet of 2-inch pipe with 3-inch pipe	9 waiting list ESU*	$41,000	$4,556
Golva Service Area				
GV	There are no improvements that need to be done to serve the WL users in the Golva SA.	N/A	N/A	N/A
Halliday Service Area				
HL-1	Add users Conald Havelka, Dori Hauck, and Brent Kautzman	N/A	N/A	N/A
Jung Lake Service Area				
JL-1	Parallel 2 miles of 10-inch pipe with 10-inch pipe somewhere between the Burt Booster Pump Station and the first mainline PRV upstream.	N/A	$628,000	N/A
Killdeer Mountain Service Area				
KM-1	Parallel 18,000 feet of 4-inch pipe with 4-inch pipe north of the Killdeer Mountain BPS	36.5 waiting list ESU*	$312,000	$8,548
KM-2	Add a new 4-inch line to the SE part of the service area so a couple of the multiple subdivisions on the waiting list could be added.	56 subdivision waiting list ESU*	$520,000	$9,286
New England Service Area				
NE-1	Parallel existing pipe with 27,000 feet of 4-inch pipe. Didn't include recommendation for waiting list 25GPM contract user Justin Hausner.	20 waiting list ESU*	$469,000	$23,450
NE-2	Parallel existing pipe with 20,400 feet of 3-inch pipe. This is for 25GPM contract to disconnected Account #3698	N/A	$242,000	N/A
NE-3	Parallel 43,500 feet of 14-inch MTL from the New England Reservoir to the Jung Lake Booster Pump Station. Parallel 2,400 feet of 2-inch pipe.	18.75 waiting list ESU	$2,897,000	$154,507

Service Area Improvement Number	Description of Improvement	Additional Users	Cost	Cost Per ESU
New Hradec Service Area				
NH-1	Parallel 9,000 feet of 6-inch pipe from New Hradec Tank to New Hradec Booster and parallel 16,500 feet of 4-inch pipe south and west of Manning	16.5 waiting list ESU*	$539,000	$32,667
NH-2	Add a booster downstream of the New Hradec Booster	21 waiting list ESU*	$347,000	$16,524
NH-3	Upgrade 5,500 feet of pipe downstream of the PRV that is north of the old New Hradec Tank location	4 waiting list ESU*	$96,000	$24,000
Twin Buttes Service Area				
TB-1	Parallel 20,000 feet of 4-inch pipe with 4-inch pipe going to Amidon. Add a small booster on the 4-inch line. Add a 75,000-gallon ground reservoir. Add 9,000 feet of 6-inch pipe to reservoir and back.	30 ESU	$1,379,000	$45,967
TB-2	Upgrade existing Scranton BPS to two 75 hp pumps, add Scranton Tank, add Bowman BPS, parallel one mile 14-inch PVC, and 14-inch crossing of Cedar Creek	N/A	$3,248,000	N/A

Southwest Pipeline Project
Strategic Imrovement "Top-Ten" List

Service Area Improvement Number	Description	Additional Users, ESU	Cost	Cost per ESU	Rank
DB-3	Parallel 1 mile of 4" pipe north of the Davis Buttes Reservoir	14.5 29.5	$92,000	$6,210 $3,119	1
FB-1	Parallel 3,400' of 2" pipe with 3" pipe	9	$41,000	$4,556	2
FF-1	Parallel 5,300' of 4" pipe with 4" pipe through Grassy Buttes. Parallel 11,000' of 3" pipe with 3" pipe north of Grassy Buttes.	39	$223,000	$5,718	3
KM-2	Parallel 18,000' of 4" pipe with 4" pipe north of the Killdeer Mountain BPS	36.5	$312,000	$8,548	4
NH-2	Add a booster downstream of the New Hradec Booster	21	$347,000	$16,524	5
TB-1*	Parallel 11,500' of 4-inch pipe with 4-inch pipe. Add small booster on 4-inch pipeline.	8 13	$459,000	$57,375 $35,307	6
DB-4	Add a Taylor Elevated Reservoir for area downstream of Davis Buttes Reservoir. Reservoir is 300kgal, 160' to overflow, 300 service units.	58.5	$1,890,000	$32,308	7
BA-2	Golva Tank		$1,272,000		10
TB-1	Parallel 20,000' of 4" pipe with 4" pipe going to Amidon. Add a small booster on the 4" line. Add a 75,000 gallon ground reservoir. Add 9,000' of 6" pipe to reservoir and back.	20 30	$1,379,000	$68,950 $45,967	
Totals, excluding Twin Buttes-1		186.5			

