MINUTES

North Dakota State Water Commission
Bismarck, North Dakota

December 6, 2019

The North Dakota State Water Commission (SWC or Commission) held a meeting at the Ramkota Hotel, Bismarck, North Dakota, on December 6, 2019. Governor Burgum called the meeting to order at 8:36 a.m., and requested Garland Erbele, State Engineer, and Chief Engineer-Secretary to the Commission, call the roll. Governor Burgum announced a quorum was present.

STATE WATER COMMISSION MEMBERS PRESENT:
Governor Burgum, Chairman
Doug Goehring, Commissioner, ND Department of Agriculture, Bismarck (left at 1:25 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:
Lt. Governor Sanford (left at 1:25 p.m.)
Garland Erbele, State Engineer, and Chief Engineer-Secretary
SWC Staff
Jennifer Verleger, General Counsel, Attorney General's Office
Approximately 100 people interested in agenda items.

CONSIDERATION OF AGENDA

The agenda for the December 6, 2019, SWC meeting was presented; there were no modifications.

CONSIDERATION OF DRAFT MEETING MINUTES FOR OCTOBER 10, 2019, AND DRAFT MEETING MINUTES FOR NOVEMBER 7, 2019, POLICY MEETING

The draft minutes for the October 10 and November 7, 2019, SWC meetings were reviewed. There were no modifications.

It was moved by Commissioner Goehring, seconded by Commissioner Owan, and unanimously carried, that the minutes for October 10 and November 7, 2019, be approved as presented.

STATE WATER COMMISSION FINANCIAL REPORTS

The allocated program expenditures for the period ending October 31, 2019, were presented and discussed by Heide Delorme, Director of Administrative Services. The total expenditures were within the authorized budget amounts.

A bar chart summarizing project expenditures and commitments and Project Summary for the 2019-2021 Biennium, **APPENDIX A**, provided information on the committed and uncommitted funds from the Resources Trust Fund and the Water Development Trust Fund. The final summary for projects showed approved projects totaling $450,538,460 with expenditures of $39,921,723. A balance of $245,673,274 remains available to commit to projects in the 2019-2021 biennium.

The oil extraction tax deposits into the Resources Trust Fund total $72,696,561 through November 2019 and are $2,768,896 or 4 percent above budgeted revenues. The current balance in the Water Development Trust Fund is $14,219,653 with no anticipated deposits for the biennium.

ND DRINKING WATER STATE REVOLVING LOAN FUND – 2020 INTENDED USE PLAN

An update of the ND Drinking Water State Revolving Loan Fund (DWSRF) was presented by Shannon Fisher, Program Manager, ND Department of Environmental Quality (Department).

The Department prepared the 2020 Intended Use Plan, which contains the Comprehensive Project Priority List and the Fundable List. The plan was available to the public for review and comment, with a public hearing held on November 7 and comments accepted until November 14.

In accordance with NDCC Chapter 61-28.1, the Department must administer and disburse DWSRF funds with the approval of the Commission. Also, the Department must establish assistance priorities and expend grant funds pursuant to the priority list for the DWSRF, after consulting with and obtaining the approval of the Commission.

The process of prioritizing new or modified projects is completed on an annual basis. The list includes 269 projects, with a cumulative total project cost of $676.3 million.

Following Commission approval of the 2020 Comprehensive Project Priority List and Fundable List, the Department will apply for the Environmental Protection Agency program. Commission approval will enable the Department to proceed with

disbursement of funds once the Environmental Protection Agency has approved the capitalization grant. The Department intends to disburse DWSRF funds according to the 2020 Comprehensive Project Priority List and Fundable List, attached as **APPENDIX B.**

The recommendation was to approve the 2020 Comprehensive Project Priority List and the Fundable List, and authorize the Department to administer the 2020 Intended Use Plan for the DWSRF. The approval is subject to the entire contents contained herein.

> **It was moved by Commissioner Goehring and seconded by Commissioner Hemmer the Commission approve the 2020 Comprehensive Project Priority List and the Fundable List, and authorize the Department to administer the 2020 Intended Use Plan for the DWSRF. This action is subject to the entire contents contained herein.**
>
> **Commissioners Anderson, Hemmer, Johnson, Owan, Pedersen, Schneider, Volk, Zimmerman, Goehring, and Governor Burgum voted aye. There were no nay votes. Governor Burgum announced the motion carried.**

SOUTHWEST PIPELINE OWNERSHIP TRANSFER STUDY

Mike Berg, Apex Engineering Group, and Matt Oedekoven, and Bruce Jennings, DGR Engineering, presented their reports on the Southwest Pipeline Ownership Transfer Study. The presentation is attached as **APPENDIX C.**

After Commission discussion, the Governor and Commissioners requested the study team analyze scenarios on financial analysis so it provides a tool for policy makers to determine a model that would work best with regards to ownership, governance and repayment of state investment, and future project funding. A subcommittee of the Commission will meet with Apex Engineering Group and provide input and comments to the study group. Lt. Governor Sanford will chair the subcommittee. The 30-day comment period will continue as planned. The Governor encouraged the public to provide comments and input during the comment period.

NORTH DAKOTA RISK ASSESSMENT MAPSERVICE

Aaron Carranza, Regulatory Division Director, presented a live webpage demonstration of the North Dakota Risk Assessment MapService (NDRAM). FEMA and the SWC have worked collaboratively to provide the information necessary to develop NDRAM for use in preparing for and recovering from a flood. This tool will enable communities and property owners to identify which areas are most vulnerable.

NDRAM was designed by the SWC to provide flood risk information for every county in North Dakota. It is a user-friendly map service that is meant to educate residents, emergency managers, the technical community, and civic leaders seeking flood risk data to help generate informed decisions regarding local flood hazard.

Governor Burgum requested the SWC connect with other state agencies such as information technology, tax department, and emergency services to look at potential future growth, enhancements, and collaboration in use of NDRAM. Aaron stated that discussions with other state agencies have already begun on potential data and functionality additions that may aid in the utility and overall mission of the platform and that the system works on all media types.

APPROVAL OF WATER PERMITS OVER 5,000 ACRE FEET

Jon Patch, Appropriations Division Director, presented information on conditional water permits exceeding the 5,000 acre-foot threshold for final approval by the Commission. Statute gives final approval authority to the Commission for water permits exceeding 5,000 acre feet.

After discussion, it was determined that information on water permits be presented to the Commission at a future meeting. A summary would be provided for information such as current water permits needing approval, how many permits approved to date, and related statistical data. Jon would also discuss the overall policy the SWC uses to approve water permits, the development of recent technology advancements such as the electronic routing system, the PRESENS system, AEM, and statutory regulations used when approving permits.

The following conditional water permits were presented for approval:

Permit No.	Permitholder	Use Type	Status	Approved Acre Feet	Date Issued
6101	CITY OF WEST FARGO	Municipal	Conditionally Approved	5,600	06/22/15
6319	REDLAND LLC	Industrial	Conditionally Approved	10,000	05/15/13
6390	SAND CREEK RESOURCES, INC.	Industrial	Conditionally Approved	6,452	02/18/19
6403	SAND CREEK RESOURCES, INC.	Industrial	Conditionally Approved	6,452	02/18/19

6418	CITY OF DICKINSON	Industrial	Conditionally Approved	10,080	10/15/14

The recommendation was for the Commission to give final approval to the conditional water permits that exceeded 5,000 acre-feet.

It was moved by Commissioner Goehring and seconded by Commissioner Volk the Commission approve conditional water permit numbers 6101, 6319, 6390, 6403, and 6418.

Commissioners Anderson, Hemmer, Johnson, Owan, Pedersen, Schneider, Volk, Zimmerman, Goehring, and Governor Burgum voted aye. There were no nay votes. Governor Burgum 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 D**. 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:

- Little Dam Repurposing Feasibility Study (Barnes County WRD)
- North Branch Park River NRCS Watershed Study (Park River Joint WRD)
- Lower Red Basin Regional Detention Study (Red River Joint WRD)
- Permanent Flood Protection Phase I (Valley City)
- System 4 Connection to System 1 (All Seasons Water Users District)
- Carpio-Berthold Phase II (North Central Regional Water District)
- Storage and Water Main (North Prairie Water District)
- State Avenue South Water Main (Dickinson)

- Regionalization Improvements (Fargo)
- Water Systems Improvements (Minot)
- Phase IV (Western Area Water Supply Authority (WAWSA))
- Water Systems Improvements (Williston)

DE-OBLIGATION OF FUNDS:

- 2015 Capital Infrastructure Project (Dickinson)
- 2015 Pond Dredging Project (Wilton)
- 2015 Gwinner Dam Improvement Feasibility Study (Sargent County Water Resource District)

After discussion, the following motion was made:

> **It was moved by Commissioner Pedersen and seconded by Commissioner Owan the Commission approve all requests, except Valley City and WAWSA, for funding extensions with the stipulation that funding be finalized by June 30, 2021, and the projects be brought to Commission for re-evaluation by April 2021.**
>
> **Commissioners Anderson, Hemmer, Johnson, Owan, Pedersen, Schneider, Volk, Zimmerman, Goehring, and Governor Burgum voted aye. There were no nay votes. Governor Burgum announced the motion carried.**

After further discussion, Valley City and WAWSA were asked to be presented as cost-overrun requests and provide additional information for their requests of carryover funds and present at the February 2020 Commission meeting. The Commission took no action on the de-obligated project funding.

SOUTHWEST PIPELINE AUTHORITY (SWA) – 2020 CAPITAL REPAYMENT AND REPLACEMENT AND EXTRAORDINARY MAINTENANCE (REM) RATE

Sindhuja S.Pillai-Grinolds, Southwest Pipeline (SWPP) Project Manager, requested the Commission establish the 2020 Capital Repayment and REM rates for the SWA. The complete memorandum is attached as **APPENDIX E.** The recommendation was to approve the request as written.

> **It was moved by Commissioner Zimmerman and seconded by Commissioner Johnson the Commission approve the 2019 Capital Repayment and REM rates as follows:**
>
> > **Capital Repayment for contract and rural customers: $1.23 per thousand gallons for contract users, $29.80 for rural users in Morton County with water service from**

Missouri West Water System, $37.62 per month for other rural users.

Capital Repayment for oil industry contracts: $3.00 per thousand gallons for Dickinson Water Depot and $4.00 per thousand gallons for other oil industry contracts.

REM Rate: $0.70 per thousand gallons for the contract users, $0.80 per thousand gallons for rural users, $3.00 per thousand gallons for the SWA's Dickinson Water Depot, and $4.00 per thousand gallons for other oil industry contracts.

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

COST-SHARE POLICY REVISIONS – ECONOMIC ANALYSIS AND LIFE CYCLE COST ANALAYSIS

Pat Fridgen, Planning and Education Director, provided the Commission a final draft of the cost-share policy revisions related to Economic Analysis and Life Cycle Cost Analysis.

At the August 8, 2019, Commission meeting, staff were asked to draft modifications to the *Project Funding Policy, Procedure, and General Requirements*. Specifically, Commissioners wanted language included in the policy that makes Life Cycle Cost Analysis a requirement for all water supply projects seeking cost-share assistance – not just municipal projects. In addition, Commissioners wanted language added that requires multiple alternatives – including repair, replacement, and regionalization options.

During the September and November 2019 Commission subcommittee meetings, Commissioners discussed modifications to the cost-share policy that would revise economic analysis requirements. The current policy mandates economic analysis for flood control and water conveyance projects with a total cost of $1,000,000 or more. At the November subcommittee meeting, staff were directed to revise policy – setting the threshold at $75,000 or more.

After discussion, the Commission requested the economic analysis threshold requirement be changed from $75,000 or more to $200,000 or more. A final revision of the of the SWC's *Project Funding Policy, Procedure, and General Requirements* is attached as **APPENDIX F,** highlighting in yellow the final revisions.

It was moved by Commissioner Anderson and seconded by Commissioner Schneider the Commission approve the attached modifications to the *Project Funding Policy, Procedure, and General Requirements* related to Life Cycle Cost and Economic Analysis and become effective immediately.

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

STANDARD OPERATING PROCEDURES – 2019-2021 COST-SHARE PROGRAM

Pat Fridgen provided the Commission with draft Standard Operating Procedures (SOPs), **APPENDIX G**. During each budget cycle, there are unique issues that arise related to cost-share requests that likely don't warrant modifications to the agency's cost-share policy. However, in order to provide consistency in program administration, the approval of SOPs would offer consistency, and provide direction to staff to improve program efficiency.

The SOPs were recommended for cost-share program administration during the 2019-2021 biennium. If new issues or questions require further clarity, additional SOPs may be added.

It was moved by Commissioner Johnson and seconded by Commissioner Owan the Commission approve the attached SOPs and become effective immediately.

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

COMPLETED APPLICATIONS/CHECKLIST FOR COST-SHARE APPLICATION PACKAGES

Pat Fridgen provided the Commission with a proposed checklist to assist project sponsors or their consultants in making sure they have all required materials with their cost-share applications, **APPENDIX H**. The checklist summarizes existing policy requirements, and reiterates the 45-day deadline for application submissions.

Incomplete cost-share applications are being submitted by project sponsors. Current policy includes requirements for supplemental materials that are to accompany applications depending on project type. In addition, current policy requires that applications be submitted 45 days in advance of meetings to allow adequate time for staff processing, and subcommittee review.

Oftentimes, sponsors submit only the application form by the 45-day deadline without all of the required supplemental materials being complete such as permits, soil analyses, life cycle cost analyses, and economic analyses. In addition, it is not uncommon for applications to come in after the 45-day deadline, with a request to be exempted from that requirement.

It was the recommendation to approve the checklist and the checklist be a required attachment for all cost-share application submittals. Governor Burgum requested SWC staff meet with the state IT division to discuss the benefits and costs of building an electronic checklist and cost-share application.

It was moved by Commissioner Volk and seconded by Commissioner Anderson the Commission approve the Water Commission Cost-Share Application Checklist and that it be a required attachment for all cost-share application submittals.

Commissioners Anderson, Hemmer, Johnson, Owan, Pedersen, Schneider, Volk, Zimmerman, and Governor Burgum voted aye. There were no nay votes. Commissioner Goehring was absent for the vote. Governor Burgum announced the motion carried.

LEGAL UPDATES

Jennifer Verleger, General Counsel, Attorney General's Office, provided brief legal updates on State Water Commission and Office of the State Engineer litigation.

DROUGHT DISASTER LIVESTOCK WATER SUPPLY PROGRAM DEACTIVATION

Pat Fridgen provided the Commission with an update on the Drought Disaster Livestock Water Supply Project Assistance Program (Program) which was activated in the summer of 2017. At that time, many counties throughout the western portion of the state were plagued with extreme drought, and ranchers found themselves in critical need of more reliable options for watering their livestock. As the summer continued, more counties were added to the program – and again others were added in 2018. Forty-five of 53 North Dakota counties are included in the Program.

Since the Program was activated, 494 projects have been completed by 356 applicants. To date, the Program has provided $1,421,582 in cost-share to project sponsors who have completed long-term livestock water supply projects.

Over the course of the last couple of months, North Dakota has no longer been experiencing extreme drought conditions. In fact, much of the state has more recently been experiencing excessively wet conditions. It was the recommendation to de-activate the Program effective December 20, 2019, and that projects be given 180 days for completion beyond the de-activation date.

It was moved by Commissioner Goehring and seconded by Commissioner Zimmerman the Commission approve the 2017 Drought Disaster Livestock Water Supply Project Assistance Program be de-activated, with a December 20, 2019, cutoff date for any new applications. It was further moved that any existing, or new applications received by December 20, be given no more than 180 days as a cutoff to complete projects for reimbursement.

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

MUNICIPAL WATER SUPPLY PROJECT PRIORITIZATION AND STORAGE FUNDING

Pat Fridgen provided the Commission with information related to the prioritization system for municipal water supply projects, monthly municipal water rates, historic funding mechanisms used by project sponsors to fund water tower projects, and potential future water tower infrastructure funding needs, attached as **APPENDIX I**.

Commissioners directed staff to identify or develop a system of ranking municipal water supply projects within the agency's existing priority categories. At that time, projects were ranked using the agency's "Project Prioritization Guidance" as essential, high, moderate, or low, with no further ranking or prioritization.

Many of the water supply projects submitted for Water Commission cost-share are also ranked in the Department of Environmental Quality's (DEQ) Intended Use Plan for the Drinking Water State Revolving Loan Fund (DWSRLF) Program. These project rankings are based on point allocations for water quality, water quantity, affordability, infrastructure adequacy, consolidation or regionalization of water supplies, and operator safety. In addition, DEQ's annual Intended Use Plan is reviewed and approved by the Commission.

Commissioners approved use of the SWC's prioritization as the *primary* ranking factor, and DEQ's Intended Use Plan rankings as a *secondary* factor for municipal water supply projects. Since that time, there has been additional discussion about the SWC's prioritization ranking factors concerning more recent cost-share requests, reviews, and approvals.

At the November in-person subcommittee meetings, Commissioners discussed the current prioritization system, and whether or not modifications should be made. The direction to staff was to continue making recommendations using the currently-approved system, but Commissioners also were open to additional dialogue relative to potential future modifications.

Commissioner Hemmer suggested that the SWC staff should also consider using costs of water in addition to rates when considering affordability. Commissioner Hemmer also requested that at the next subcommittee, the Commissioners discuss fire protection and density/storage capacity related to water tower projects.

Governor Burgum requested the following action items:

- The bar chart showing monthly municipal water rates be added to the SWC website;
- Dave Glatt and Shannon Fisher from the DEQ meet with Governor Burgum to discuss the weighting criteria used for the current IUP ranking system; and
- DEQ summarize how much federal funding has come in over the last decade or two for municipal water projects, and what criteria has been used for distribution of it. This should be brought to the February Commission meeting.

LOW HEAD DAM PRIORITIZATION RANKING SYSTEM

Duane Pool, Resource Economist, provided an update on the continued work of the SWC staff to develop an inventory of low head dams throughout the state. He also provided estimated costs to mitigate known low head dam risks, and development of a process to prioritize the dams with a focus on human safety. The complete memorandum, prioritization, and dam inventory is attached as **APPENDIX J.**

SWC staff will continue to identify low head dams, determine mitigation costs, and prioritize ongoing mitigating risks in order to report to the Commission as needed.

STATE COST-SHARE REQUESTS

FLOOD CONTROL:

PEMBINA COUNTY WATER RESOURCE DISTRICT – DRAIN NO. 81: $284,982 (SWC Project No. 2112)

Pembina County Water Resource District (District) requested cost-share for the Pembina County Drain 81 project. Pembina County Drain 81 was petitioned by area farmers to address flooding from overland water. The drain would discharge into Drain 67A and provide improved drainage with better control to the area.

A positive assessment vote was received for the project, and drain permit #5294 was approved. The total project cost is $646,293, of which $633,293 is eligible for cost-share at 45 percent, or $284,982.

The project was included in the 2019 Water Development Plan, and meets requirements of the Commission's cost-share policy for flood control projects. The recommendation was to provide state cost-share participation of $284,982 at 45 percent of eligible costs. The cost-share request is attached as **APPENDIX K.**

After discussion, Commissioner Anderson asked that the cost-share request be tabled until the February 2020 meeting. St. Thomas has expressed concerns related to Drain 81 flowing into Drain 67A which flows through St. Thomas and the possible costs associated with repair or replacement of culverts and diking.

The District scheduled a meeting for December 10 to discuss the cost estimates received for repair or replacement of the culverts in St. Thomas as part of Drain 67A. It was agreed that the cost-share request be addressed at the February meeting in order to receive an update from the District on discussions with St. Thomas.

PEMBINA COUNTY WATER RESOURCE DISTRICT – DRAIN NO. 82: $1,011,666 (SWC Project No. 2138)

Pembina County Water Resource District (District) requested cost-share for the Pembina County Drain 82 project. Farmers have experienced frequent agricultural damages as a result of excessive run-off in the area.

A positive assessment vote was received for the project, and drain permit #5271 was approved. The total project cost is $2,340,284, of which $2,248,147 is eligible for cost-share at 45 percent, or $1,011,666.

The project was included in the 2019 Water Development Plan and meets requirements of the Commission's cost-share policy for water conveyance projects. The recommendation was to approve the request for state cost-share participation of $1,011,666 at 45 percent of eligible costs. The cost-share request is attached as **APPENDIX L.**

> **It was moved by Commissioner Owan and seconded by Commissioner Zimmerman the Commission approve the request by Pembina County Water Resource District for state cost-share participation of $1,011,666 at 45 percent of eligible costs. The**

approval is contingent on available funding for the 2019-2021 biennium.

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

VALLEY CITY PERMANENT FLOOD PROTECTION LOAN - $3,676,600 (SWC Project No. 1504-09)

Valley City requested a loan for their Permanent Flood Protection project. The total loan amount requested is $3,676,600 at a 2 percent interest rate from the Bank of North Dakota (BND) through the Infrastructure Revolving Loan Fund.

The following table outlines the elements of the Permanent Flood Protection project for which Valley City is seeking a loan to assist with their local share.