Notes: Need to find out about McKenzie County Rural Water District plans. That is a definite possibility. If we get a supplemental supply there is reduced need for Golva Tank based on project criteria. We may also be able to do a variation of Beach Service Area-2 that serves some but not all of those waiting list users. We also could do a variation of New England Sercive Area-1 but need to verify waitng list user numbers and locations.

NH-1	Parallel 9,000' of 6" pipe from New Hradec Tank to New Hradec Booster and parallel 16,500' of 4" pipe south and west of Manning	16.5	$539,000	$32,667	
NH-3	Upgrade 5,500' of pipe downstream of the PRV that is north of the old New Hradec Tank location	4	$96,000	$24,000	
NE-1	Parallel existing pipe with 27,000' of 4" pipe. Didn't include recommendation for waiting list 25GPM contract user Justin Hausner.	20	$469,000	$23,450	
TB-2	Upgrade existing Scranton BPS to two 75 hp pumps, add Scranton 400kgal Reservoir, add Bowman BPS, parallel pipe at Cedar Creek. **Twin Buttes Tank currently 36% undersized.**		$3,248,000		

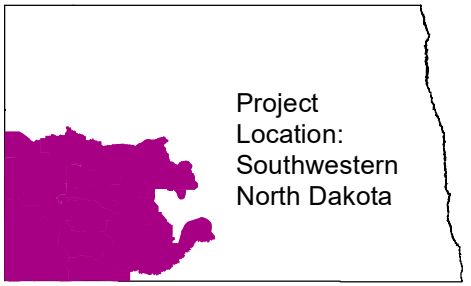
2019-2020
Construction Projects

Contract	Description	Estimated Project Cost
2020-2021		
2019-1	Blowoff Replacements	$300,000
	Raw Water Main Transmission Line Blowoff Upgrades	
	Upgrades needed due to new pumps at Dodge and Richardton Pump Stations	
	Bid opening August 13, 2019/substantial completion May 31, 2020	
5-13A	2nd Davis Buttes Reservoir	$1,800,000
	1 Million Gallon Ground Storage Reservoir, 60' diameter x 47'high	
	Capacity upgrades/reudndancy/resiliency	
	Bid opening September 17, 2019/substantial completion October 30, 2020	
5-9A	2nd Belfield Reservoir	$1,500,000
	750,000 Gallon Ground Storage Reservoir, 52' diameter x 47' high	
	Capacity upgrades/redundancy/resiliency	
	Bid opening September 17, 2019/substantial completion October 30, 2020	
	Rural Water Hydraulic Improvements	$2,500,000
	Potential Customers on Waiting Lists	
	Distribution system improvements to allow growth	
	Preliminary Design Report expected April 2020	
	SWC Agency Operations	$450,000
	Total Estimated 2019 - 2020 Costs	**$6,550,000**