SWC project #	Description	Total	State - SWC	Local	Loan Request
1504-03	Phase II & II A Construction	$16,447,000	$13,157,600	$3,289,400	$264,408
1504-07	Phase III Construction	$2,232,724	$1,786,179	$446,545	$446,545
1504-08	Erosion Sites	$600,354	$480,283	$120,071	$120,071
1504	Phase IV Construction	$13,543,130	$10,834,504	$2,708,626	$2,708,626
1504	Phase V Design	$913,000	$776,050	$136,950	$136,950
					$3,676,600

The recommendation was to approve Valley City's request for a loan of $3,676,600 at an interest rate of 2 percent from the Infrastructure Revolving Loan Fund through BND. The cost-share request is attached as **APPENDIX M.**

It was moved by Commissioner Johnson and seconded by Commissioner Hemmer the Commission approve the request by Valley City for a loan of $3,676,600 at an interest rate of 2 percent from the Infrastructure Revolving Loan Fund, through BND. The approval is contingent on available funding for the 2019-2021 biennium.

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

MUNICIPAL WATER SUPPLY:

WATFORD CITY – WATER DISTRIBUTION 2019 - $1,580,000
(SWC Project No. 2050WAT)

Watford City submitted cost-share requests on four water supply construction projects. Since 2010, Watford City's annual population growth was over 38 percent and serves 7,080 people. These projects will allow for an additional 750 people.

The total estimated eligible cost for all four project segments is $2,674,334 for a total eligible cost of $2,633,335. Cost-share of 60 percent would provide funding of $1,580,000. Watford City will utilize cash on hand to fund the local share of the project.

The project was included in the 2019 Water Development Plan, is a moderate priority, and meets requirements of the Commission's cost-share policy for municipal water supply projects. The recommendation was to provide state cost-share participation at 60 percent of eligible costs at an amount not to exceed $1,580,000. The cost-share request is attached as **APPENDIX N.**

It was moved by Commissioner Johnson and seconded by Commissioner Schneider the Commission approve the request by Watford City for state cost-share participation at 60 percent of eligible costs at an amount not to exceed $1,580,000. The approval is contingent on available funding for the 2019-2021 biennium.

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

PROJECT UPDATES

Commission staff provided brief updates on the following projects with the summary updates attached as **APPENDIX O:**

Jon Kelsch, Water Development Director, Devils Lake Outlet and Mouse River;
Jesse Kist, Water Resource Engineer, Missouri River;
Tim Freije, Project Engineer, NAWS; and,
Sindhuja S.Pillai-Grinolds, SWPP.

ROUNDTABLE UPDATES WITH COMMISSIONERS

Commissioners provided brief updates on relevant issues related to their basins.

Governor Burgum would like to have the Commission more involved in the strategic planning for the SWC. Governor Burgum also requested the Commission revisit the current structure of the Commission and subcommittee meetings. Governor Burgum indicated that the Commission meetings need to be more effecient going forward. Governor Burgum requested Reice Haase, SWC Policy Advisor, send the Commissioners strategic review material sent to SWC staff for use in planning the overall SWC budget in order for them to know what is used in the budget development planning process.

Governor Burgum thanked the Commission for their service and wished everyone a happy Holiday Season.

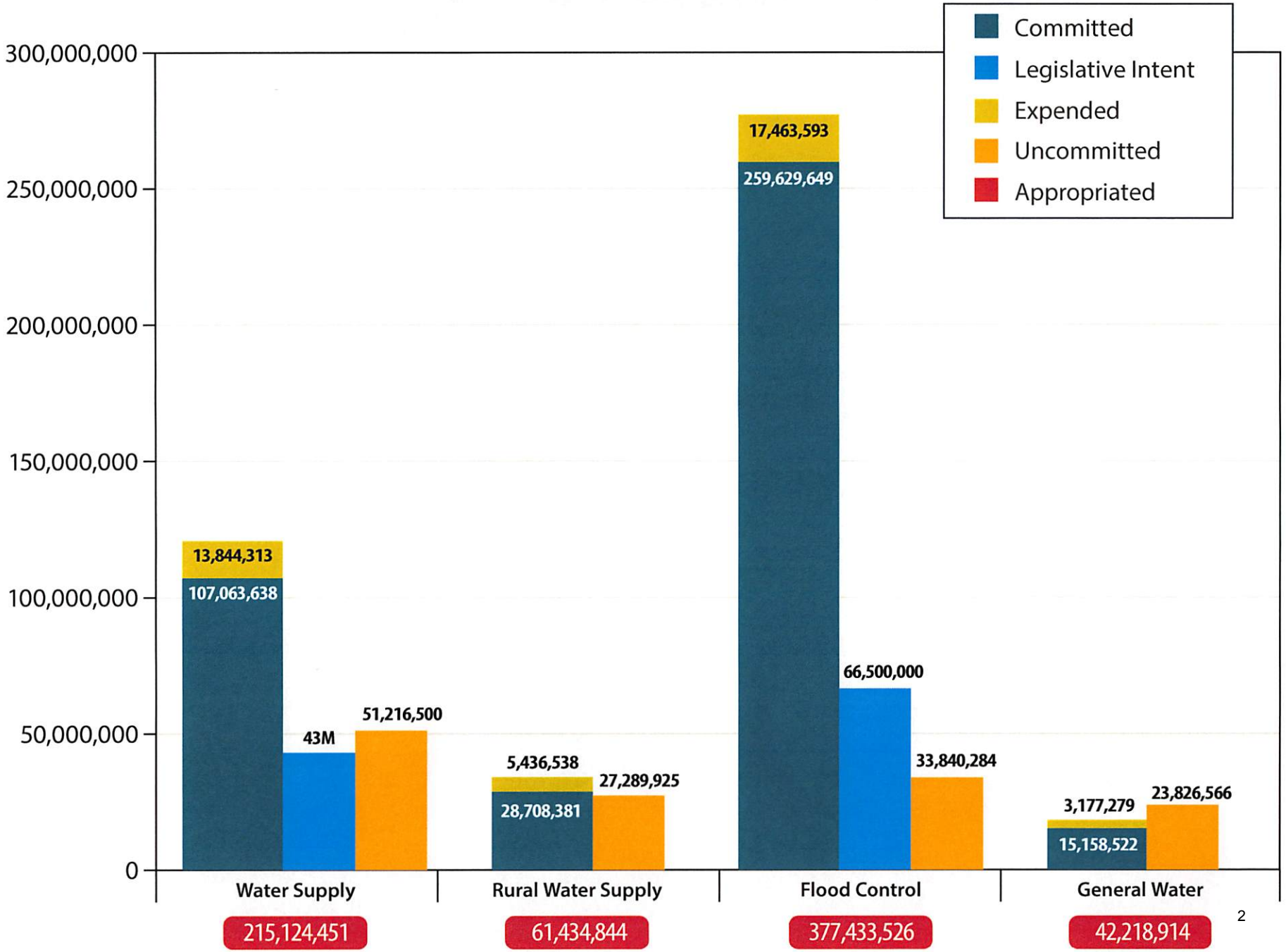
There being no further business to come before the Commission, Governor Burgum adjourned the December 6, 2019, meeting at 3:00 p.m.

Doug Burgum, Governor
Chairman, State Water Commission

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

APPENDIX A

PROJECT FUNDS



STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 BIENNIUM

Oct-19

		2017-2019 CARRYOVER	2019-2021 FUNDING	2019-2021 BUDGET	SWC/SE APPROVED	REMAINING UNOBLIGATED
MUNICIPAL & REGIONAL WATER SUPPLY:						
MUNICIPAL WATER SUPPLY		37,586,554	26,575,574	64,162,128	64,162,128	(0)
RED RIVER VALLEY		4,000,000	43,000,000	47,000,000	4,000,000	43,000,000
OTHER REGIONAL WATER SUPPLY		47,269,823	5,476,000	52,745,823	52,745,823	(0)
UNOBLIGATED MUNICIPAL/REG WATER SUPPLY		1,731,926	49,484,574	51,216,500		51,216,500
	Total	87,124,452	124,536,148	215,124,451		94,216,499
% OBLIGATED			24.35%			
RURAL WATER SUPPLY:						
RURAL WATER SUPPLY		24,234,844	9,910,075	34,144,919	34,144,919	(0)
UNOBLIGATED RURAL WATER SUPPLY		0	27,289,925	27,289,925		27,289,925
	Total	24,234,844	37,200,000	61,434,844		27,289,925
% OBLIGATED			26.64%			
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	956,200	16,335,698	16,335,698	0
PROPERTY ACQUISITIONS		820,117	15,175,000	15,995,117	15,995,117	(0)
WATER CONVEYANCE		9,258,738	1,517,961	10,776,699	10,776,699	0
UNOBLIGATED FLOOD CONTROL		0	33,840,284	33,840,284		33,840,284
	Total	180,433,527	197,000,000	377,433,526		100,340,284
% OBLIGATED			49.07%			
GENERAL WATER:						
GENERAL WATER		15,068,590	3,323,757	18,392,348	18,392,348	0
UNOBLIGATED GENERAL WATER		56,547	23,770,020	23,826,566		23,826,566
	Total	15,125,136.68	27,093,776	42,218,914		23,826,566
% OBLIGATED			12.06%			
REVOLVING LOAN FUND:						
		BALANCE		3,950,765		
% OBLIGATED			100.00%			
TOTALS		306,917,959	385,829,924	696,211,735	450,538,460	245,673,274

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 BIENNIUM

Oct-19

	SWC/SE APPROVED	EXPENDITURES	REMAINING UNPAID
MUNICIPAL & REGIONAL WATER SUPPLY:			
MUNICIPAL WATER SUPPLY	64,162,128	5,032,488	59,129,641
RED RIVER VALLEY	4,000,000	2,000,000	2,000,000
OTHER REGIONAL WATER SUPPLY	52,745,823	6,811,826	45,933,998
TOTAL	120,907,952	13,844,313	107,063,638
RURAL WATER SUPPLY:			
RURAL WATER SUPPLY	34,144,919	5,436,538	28,708,381
FLOOD CONTROL:			
FARGO	105,735,612	2,947,918	102,787,694
MOUSE RIVER	110,369,758	8,334,409	102,035,349
VALLEY CITY	16,469,241	746,079	15,723,161
LISBON	1,411,117	748,675	662,442
OTHER FLOOD CONTROL	16,335,698	3,255,101	13,080,597
PROPERTY ACQUISITIONS	15,995,117	373,187	15,621,930
WATER CONVEYANCE	10,776,699	1,058,224	9,718,475
TOTAL	277,093,242	17,463,593	259,629,649
GENERAL WATER:			
GENERAL WATER	18,335,801	3,177,279	15,158,522
REVOLVING LOAN FUND:			
GENERAL WATER PROJECTS	0	0	0
WATER SUPPLY	0	0	0
TOTALS	450,481,913	39,921,723	410,560,190

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium

WATER SUPPLY

Approved SWC By	No	Dept	Sponsor	Project	Approved Date	Total Approved	Total Payments	Oct-19 Balance
			Municipal Water Supply:					
	2050-13	5000	Mandan	New Raw Water Intake	6/19/19	11,898,205	0	11,898,205
	2050-15	5000	Washburn	New Raw Water Intake	4/12/18	1,889,711	0	1,889,711
	2050-20	5000	Dickinson	Capital Infrastructure	10/6/15	1,731,926	0	1,731,926
	2050-26	5000	Fargo	Fargo Water System Regionalization Improvements	7/29/15	1,971,286	0	1,971,286
	2050-29	5000	Minot	Water Systems Improvement Project	10/6/15	599,301	28,157	571,144
	2050-30	5000	Watford City	Water Systems Improvement Project	10/6/15	2,400,000	777,203	1,622,797
	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	963,920	0	963,920
	2050-49	5000	Grand Forks	Grand Forks Water Treatment Plant	8/23/17	7,089,371	3,993,142	3,096,229
	2050-52	5000	New Town	Water Transmission Storage	10/11/18	743,477	233,985	509,492
	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	0	1,415,788
	2050-67	5000	Williston	Williston Water System Improvements	2/8/18	2,336,000	0	2,336,000
	2050-68	5000	Valley City	Valley City Membrane Replacement Project	2/8/18	67,820	0	67,820
	2050-69	5000	Mandan	Sunset Reservoir Water Transmission Line	4/12/18	2,043,479	0	2,043,479
	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	0	840,000
	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	0	9,875,000
				TOTAL MUNICIPAL WATER SUPPLY		***64,162,128***	***5,032,488***	***59,129,641***
			Regional Water Supply:					
	1736-05	8000	SWPP	Southwest Pipeline Project	7/1/17	15,792,359	1,651,821	14,140,538
	2374	9000	NAWS	Northwest Area Water Supply	2/8/18	22,248,857	429,673	21,819,184
	1973-05	5000	WAWSA	WAWSA Phase IV	10/6/15	3,001,967	0	3,001,967
	1973-06	5000	WAWSA	WAWSA Phase V	12/8/17	6,226,640	4,730,331	1,496,309
	1973-07	5000	WAWSA	WAWSA Phase VI	6/19/19	5,476,000	0	5,476,000
	325-105	5000	RRVWSP	RRVWSP Garrison Diversion	8/23/17	4,000,000	2,000,000	2,000,000
				TOTAL REGIONAL WATER SUPPLY		***56,745,823***	***8,811,826***	***47,933,998***
			Rural Water Supply:					
	2050-34	5000	North Prairie RWD	Storage and Water Main	10/6/15	1,012,854	494,799	518,054
	2050-35	5000	Southeast Water Users Dist	System Wide Expansion Feasibility Study	8/23/17	3,248,377	1,434,708	1,813,669
	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	76,923	849,959
	2373-41	5000	North Central Rural Water Consortium	Granville-Deering Area	10/24/16	459,137	75,133	384,003
	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	925,032	411,605
	2050-60	5000	North Prairie Rural District	Reservoir 9 Water Supply	6/12/18	398,997	0	398,997
	2050-61	5000	North Prairie Rural District	Surrey/Silver Spring	6/12/18	38,289	0	38,289
	2050-63	5000	Walsh RWD	System Expansion Project	4/12/18	667,629	59,663	607,967
	2050-64	5000	McLean-Sheridan Water District	Turtle Lake Water Tower	8/9/18	846,065	216,727	629,338
	2050-65	5000	Tri-County Rural Water District	System Expansion Project	8/9/18	1,316,004	798,952	517,051
	2050-71	5000	East Central RWD	Grand Forks/Traill Project	12/7/18	2,004,028	607,656	1,396,372
	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	0	55,922
	2050-74	5000	Walsh RWD	Drayton Long-Term Water Supply Feasibility Study	5/8/19	37,500	18,750	18,750
	2050-77-19	5000	Dakota Rural Water District	2019 Expansion	6/19/19	461,250	30,000	431,250
	2050-78-19	5000	McLean-Sheridan Rural Water District	2019 Expansion	6/19/19	327,075	0	327,075
	2050-79-19	5000	Northeast Regional WD	Devtis Lake Water Supply Phase II	6/19/19	1,328,000	276,474	1,051,526
	2050-80-19	5000	Stutsman RWD	Phase 7	6/19/19	1,812,000	0	1,812,000
	2050-81-19	5000	South Central RWD	North Burleigh Water Treatment Plant	6/19/19	920,000	50,633	869,367
	2050-82-19	5000	Missouri West Water System	North Mandan/Highway 25 and Harmon Lake Area	8/8/19	1,095,000	0	1,095,000
	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	10/10/19	273,750	0	273,750
	2050-92-19	5000	East Central RWD	2019 Expansion Phase IV	10/10/19	375,000	0	375,000
	2050-93-19	5000	Greater Ramsey Water District	2019 Expansion	10/10/19	1,328,000	0	1,328,000
				TOTAL RURAL WATER SUPPLY		***34,144,919***	***5,436,538***	***28,708,381***
				TOTAL		***155,052,871***	***19,280,851***	***135,772,020***

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	Oct-19 Balance
			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	105,735,612	2,947,918	102,787,694
0	1771-01	5000	Grafton	Grafton Flood Control Project	10/12/16	12,284,127	3,255,101	9,029,025
0	1974	Rural	Souris River Joint WRD	Mouse River Rural Projects	6/19/19	40,351,930	1,739,474	38,612,455
0	1974	M-15	Souris River Joint WRD	Mouse River Municiple Projects carryover 2015-17	various	4,928,633	2,803,358	2,125,275
0	1974	M-17	Souris River Joint WRD	Mouse River Municiple Projects carryover 2017-19	various	29,402,346	3,714,274	25,688,072
0	1974	M-19	Souris River Joint WRD	Mouse River Municiple New Projects	6/19/19	34,650,000	23,016	34,626,984
SWC	2107-02	5000	City of Minot	SWIF 2018 Outfall Pipe Project	10/11/18	880,421	0	880,421
SE	2122	5000	US Army Corps of Engineers	Development of Comprehensive Plan for Souris Basin	9/5/17	156,428	54,286	102,142
0	1344-04	5000	Valley City	Sheyenne River Valley Flood Control Project PHII	8/29/16	4,531	92	4,440
0	1504-01	5000	Valley City	Permanent Flood Protection Project Phase I	5/1/15	49,556	7,415	42,141
0	1504-03	5000	Valley City	Permanent Flood Protection PH II	12/9/16	2,384,405	693,677	1,690,729
0	1504-06	5000	Valley City	Permanent Flood Protection PH III & PH IV	12/8/17	153,732	44,898	108,836
0	1504-07	5000	Valley City	Permanent Flood Protection PH III Construction	10/11/18	1,786,179	0	1,786,179
0	1504-08	5000	Valley City	Permanent Flood Protection Erosion Sites	4/9/19	480,283	0	480,283
0	1504-09	5000	Valley City	Permanent Flood Protection PH IV and V	10/10/19	11,610,554	0	11,610,554
SB 2371	1344-02	5000	Lisbon	Sheyenne River Valley Flood Control Project	8/8/16	103,971	0	103,971
0	1991-10	5000	Lisbon	Permanent Flood Protection - Levee F Project	4/12/18	457,173	1,294	455,880
0	1991-13	5000	Lisbon	Permanent Flood Protection - Levee C & E Extension	2/14/19	849,972	747,381	102,591
0	2079-01	5000	Williston	West Williston Flood Control	12/9/16	2,472,255	0	2,472,255
0	2131	5000	Lower Heart River WRD	Flood Risk Reduction Project	6/14/18	225,916	0	225,916
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	11/6/18	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	2129	5000	Burleigh County WRD	Sibley Island Flood Control Project	8/8/19	96,420	0	96,420
				Subtotal Flood Control		***250,321,425***	***16,032,182***	***234,289,243***
			Floodway Property Acquisitions:					
0	1993-05	5000	Minot	Minot Phase - Floodway Acquisitions	4/12/18	123,277	0	123,277
0	1974-MA19	5000	Minot Acqusitions	Minot Phase - Floodway Acquisitions	6/19/19	11,950,000	0	11,950,000
0	1974-RA19	5000	Rural Floodway Acquistions	Minot Rural - Floodway Acquisitions	6/19/19	3,225,000	235,378	2,989,622
SB 2371	1504-05	5000	Valley City	Valley City - Floodway Acquisitions	12/8/17	675,173	137,809	537,364
0	1991-05	5000	Lisbon	Lisbon - Floodway Acquisition	5/8/19	21,668	0	21,668
				Subtotal Floodway Property Acquisitions		***15,995,117***	***373,187***	***15,621,930***
				TOTAL FLOOD CONTROL		***266,316,543***	***16,405,369***	***249,911,173***
			Revolving Loan Fund: (General Water)					
			(Water Supply)					
				REVOLVING LOAN TOTAL		***0***	***0***	***0***
				TOTAL		***266,316,543***	***16,405,369***	***249,911,173***