2020-2021
Construction Projects

Contract	Description	Estimated Project Cost
	2020-2021	
6	Dodge and Richardton Pump Station SCADA SCADA for Dodge and Richardton Pump Station Upgrades	$400,000
2-7D	Main Transmission Line between Ray Christensen Pump Station and Davis Buttes Reservoir 6 miles of 12" parallelled main transmission line Capacity upgrades necessary for regional growth Bid opening proposed for spring/summer 2020 (currently in easement acquistion status)	$1,900,000
2-3I	Main Transmission Line between Ray Christensen Pump Station and New England Reservoir 8 miles of 16" parallelled main tranmission line Capacity upgrades necessary for regional growth Bid opening proposed for spring/summer 2020 (currently in easement acquisition status)	$4,500,000
2-5C	Main Transmission Line between Ray Christensen Pump Station and Belfield Reservoir 6 miles of 12" parallelled main transmission line Capacity upgrades necessary for regional growth Bid opening proposed for spring/summer 2020 (currently in easement acquisition status)	$1,900,000
	Rural Water Hydraulic Improvements System hydraulic improvements where growth is limited by Project capacity Preliminary Design Report expected April 2020	$2,500,000
1-1B/1-2B	Supplementary Intake Pump Station and Intake Pump Station Upgrade Intake pump station building, miscellaneous piping, appurtenences and SCADA Design 2021	$9,300,000
	SWC Agency Operations	$450,000
	Total Estimated 2020-2021 Costs	**$20,950,000**
	Total Estimated Cost for 2019-2021 Biennium	**$27,500,000**

Southwest Pipeline
Service Area and Waiting List
December 2019



Locations Requesting Water
Main Transmission Pipeline
Raw Water Line
Served by OMND WTP
Served by Dickinson WTP/Southwest WTP
SWPP Area Served by MWWS
MWWS Supplemental Service By OMND WTP
County Boundaries
Service Area Boundaries

Grassy Butte Pocket Area
Killdeer Mtn Pocket Area
Fairfield Service Area
OMND WTP
WTP
Killdeer
Dunn Center
Halliday
Dodge
Stanton
Golden Valley
Zap
Hazen
Center
Manning
New Hradec
Beach
Medora
Belfield
Dickinson
Taylor
Hebron
Sentinel Butte
South Heart
Gladstone
Richardton
Glen Ullin
Golva
New England
Regent
Mott
Elgin
Carson
New Leipzig
Rhame
Scranton
Reeder
Hettinger

NORTH
0 10 20 40
Miles

DAVIS BUTTES SERVICE AREA IMPROVEMENT DB-4

SOUTHWEST WATER AUTHORITY

SOUTHWEST PIPELINE PROJECT

New Hydropillic Tank

County Line CV

Taylor Watershed Contract Boundary

Davis Buttes Reservoir

RCPS

MTL PRV Vault

ADD A TAYLOR ELEVATED WATER TOWER

Deep Creek

Deep Creek

Lyman County

Branch Knife River

Beaver Creek

Antelope Creek

Stark County

Richardton

Taylo

Hebron

Gladstone

MAP LEGEND

- Waiting List User at Time of SA Review
- New Waiting List User
- Previous Waiting List User Removed
- Subsequent User
- PRV
- Additional Pipe
- Davis Buttes SA Pipe
- Existing Pipe
- SA Boundaries

MAP DEVELOPED IN DAVIS BUTTES SERVICE AREA REVIEW DATED MARCH 2019

Bartlett & West

EXHIBIT DB-4

G. ECONOMIC ANALYSIS. Project sponsors seeking cost-share for construction of flood control or water conveyance projects with a total cost of two hundred thousand dollars or more must complete the Water Commission's economic analysis worksheet. The results of the economic analysis must be provided with the sponsor's application for cost-share assistance for agency review. When the results of the economic analysis are determined by the agency to be accurate, the results will then be presented to the State Water Commission for their consideration as part of the cost-share request.

Projects that yield a benefit to cost (BC) ratio of one to one, or greater, are eligible for up to the maximum allowable cost-share per project type and policy. Projects that yield a BC ratio of less than one to one will have the BC ratio used as a percentage of allowable cost-share (i.e. eligible costs, multiplied by the applicable cost-share percentage, multiplied by the BC ratio) – unless otherwise authorized by the Commission.