SWC Board Approved to Continue ☐

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

WATER CONVEYANCE

Oct-19

Approved By	SWC No	Dept	Approved Biennum	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	0	378,976
SWC	1070	5000	2015-17	Maple River WRD	Drain #14 Channel Improvements	3/29/17	327,990	0	327,990
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	1180	5000	2017-19	Richland Co WRD	Legal Drain #7 Channel Improvements	12/7/18	200,812	175,506	25,306
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	1311	5000	2015-17	Traill Co. WRD	Buxton Township Improvement District No. 68	3/9/16	29,133	0	29,133
SWC	1314	5000	2015-17	Wells Co. WRD	Hurdsfield Legal Drain	3/29/17	644,292	0	644,292
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	52,612	248,889
SE	1638	5000	2019-21	Rush River WRD	Auka Ring Dike	10/30/19	24,374	0	24,374
SWC	1650	5000	2017-19	Sargent Co WRD	Sargent County Drain No. 7 Cost Overrun	6/19/19	114,227	0	114,227
SWC	1951	5000	2015-17	Maple River WRD	Lynchburg Channel Improvements	7/6/16	1,115,337	0	1,115,337
SWC	1978	5000	2015-17	Richland-Sargent Joint WRD	RS Legal Drain #1 Extension & Channel Improvemen	3/29/17	70,422	0	70,422
SWC	1990	5000	2011-13	Mercer Co. WRD	Lake Shore Estates High Flow Diversion Project	3/7/12	43,821	0	43,821
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	338,366	436,620
SWC	2068	5000	2015-17	Traill Co. WRD	Stavanger-Belmont Drain No. 52 Channel Impr	10/12/16	120,139	0	120,139
SWC	2087	5000	2015-17	Walsh Co. WRD	Drain #87/McLeod Drain	3/29/17	2,419,961	488,020	1,931,942
SWC	2088	5000	2015-17	Pembina Co. WRD	Drain No. 79	12/9/16	84,402	0	84,402
SE	2101	5000	2017-19	Walsh Co. WRD	Walsh Co Drain #90	4/11/19	70,603	0	70,603
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	56,000	0	56,000
SE	2133	5000	2017-19	Burleigh Co. WRD	Missouri River Section 32 Bank Stabilization Projects	4/11/19	22,500	0	22,500
SE	1413-01	5000	2017-19	Traill Co. WRD	Camrud Drainage Improvement District No. 79	4/11/19	14,557	0	14,557
SE	2093/1427	5000	2015-17	Bottineau Co. WRD	Moen Legal Drain	9/6/16	17,412	0	17,412
				Snagging & Clearing Projects:					
SE	662	5000	2015-17	Walsh Co. WRD	Park River Snagging & Clearing	2/17/17	25,608	0	25,608
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
SE	2110	5000	2015-17	Ward Co. WRD	Meadowbrook Snagging & Clearing	6/21/17	33,000	0	33,000
SWC	1868	5000	2019-21	Southeast Cass WRD	Wild Rice River Snag and Clear	8/8/19	120,000	0	120,000
SWC	568	5000	2019-21	Southeast Cass WRD	Sheyenne River Snag & Clear	8/8/19	294,000	0	294,000
SWC	1694	5000	2019-21	Pembina County WRD	Tongue River Snag and Clear	8/8/19	98,337	0	98,337
					TOTAL		10,772,979	1,054,504	9,718,475
					SWC Board Approved to Continue				

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

COMPLETED WATER CONVEYANCE

Approvec By	SWC No	Dept	Approved Biennum	Sponsor	Project	Approved Date	Total Approved	Total Payments	*Oct-19* Balance
SE	2069	5000	2017-19	Center Township	Center Township Bank Stabilization	B. Nangare	3,720	3,720	0
					SNAGGING & CLEARING PROJECTS				
					TOTAL		3,720	3,720	0

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

GENERAL PROJECTS

Approved By	SWC No	Dept	Approved Biennum	Sponsor	Project	Approved Date	Total Approved	Total Payments	Oct-19 Balance
				Hydrologic Investigations:					
SWC	2041	3000	2017-19	USGS	Stream Gage Joint Funding Agreement	12/7/18	694,531	139,469	555,062
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***	***194,469***	***610,062***
				Devils Lake Basin Development:					
SWC	416-10	4700		Operations	Devils Lake Outlet Operations	4/9/19	3,760,132	1,340,277	2,419,855
					Subtotal Devils Lake Basin Development		***3,760,132***	***1,340,277***	***2,419,855***
				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	0	122,595
SE	390	5000	2015-17	Logan County WRD	Beaver Lake Dam Rehabilitation Feasibility Study	6/8/16	2,140	0	2,140
SE	391	5000	2017-19	Sargent Co WRD	Silver Lake Dam Improvements	12/20/18	28,606	3,142	25,465
SWC	394	5000	2017-19	Golden Valley Co WRD	Odland Dam Rehabilitation Project	12/7/18	110,055	35,478	74,577
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	477	5000	2015-17	Valley City	Mill Dam Rehabilitation Feasibilty Study	6/8/16	2,937	0	2,937
SE	512	5000	2015-17	Emmons County WRD	Nieuwsma Dam Emergency Action Plan	11/28/16	6,720	0	6,720
SE	531	5000	2017-19	Benson Co WRD	Bouret Dam Rehabilitiation	12/20/18	31,843	0	31,843
SWC	531	5000	2017-19	Benson Co WRD	Bouret Dam Rehabilitiation	4/9/19	591,750	0	591,750
SWC	551	5000	2015-17	McHenry Co. WRD	Buffalo Lodge Lake Outlet	6/22/17	61,540	0	61,540
SE	561	5000	2015-17	City of Tioga	Tioga Dam EAP	5/20/16	40,000	0	40,000
SWC	688	5000	2017-19	Grand Forke Co WRD	Larimore Dam Rehabilitation	6/19/19	91,800	0	91,800
SWC	848	5000	2017-19	Sargent Co WRD	Brummond/Lubke Dam	10/11/18	280,043	192,439	87,604
SE	849-01	5000	2017-19	Pembina Co. WRD	Goschke Dam Spillway Gate Retrofit	4/9/19	119,010	0	119,010
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	0	70,699
SE	1264	5000	2013-15	Barnes Co WRD	Little Dam Repurposing Feasibility Study	6/17/15	12,385	6,588	5,797
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	0	64,334
SWC	1301	5000	2015-17	Richland Co. WRD	North Branch Antelope Creek NRCS Small Watershed	3/9/16	53,939	0	53,939
SWC	1303	5000	2015-17	Sargent Co WRD	Shortfoot Creek Watershed Planning Program	3/9/16	84,475	2,736	81,740
SWC	1389	5000	2013-15	Bank of ND	BND AgPace Program	8/8/19	180,365	20,000	160,365
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	1851-01	5000	2015-17	ND State Water Commission	Drought Disaster Livestock Water Supply Assistance	2/8/18	656,983	41,117	615,865
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	48,660	0	48,660
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
SB2009	1986	5000	2019-21	ND Dept of Agriculture	Wildlife Services	8/15/19	125,000	0	125,000
SE	2055	5000	2015-17	Red River Joint Water Resource Distrist	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	0	154,012
SWC	2060	5000	2017-19	Walsh Co. WRD	Matejcek Dam Rehabilitation	10/11/18	194,345	0	194,345
SE	2070	5000	2015-17	Garrision Diversion Conservancy Dist	Mile Marker 42 Irrigation Project	5/20/16	29,741	0	29,741
SE	2071	5000	2015-17	Foster County WRD	Alkali Lake High Water Feasibilitly 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	2074	5000	2015-17	City of Wahpeton	Flood Control - Levee Certification	7/6/16	247,500	0	247,500
SWC	2074	5000	2015-17	City of Wahpeton	Breakout Easements	7/6/16	265,000	0	265,000
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	0	106,188
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	2013	5000	2017-19	Walsh Co. WRD	Bylin Dam Rehabilitation	6/19/19	131,370	0	131,370
SE	2109	5000	2017-19	Logan County WRD	McKenna Lake Feasibility Study	6/21/17	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	153,480	446,520
SWC	2120	5000	2017-19	Apex Engineering	SWPP Transfer of Ownership Study	4/9/19	170,909	98,633	72,276
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	0	427,354
SE	1396-01	5000	2013-15	Trout, Raley, Montano, Witwer, & Freema	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	0	26,000
SWC	AOC/RRB	5000	2019-21	Red River Basin Commission	Red River Basin Commission Contractor	6/19/19	200,000	0	200,000
SWC	AOC/ASS	5000	2019-21	Assiniboine River Basin Inititiative	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/UPP	5000	2017-19	Upper Sheyenne River Joint WRB	USRJWB Operational Costs	6/20/17	0	0	0
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/MRJ	5000	2017-19	Missouri River Joint WRB	Board Operational Costs	6/7/17	0	0	0
SE	PS/WRD/LOW	5000	2015-17	Lower Heart WRD	Lower Heart Flood Contral Study	5/10/17	21,140	0	21,140
					Subtotal General Projects		***12,741,541***	***612,936***	***12,128,605***
					TOTAL		17,306,204	2,147,682	15,158,522
					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 Biennum	Sponsor	Project		Approved Date	Total Approved	Total Payments	*Oct-19* 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
SE	2090-02	5000	2017-19	International Water Instit	River of Dreams Program		6/6/18	8,331	8,331	0
SE	1270	5000	2015-17	City of Wilton	Wilton Pond Dredging Recreation Project		12/29/15	35,707	0	35,707
SE	1431	5000	2017-19	USGS	Rapid Deplyment Gage on the James River at Adrian		3/20/19	4,900	4,900	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
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			***1,086,144***	***1,029,597***	***56,547***
					TOTAL			1,086,144	1,029,597	56,547

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium

			MUNICIPLE/REGIONAL WATER SUPPLY			***October-19 Balance***
			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	9,570,000
	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
				MUNICIPLE/REGIONAL WATER SUPPLY OBLIGATED		***33,783,500***
				BALANCE		***51,216,500***
COMPLETED WATER SUPPLY - FUNDS TURNED BACK						
				MUNICIPLE/REGIONAL FUNDS TURNED BACK		***0***
				BALANCE PER PROJECT SUMMARY REPORT		***51,216,500***
				VARIANCE		***0***

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium

			RURAL WATER SUPPLY			***October-19*** Balance
				BUCKET TOTAL S.B.2020 2019-2021		***$ 37,200,000***
OBLIGATED THIS BIENNIUM						
	2050-77-19	5000	Dakota Rural Water District	2019 Expansion	6/19/19	461,250
	2050-78-19	5000	McLean-Sheridan Rural Water District	2019 Expansion	6/19/19	327,075
	2050-79-19	5000	Northeast Regional Water District	Devlis Lake Water Supply Phase II	6/19/19	1,328,000
	2050-80-19	5000	Stutsman Rural Water District	Phase 7	6/19/19	1,812,000
	2050-81-19	5000	South Central Regional Water District	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	10/10/19	273,750
	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
				RURAL WATER SUPPLY OBLIGATED		***9,910,075***
				BALANCE		***27,289,925***
COMPLETED RURAL WATER SUPPLY - FUNDS TURNED BACK						
						0
				RURAL WATER SUPPLY - FUNDS TURNED BACK		***0***
				BALANCE PER PROJECT SUMMARY REPORT		***27,289,925***
				VARIANCE		0

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium

					FLOOD CONTROL PROJECTS BUCKET		***October-19 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
						OBLIGATED 2019-2021	***95,141,754***
WATER CONVEYANCE OBLIGATED THIS BIENNIUM							
SWC	568	5000	2019-21	8/8/19	Southeast Cass WRD	Sheyenne River Snag & Clear	294,000
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
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 and Clear	98,337
SWC	1868	5000	2019-21	8/8/19	Southeast Cass WRD	Wild Rice River Snag and 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
						OBLIGATED 2019-2021	***1,517,961***
						SUBTOTAL OBLIGATED THIS BIENNIUM	***96,659,715***
						BALANCE OF S.B. 2020 BUCKET	***$ 33,840,285***
COMPLETED FLOOD CONTROL - FUNDS TURNED BACK							
COMPLETED WATER CONVEYANCE - FUNDS TURNED BACK							
						TOTAL FUNDS TURNED BACK	***0***
						BALANCE PROJECT SUMMARY WORKSHEET	***$ 33,840,285***
						VARIANCE	0

STATE WATER COMMISSION
PROJECT SUMMARY
2019-2021 Biennium

					GENERAL PROJECTS BUCKET			***October-19*** 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
SWC	989	5000	2019-21	6/19/19	USGS	Stream Gage Joint Funding Agreement		110,000
SWC	1389	5000	2019-21	8/8/19	Bank of ND	BND AgPace Program		150,000
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
						OBLIGATED 2019-2021		***3,267,211***
						BALANCE OF S.B. 2020 BUCKET		***$ 23,826,565***
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
						TOTAL FUNDS DEOBLIGATED		***56,547***
						BALANCE PROJECT SUMMARY WORKSHEET		***$ 23,826,565***
						VARIANCE		0

Appendix B

Comprehensive Project Priority List and Fundable List for 2020

Shaded projects are on the fundable list

APPENDIX B

Priority Ranking	Priority Points	Tracking No.	System Name	Present Population	Project Description	Project Cost ($1,000)	Construction Start Date	Est. Loan Term	Engineering Firm
120	11	1801056-18-01	Agassiz WUD	4,044	Service to users on private wells, transmission lines, connection between reservoirs	3,983	2020		AE2S
112	11	1801056-19-01	Agassiz WUD	4,044	Water main replacement (Oldham Ave)	258	2020		AE2S
39	16	4001153-14-01	All Seasons WUD	764	Parallel & looped pipelines to increase low pressure issues	796	2020		Bartlett & West
97	12	4001153-14-02	All Seasons WUD	754	Service to Turtle Mountains/Lake Metigoshe area	27,920	2020		Bartlett & West
40	16	4001153-15-01	All Seasons WUD	754	WTP & wellfield improvements, pipeline to connect systems	6,638	2020		Bartlett & West
231	6	2701506-20-01	Arnegard	300	Water main improvements	2,190	2020		Hyalite
106	11	0900035-11-01	Arthur	337	Water tower replacement	1,500	2020		Moore
175	8	0201058-20-01	Barnes RWD	5,037	Additional storage at five booster stations	1,250	2021		Interstate
24	18	1700059-14-01	Beach	1,019	Transmission main to connect north standpipe to south end of system	2,005	2021		AE2S
44	16	1700059-20-01	Beach	1,013	Water tower rehab	900	2021		AE2S
3	22	1700059-18-01	Beach[2]	1,019	Transmission main & lead service line replacement	4,536	2020	30	Highlands
165	8	4500065-15-01	Belfield	910	Transmission main	1,302	2020		AE2S
139	9	4500065-18-01	Belfield	910	Water main replacement	2,529	2020		AE2S
170	8	4500065-18-02	Belfield	910	Water storage rehab or replacement	3,090	2020		AE2S
1	27	2800069-19-01	Benedict[2]	67	Water main replacement	1,055	2020	30	Ulteig
233	5	5100072-18-01	Berthold	454	Gate valve, hydrant, & water main replacement	100	2021		Moore
252	3	5100072-18-02	Berthold	454	Water tower improvements	250	2020		Moore
67	13	2900074-20-01	Beulah	3,328	Water main, hydrant, gate valve, & service line replacement	2,000	2022		Interstate
137	9	0800080-19-01	Bismarck	70,536	Water main and lead service line replacement	3,520	2020		
207	6	0700114-20-01	Bowbells	335	Water tower site piping upgrades	172	2020		AE2S
238	5	0700114-20-02	Bowbells	335	Transmission line improvements	222	2020		AE2S
244	4	0600119-14-01	Bowman	1,800	Water main replacement (4th Ave W)	1,116	2021		Brosz
253	3	0600119-19-01	Bowman	1,800	Storage tank improvements	875	2021		Brosz
68	13	0900134-11-01	Buffalo	225	Water main, service line, gate valve, & hydrant replacement	1,900	2020		Moore
234	5	5100138-12-01	Burlington	1,191	Storage tank	1,650	2022		Ackerman-Estvold
163	8	5100138-18-01	Burlington	1,191	Water main & gate valve replacement	140	2020		Ackerman-Estvold
90	12	4800152-13-02	Cando	1,115	Water main replacement	1,800	No date		Moore
186	7	1600159-19-01	Carrington	2,220	Refinance of WTP improvements	3,661			Interstate
147	9	1600159-20-01	Carrington	2,220	Water main replacement & rehab	1,000	2020		Interstate
11	20	1900162-20-01	Carson	263	Water main replacement	3,230	2020		Interstate
138	9	0901060-16-01	Cass RWD	11,250	Transmission lines, distribution lines, & storage for correction of water quantity & pressure issues	2,750	2020		Bartlett & West
245	4	0900166-19-01	Casselton	2,513	Lead service line replacement	500	2021		Moore
183	7	0900166-20-01	Casselton	2,513	Water main, gate valve, & hydrant replacement	1,000	2020		Moore
75	13	3400170-18-01	Cavalier	1,203	Ground storage reservoir	2,000	2021		AE2S
71	13	3300174-18-01	Center	600	Water main replacement	1,820	2020		Ulteig
107	11	3900183-09-01	Christine	150	Water main, gate valve, & hydrant replacement	650	2020		Moore
4	22	2800194-20-01	Coleharbor	82	Water storage & pump house improvements	400	2020	20+	Moore
8	21	2800194-20-02	Coleharbor	82	Water main & service line replacement	1,500	2020	30	Moore
208	6	3900196-06-01	Colfax	151	Water main replacement	478	2020		Interstate
12	20	0700198-16-01	Columbus	133	Water main improvements	1,537	2020		Ackerman-Estvold
182	8	2001061-18-01	Dakota RWD	2,165	Service to users on private wells	6,200	2020		AE2S
102	11	0900217-11-01	Davenport	264	Pump station & water storage replacement, distribution system redundancy	785	2020		Interstate
13	20	020026-16-01	Dazey	104	Water main replacement & reservoir system upgrades	250	2020		Interstate
254	3	4500242-20-01	Dickinson	25,000	Water main looping	3,500	2020		KLJ

Priority Ranking	Priority Points	Tracking No.	System Name	Present Population	Project Description	Project Cost ($1,000)	Construction Start Date	Est. Loan Term	Engineering Firm
171	8	3400269-11-01	Drayton	824	Clearwell replacement	2,200	2021		AE2S
86	12	3400269-16-01	Drayton	824	Intake & WTP updates	7,800	2021		AE2S
80	12	1300276-20-01	Dunn Center	200	Distribution system improvements	8,122	2020		Hyalite
87	12	1801062-19-01	East Central RWD	8,823	Transmission lines, connections to other suppliers for redundancy, well improvements	5,488	2020		AE2S
89	12	1900303-20-01	Elgin	642	Storage tank rehabilitation	391	2020		Ulteig
113	11	3700314-02-01	Enderlin	1,082	Well field & transmission line	1,648	2020		Moore
148	9	3700314-02-02	Enderlin	1,082	Water main replacement	775	2020		Moore
149	9	3700314-02-03	Enderlin	1,082	WTP improvements	1,648	2020		Moore
114	11	3700314-08-01	Enderlin	1,082	Water tower replacement	1,957	2020		Moore
115	11	3900333-06-01	Fairmount	367	Water main, gate valve, & hydrant replacement	700	2020		Moore
217	6	0900336-11-01	Fargo	155,000	High service pump station modifications	9,071	2021		AE2S
218	6	0900336-11-02	Fargo	155,000	WTP residuals facility	37,132	2022		AE2S
187	7	0900336-18-02	Fargo	155,000	Lead service line replacement	530	2020		AE2S
219	6	0900336-20-01	Fargo	155,000	Risk assessment and emergency response plan	500			AE2S
146	9	0900336-20-02	Fargo	155,000	South regional connections & pipeline extensions	2,000	2020		AE2S
188	7	0900336-20-03	Fargo	155,000	Water main replacement	50,000	2020		AE2S
98	11	TBD	Fargo Moorhead Diversion Authority	19,500	Relocation of existing drinking water infrastructure for flood resiliency	30,000	2021		AE2S
108	11	3000342-20-01	Flasher	290	Curb stop & water meter replacement	349	2020		Ulteig
42	16	0700344-13-02	Flaxton	74	Water main, gate valve, & hydrant replacement	430	2020		Ackerman-Estvold
58	14	1100346-15-01	Forbes	53	Water main, service line, meter, gate valve, & hydrant replacement	1,500	2021		Moore
64	14	4100357-08-01	Forman	504	Water tower replacement	1,200	2020		Moore
32	17	4100357-14-01	Forman	504	Well improvements, transmission line replacement	750	2020		Moore
33	17	4100357-15-01	Forman	504	Distribution system upgrades	900	2020		Moore
2	23	2400380-19-01	Gackle[3]	310	Well, water meter, pump house, water tower, & water main replacement	1,300	2020	20+	Moore
25	18	0900387-06-01	Gardner	80	Water main replacement	400	2022		Moore
91	12	2800389-13-01	Garrison	1,453	WTP improvements	5,000	2020		Moore
61	14	2800389-13-02	Garrison	1,453	Water main replacement & looping	4,500	2020		Moore
132	10	2800389-15-01	Garrison	1,453	Intake structure replacement	2,000	2020		Moore
103	11	2801430-19-01	Garrison RWD	1,480	Water main, gate valve, & hydrant replacement; booster pump station, & ground storage tank	1,322	2020		Ackerman-Estvold
55	14	3000400-19-02	Glen Ullin	807	Water main replacement & looping	2,000	2021		Moore
140	9	3800397-13-01	Glenburn	380	Water main, gate valve, & hydrant replacement	1,640	2020		Moore
93	12	5000408-02-01	Grafton	4,913	Pretreatment & advanced oxidization WTP improvements	11,000	2025		AE2S
133	10	5000408-03-01	Grafton	4,913	Park River water intake improvements	1,354	2026		AE2S
134	10	5000408-16-01	Grafton	4,913	Raw water transmission line	2,156	2022		AE2S
94	12	5000408-16-02	Grafton	4,913	Red River water intake improvements	5,000	2022		AE2S
150	9	1800410-20-01	Grand Forks	56,236	Existing WTP decommissioning	4,885	2020		AE2S
121	11	1801062-15-01	Grand Forks-Traill RWD	6,750	Transmission lines	6,578	2020		AE2S
189	7	2500415-12-01	Granville	330	Water main & gate valve replacement	449	2020		Ackerman-Estvold
172	8	5300425-20-01	Grenora	350	Water main replacement	2,566	2021		Ackerman-Estvold
246	4	5300425-20-02	Grenora	350	Water main replacement (Jetson St)	535	2021		Ackerman-Estvold
128	10	5300425-20-03	Grenora	350	Storage tank replacement	3,225	2021		Ackerman-Estvold
78	12	5300425-20-04	Grenora	350	Water treatment & softening	3,080	2021		Ackerman-Estvold
209	6	5300425-20-05	Grenora	350	Well #1 rehabilitation	1,524	2021		Ackerman-Estvold
210	6	5300425-20-06	Grenora	350	Well #2 rehabilitation	1,811	2021		Ackerman-Estvold
109	11	1300432-19-01	Halliday	197	Water main replacement, booster station installation	2,000	2020		Interstate
220	6	3900433-20-01	Hankinson	919	Redundant raw water transmission main	2,000	2020		Bolton & Menk