H. LIFE CYCLE COST ANALYSIS. Project sponsors seeking cost-share for construction of water supply projects must complete the Water Commission's life cycle cost analysis worksheet. The completed worksheet must include a no action alternative, and up to three additional plausible alternatives - including repair, replacement, and regionalization options. If repair, replacement, and regionalization alternatives are excluded from the life cycle cost analysis, justification must be provided by the project sponsor.

The results of the life cycle cost analysis must be provided with the sponsor's application for cost-share assistance for agency review. When the results of the life cycle cost analysis are determined by the agency to be accurate, the results will then be presented to the State Water Commission for their consideration as part of the cost-share request.

IV. COST-SHARE CATEGORIES

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

A. PRE-CONSTRUCTION EXPENSES. The State Water Commission supports local sponsor development of feasibility studies, engineering designs, and mapping as part of pre-construction activities to develop support for projects within this cost-share policy. The following projects and studies are eligible.

1 Feasibility studies to identify water related problems, evaluate options to solve or alleviate the problems based on technical and financial feasibility, and provide a 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

APPENDIX F

STATE WATER COMMISSION
SUMMARY of PROJECT FOUR YEAR PROGRESS REPORTS
2019-2021 Biennium
June 9, 2020

Requesting Extension

Sponsor	Project	Project Category	Approved Date	Total Cost	Cost-Share %	Cost-Share Approved	Total Payments	4/30/2020 Balance
Barnes County WRD	Ten Mile Lake Flood Risk Reduction Project	General Water (feasibility study)	06/08/16	$108,000	35%	$ 37,800	$ 988	$ 36,812
Cass County Joint WRD	Rush River Watershed Detention Study	General Water (feasibility study)	01/07/16	$940,000	35%	$ 154,000	$ 54,743	$ 99,257
Cass County Joint WRD	Upper Maple River Watershed Detention Study	General Water (feasibility study)	01/11/16	$940,000	35%	$ 154,000	$ 106,944	$ 47,056
Maple River WRD	Lynchburg Channel Improvements	Water Conveyance (rural flood control)	07/09/16	$3,603,000	45%	$ 1,195,126	$ 377,675	$ 817,451
Pembina County WRD	Tongue River NRCS Watershed Plan	General Water (feasibility study)	03/09/16	$799,151	35%	$ 104,703	$ 47,565	$ 57,138
Sargent County WRD	Shortfoot Creek Watershed Planning Program	General Water (feasibility study)	03/09/16	$940,000	35%	$ 154,000	$ 72,260	$ 81,740
State Water Commission	Missouri River Recovery Program	General Water (Other)	11/17/15	$75,000	100%	$ 75,000	$ 28,490	$ 46,510
Ward County WRD	Second Larson Coulee Detention Pond	Flood Control (flood protection)	07/06/16	$1,110,439	60%	$ 602,307	$ -	$ 602,307
			TOTAL	$ 8,515,590		$ 2,476,936	$ 688,664	$ 1,788,272

Completed / Deobligated

Griggs County WRD	Ueland Dam Rehabilitation Feasibility Study (Study will not be completed.)	General Water (feasibility study)	05/20/16	$50,000	35%	$ 17,500	$ -	$ 17,500
Hettinger County WRD	Karey Dam Rehabilitation Feasibility Study (Final payment of $6,853 being processed.)	General Water (feasibility study)	05/23/16	$38,715	35%	$ 13,550	$ 6,697	$ 6,853
Logan County WRD	Beaver Lake Dam Rehabilitation Feasibility Study (Final payment of $2,140 being processed.)	General Water (feasibility study)	06/08/16	$45,930	35%	$ 16,076	$ 13,936	$ 2,140
Pembina, City of	Flood Protection System Certification (Final payment of $1,657 being processed.)	General Water (flood control study)	04/19/16	$125,000	60%	$ 75,000	$ 73,343	$ 1,657
Maple River WRD	Cass County Drain 15 Channel Improvements (Final payment of $4,533.64 being processed.)	Water Conveyance (rural flood control)	03/09/16	$732,500	45%	$ 296,562	$ 207,029	$ 89,533