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7	21	2000446-09-01	Hannaford	150	Water tower replacement & pump house improvements	1,200	2020	20+	Moore
31	17	5200458-16-01	Harvey	1,783	WTP improvements	650	2020		Moore
76	13	5200458-19-01	Harvey	1,783	Refinance of water main replacement	5,400			Moore
255	3	0900460-16-01	Harwood	718	Water main looping	1,000	2022		Moore
81	12	4900465-20-01	Hatton	777	Water tower replacement	1,700	2022		Moore
247	4	2900470-16-01	Hazen	2,411	Water tower	1,500	2020		Moore
141	9	3000473-20-01	Hebron	750	Water main replacement	980	2021		AE2S
200	7	4600487-08-01	Hope	258	Water main extension	200	2020		Moore
256	3	0900488-15-01	Horace	1,600	Water tower improvements	210	2020		Interstate
264	2	0900488-16-01	Horace	1,600	Water main, gate valve, & hydrant replacement	756	2020		Interstate
36	16	0900488-18-01	Horace	1,600	WTP improvements & elevated storage reservoir	5,915	2020		Interstate
239	5	0900488-20-01	Horace	1,600	Connection to Cass RWD & elevated storage reservoir	3,160	2020		Interstate
79	12	0900452-15-01	Hunter	261	Pump house upgrades, water tower replacement	2,100	2020		Moore
151	9	0900452-15-02	Hunter	261	Water main replacement	3,100	2020		Moore
221	6	4700498-09-01	Jamestown	16,000	Remote reading water meters & software	2,835	2020		Interstate
222	6	4700498-13-01	Jamestown	16,000	WTP, storage, & distribution system SCADA improvements	455	2020		Interstate
168	8	4700498-13-02	Jamestown	16,000	WTP filter controls & filter media replacement	860	2020		Interstate
143	9	4700498-14-01	Jamestown	16,000	Transmission line replacement (WTP to state hospital)	2,760	2020		Interstate
190	7	4700498-14-02	Jamestown	16,000	Transmission line to improve flow to NE pressure zone	4,968	2020		Interstate
191	7	4700498-18-01	Jamestown	16,000	Pitless unit well improvements	200	2020		Interstate
192	7	4700498-18-02	Jamestown	16,000	Water main replacement	1,653	2020		Interstate
223	6	4700498-18-03	Jamestown	16,000	Lime slaker improvements	290	2020		Interstate
224	6	4700498-19-01	Jamestown	16,000	Backwash recycle system	400	2020		Interstate
225	6	4700498-19-02	Jamestown	16,000	Water tower improvements	350	2020		Interstate
14	20	2300508-15-01	Jud	72	Distribution system & pump house improvements	300	2020		Moore
236	5	5100515-15-01	Kenmare	1,200	Water main, gate valve, & hydrant replacement	575	2020		Ackerman-Estvold
211	6	2300535-09-01	Kulm	354	Water tower replacement	1,200	2020		Moore
144	9	2300537-14-01	LaMoure	889	Water main replacement & looping	500	2020		Moore
193	7	2300537-20-01	LaMoure	889	Refinance of water tower replacement	1,000			Moore
122	10	1000543-09-01	Langdon	1,878	Water main replacement	2,000	2020		Moore
226	6	1000543-09-02	Langdon	1,878	Water tower improvements	450	2021		Moore
77	13	1800550-16-01	Larimore	1,346	Distribution system replacement	8,692	2020		AE2S
135	10	1800550-20-01	Larimore	1,346	Hydrant replacement	506	2020		AE2S
56	14	0300553-13-01	Leeds	427	Well & transmission line upgrades	375	2020		Moore
130	10	0300553-13-02	Leeds	427	WTP improvements	350	2020		Moore
152	9	0300553-13-03	Leeds	427	Lead service line replacement	650	2020		Moore
82	12	0300553-20-01	Leeds	427	Water main, gate valve, & hydrant replacement	475	2020		Moore
26	18	2600556-11-01	Lehr	80	Water main replacement	500	2021		Moore
22	18	3900567-16-01	Lidgerwood	652	Water main replacement	510	2020		Interstate
248	4	0800570-19-01	Lincoln	4,350	Water storage tank replacement	3,300	2020		SEH
100	11	3700574-11-01	Lisbon	2,154	Water well	150	2020		Moore
83	12	3700574-11-02	Lisbon	2,154	Water main replacement	2,500	2020		Moore
101	11	3700574-14-01	Lisbon	2,154	WTP upgrades	1,000	2020		Moore
62	14	5100593-13-01	Makoti	154	Well improvements	400	2021		Moore
18	19	5100593-13-02	Makoti	154	Water main replacement	2,000	2021		Moore
257	3	3000596-13-03	Mandan	22,519	Distribution system improvements (Boundary Road PRV)	568	2021		AE2S
235	5	3000596-16-03	Mandan	22,519	Raw water intake	22,100	2020		AE2S
249	4	3000596-19-01	Mandan	22,519	Reservoir replacement	3,056	2021		AE2S
212	6	0900613-16-01	Mapleton	1,034	Storage tank replacement	2,425	2020		Moore
99	11	0900613-20-01	Mapleton	1,034	Water main replacement & looping	500	2020		Moore

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153	9	2800619-18-01	Max	334	Water main & service line replacement	481	2020		Ackerman-Estvold
176	8	2800619-20-01	Max	334	Gate valve replacement	80	2020		Ackerman-Estvold
48	15	0500620-16-02	Maxbass	80	Water main, gate valve, & hydrant replacement	500	2020		Moore
52	15	4900622-16-01	Mayville	1,858	WTP upgrades	750	2020		Moore
17	19	4900622-20-01	Mayville	1,858	Water main, gate valve, & hydrant replacement	500	2020		Moore
27	18	4200626-19-01	McClusky	380	Water tower, transmission lines, & booster station	325	2021		Moore
53	15	4200626-19-02	McClusky	380	Water main, hydrants, & appurtenances	325	2021		Moore
43	16	4200626-19-03	McClusky	380	Lead service line replacement	325	2021		Moore
45	15	2801400-19-01	McLean Sheridan RWD	2,244	WTP & distribution system improvements	16,188	2020		AE2S
16	19	3200636-19-01	McVille	336	WTP improvements	600	2022		Moore
60	14	4700637-16-01	Medina	300	WTP & well improvements	800	2020		Moore
92	12	4700637-16-02	Medina	300	Water main replacement	2,600	2020		Moore
116	11	4700637-16-03	Medina	300	Water tower replacement	1,000	2020		Moore
177	8	4700637-16-04	Medina	300	Refinance of WTP improvements	80			Moore
258	3	3200653-13-01	Michigan	345	Water tower improvements	75	2021		Moore
84	12	4101425-19-01	Milnor	638	Control replacement, booster station renovation, generator, water main	490	2020		Moore
232	6	5000691-14-02	Minto	604	Portion of new public works building that is directly related to drinking water system	374	2020		AE2S
227	6	3001431-20-01	Missouri West WS	5,210	Increase capacity & flow to existing & new users in Harmon Lake area	752	2020		Bartlett & West
228	6	3001431-20-02	Missouri West WS	5,210	Increase capacity & flow to existing & new users north of Mandan along Hwy 25	1,062	2020		Bartlett & West
229	6	3800695-14-01	Mohall	808	Water main looping	426	2021		Ackerman-Estvold
123	10	3800695-18-01	Mohall	808	Water main replacement	295	2020		Ackerman-Estvold
57	14	3900703-11-01	Mooreton	197	Gate valve replacement, control upgrades, bladder tank storage	200	2020		Interstate
240	5	2400715-13-01	Napoleon	707	Service to residents on private wells	900	2020		Moore
184	7	2100726-20-01	New England	600	Water main replacement & looping	500	2020		Moore
37	16	1400732-12-01	New Rockford	1,391	Refinance of water main replacement, RO unit installation, & water tower improvements	4,734			Interstate
117	11	3000736-16-01	New Salem	911	Water main replacement- Phase 1	2,338	2020		AE2S
118	11	3000736-20-01	New Salem	911	Water main replacement- Phase 2	698	2020		AE2S
178	8	3100744-18-01	New Town	2,524	Gate valve & hydrant replacement	285	2020		Ackerman-Estvold
154	9	3100744-18-02	New Town	2,524	Water main & service line replacement	406	2020		Ackerman-Estvold
194	7	1200748-18-01	Noonan	144	Water main replacement	779	2020		Ackerman-Estvold
201	7	5101189-19-01	North Prairie RWD	11,025	Generators at reservoirs & booster stations	650	2021		Interstate
88	12	5101189-19-02	North Prairie RWD	11,025	Distribution system to serve Benedict as individual users	250	2021		Interstate
69	13	5101189-20-01	North Prairie RWD	11,025	Distribution system improvement	1,250	2021		Interstate
205	7	5101189-20-02	North Prairie RWD	11,025	Mountrail County rural water expansion	2,500	2020		Interstate
124	10	1100758-09-01	Oakes	1,856	Water reservoir, pumping station, & transmission line	720	2020		Moore
195	7	1100758-11-01	Oakes	1,856	WTP improvements	2,000	2020		Moore
196	7	1100758-11-02	Oakes	1,856	Well & well house replacement	400	2020		Moore
28	18	0300762-15-01	Oberon	104	Distribution system replacement	3,100	2020		Moore
19	19	0300762-15-02	Oberon	104	Well & pump house replacement	550	2020		Moore
46	15	0200763-09-01	Oriska	128	Reservoir & pump house replacement	550	2020		Moore
65	14	5000773-14-01	Park River	1,403	Water main replacement	1,692	2020		AE2S
213	6	3100775-19-01	Parshall	903	Water tower replacement	2,060	2021		AE2S
104	11	3100798-16-01	Plaza	171	Well & WTP rehab for emergency use	2,060	2020		AE2S
241	5	3100798-16-02	Plaza	171	Hydrant rehab or replacement	515	2020		AE2S
202	7	3100798-16-03	Plaza	171	Water tower	1,600	2020		AE2S

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259	3	0700800-19-01	Portal	150	Water main looping	150	2021		Ackerman-Estvold
260	3	0700800-19-02	Portal	150	Gate valve & hydrant replacement	235	2021		Ackerman-Estvold
155	9	4900803-08-01	Portland	606	Water tower replacement	1,350	2021		Moore
5	21	2800825-18-01	Riverdale	1,161	Water tower, WTP upgrades, & water main replacement	1,961	2020	20+	Ulteig
41	16	2200827-16-01	Robinson	37	Pumping system improvements & water main, gate valve, hydrant, & curb stop replacement	250	2020		Moore
95	12	4000833-19-01	Rolette	594	Water meter replacement, service to residents on private wells	450	2020		Moore
34	17	3500842-20-01	Rugby	2,815	Phase III of WTP upgrades, water main replacement	800	2022		
179	8	4100848-16-01	Rutland	163	Water main looping	500	2021		Moore
72	13	4100848-18-01	Rutland	163	Water tower replacement; piping, valving, & controls replacement in city's building that meters water purchased from Southeast WUD	1,000	2021		Moore
173	8	0200858-13-01	Sanborn	194	Water main, service line, gate valve, & hydrant replacement	625	2021		Moore
166	8	5100868-14-01	Sawyer	367	Water main, gate valve, & hydrant replacement	600	2020		Moore
237	5	3800877-15-01	Sherwood	256	Water main replacement	414	2020		Ackerman-Estvold
49	15	1400879-15-01	Sheyenne	204	Water main replacement	3,100	2020		Moore
38	16	0500887-20-01	Souris	100	Water main replacement	600	2021		Moore
214	6	4900891-19-01	South Heart	307	Water main & service line replacement	2,920	2021		Brosz
230	6	3901068-14-01	Southeast WUD	8,862	Automated meter reading system	2,000	2020		AE2S
243	5	3901068-14-02	Southeast WUD	8,862	Service to users on private wells	21,700	2020		AE2S
180	8	3901068-20-01	Southeast WUD	8,862	Consolidation or regionalization of water treatment	8,000	2021		AE2S
215	6	3100898-19-01	Stanley	2,400	Water main, service line, gate valve, & hydrant replacement	4,500	2021		Brosz
250	4	3100898-20-01	Stanley	2,611	Refinance of water main replacement	680			Brosz
35	17	4700922-12-01	Streeter	170	Water main extension & looping	500	2020		Moore
29	18	4700922-13-01	Streeter	170	WTP improvements	500	2020		Moore
21	19	4700922-13-02	Streeter	170	Well & pump house improvements	860	2020		Moore
30	18	4700922-19-01	Streeter	170	Water tower replacement	1,000	2020		Moore
160	9	4701303-16-01	Stutsman RWD	5,000	Water supply line, distribution system for Pettibone, mainline pipeline between reservoirs (Phase IV)	2,900	2020		Bartlett & West
181	8	4701303-18-01	Stutsman RWD	5,820	Water meter replacement & automated meter reading system	800	2020		Bartlett & West
59	14	4701303-19-01	Stutsman RWD	5,820	Service to Streeter	504	2020		Bartlett & West
110	11	4701303-19-02	Stutsman RWD	5,820	Connections between reservoirs & pump replacement	2,379	2020		Bartlett & West
206	7	4701303-19-03	Stutsman RWD	5,820	Refinance of phase III of system wide expansion & improvement project	3,150			Bartlett & West
70	13	4701303-19-04	Stutsman RWD	5,820	Transmission lines & WTP improvements to accommodate new well	2,558	2020		Bartlett & West
131	10	5200927-13-01	Sykeston	117	Water main, corporation, curb stop, & hydrant replacement	2,400	2020		Moore
129	10	5200927-18-01	Sykeston	117	Water tower replacement & pump house improvements	1,200	2020		Moore
174	8	5301152-16-01	Tioga	2,500	Water main replacement	8,602	2020		Ackerman-Estvold
161	9	0900945-09-01	Tower City	252	Water tower improvements	250	2020		Moore
50	15	0900945-12-01	Tower City	252	Water main & hydrant replacement	2,100	2020		Moore
136	10	0900945-19-01	Tower City	252	Refinance of gate valve & service line replacement	600			Moore
47	15	2500946-16-01	Towner	533	Water main, gate valve, hydrant, service line, & curb stop replacement	1,500	2020		Moore
119	11	2500946-16-02	Towner	533	WTP improvements	750	2020		Moore
162	9	3201072-19-01	Tri-County WD	2,662	Service to residents on private wells	3,525	2020		Bartlett & West
73	13	2800949-20-01	Turtle Lake	575	Water main replacement & looping	600	2020		Moore

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164	8	2200951-18-01	Tuttle	75	Transmission main & well pump replacement, tank repair	100	2020		
261	3	2800953-20-01	Underwood	1,000	Water meter replacement	250	2020		
51	15	2500956-16-01	Upham	133	Water main, gate valve, hydrant, & service line replacement	508	2020		Ackerman-Estvold
242	5	5101074-20-01	Upper Souris WD	1,365	Water meter replacement	555	2020		AE2S
156	9	0200958-19-01	Valley City	6,585	Water main & service line replacement (5th Ave NW)	400	2020		KLJ
157	9	0200958-20-01	Valley City	6,585	Water main & service line replacement	594	2020		KLJ
158	9	0200958-20-02	Valley City	6,585	2021 water main & service line replacement	825	2021		KLJ
85	12	2500964-19-01	Velva	1,265	Water main & service line replacement	483	2020		Ackerman-Estvold
15	20	2300969-12-01	Verona	85	Water main & meter replacement	515	2020		Moore
20	19	2300969-14-01	Verona	85	Reservoir & pump house replacement	300	2020		Moore
54	15	2300969-19-01	Verona	85	Water meter replacement	100	2020		Moore
145	9	3900973-04-01	Wahpeton	7,766	Water main replacement & looping (4th St, Oakwood Court, 8th Ave S, 5th Ave N)	284	2023		
74	13	3900973-16-01	Wahpeton	7,766	WTP improvements	10,707	2025		Stantec
125	10	3900973-18-01	Wahpeton	7,766	Water main replacement (12th St & Loy Ave)	1,326	2022		Interstate
126	10	3900973-18-03	Wahpeton	7,766	Water main replacement (15th Ave N & 14th St N)	1,102	2022		
197	7	3900973-18-04	Wahpeton	7,766	Water main replacement (8th Ave N)	1,715	2022		Interstate
159	9	3900973-19-01	Wahpeton	7,766	Well, well house, & water main	4,748	2023		
127	10	3900973-19-02	Wahpeton	7,766	Water main replacement (5th St)	4,738	2020		Interstate
198	7	3900973-20-01	Wahpeton	7,766	Water main & service line replacement (Dakota Ave side streets)	1,286	2024		Interstate
96	12	5001075-19-01	Walsh RWD	3,448	Service to residents on private wells, pipelines to increase capacity, & interconnection with NRWD	824	2020		AE2S
185	7	2800989-18-01	Washburn	1,313	Intake, wet well, & pump house	4,656	2020		AE2S
167	8	2700990-14-01	Watford City	6,500	Distribution system improvements	3,675	2020		AE2S
169	8	5301686-19-01	WAWSA	0	Additional transmission capacity for R&T WSCA service area, Stanley, & Powers Lake	12,500	2020		AE2S
251	4	5301686-20-01	WAWSA	0	Acquisition of Williston WTP	8,565			AE2S
142	9	0900999-19-01	West Fargo	35,000	Water main replacement	2,000	2020		Moore
216	6	5101447-16-01	West River WD	650	Service line replacement	453	2020		Ackerman-Estvold
199	7	0501001-09-01	Westhope	429	Water main & service line replacement	462	2020		Ackerman-Estvold
269	1	5201012-14-01	Williston	30,000	Distribution system improvements (Highland Heights)	5,253	2021		AE2S
265	2	5201012-19-02	Williston	30,000	Water main improvements (16th Ave)	426	2021		AE2S
266	2	5201012-19-03	Williston	30,000	Water main improvements (42nd St)	543	2021		AE2S
267	2	5201012-19-04	Williston	30,000	Water main improvements (47th St, 6th Ave, 44th St)	284	2021		AE2S
262	3	5201012-19-05	Williston	30,000	Water main improvements (Borsheim Addition)	906	2021		AE2S
268	2	5201012-19-06	Williston	30,000	Water main improvements (Front St & Reiger Dr)	597	2021		AE2S
263	3	5201012-19-07	Williston	30,000	Water main improvements (Sunset, Kettler, & Morelli Subdivisions)	721	2021		AE2S
105	11	0801031-18-01	Wilton	750	Water main replacement	5,052	2020		Ulteig
9	20	0801036-19-01	Wing	152	Water tower, water main, hydrant, & gate valve replacement	1,400	2020		Moore
23	18	0801036-20-01	Wing	152	Distribution system replacement	1,400	2020		Moore
203	7	2601037-18-01	Wishek	1,002	Water meters and meter reading software	410	2020		Interstate
204	7	2601037-20-01	Wishek	1,002	Hydrant replacement	350	2020		Interstate
111	11	2601037-20-02	Wishek	1,002	Iron & manganese removal equipment	1,200	2020		Interstate
66	14	3901043-08-01	Wyndmere	429	Distribution system improvements	1,000	2020		Bolton & Menk
63	14	3901043-16-01	Wyndmere	429	Service line, water meter, & SCADA system replacement	750	2020		Bolton & Menk
6	21	3901043-20-01	Wyndmere	429	Distribution system improvements (Phase I- from 3rd St to the east)	2,000	2020	30	Bolton & Menk

Priority Ranking	Priority Points	Tracking No.	System Name	Present Population	Project Description	Project Cost ($1,000)	Construction Start Date	Est. Loan Term	Engineering Firm
10	20	3901043-20-02	Wyndmere	429	Distribution system improvements (Phase II & III- from 3rd St to the west)	8,000	2022		Bolton & Menk

Total Project Cost: 676,339

[1] It is unknown at this time if mandatory additional subsidization will apply to the 2020 DWSRF allotment. To address this potential requirement, a funding level of $2,200,800 has been assumed for additional subsidization (as loan forgiveness). Adjustments will be made, as necessary, based on the actual requirements and capitalization grant amount.

[2] These projects appear eligible for 75% loan forgiveness. The actual loan forgiveness amount is dependent upon available funds. Loan forgiveness eligibility will be confirmed when the loan application is submitted.

[3] These projects appear eligible for 40% loan forgiveness. The actual loan forgiveness amount is dependent upon available funds. Loan forgiveness eligibility will be confirmed when the loan application is submitted.

[4] Estimated length of the loan term only. The loan term will be set at the time of loan approval.

APPENDIX C

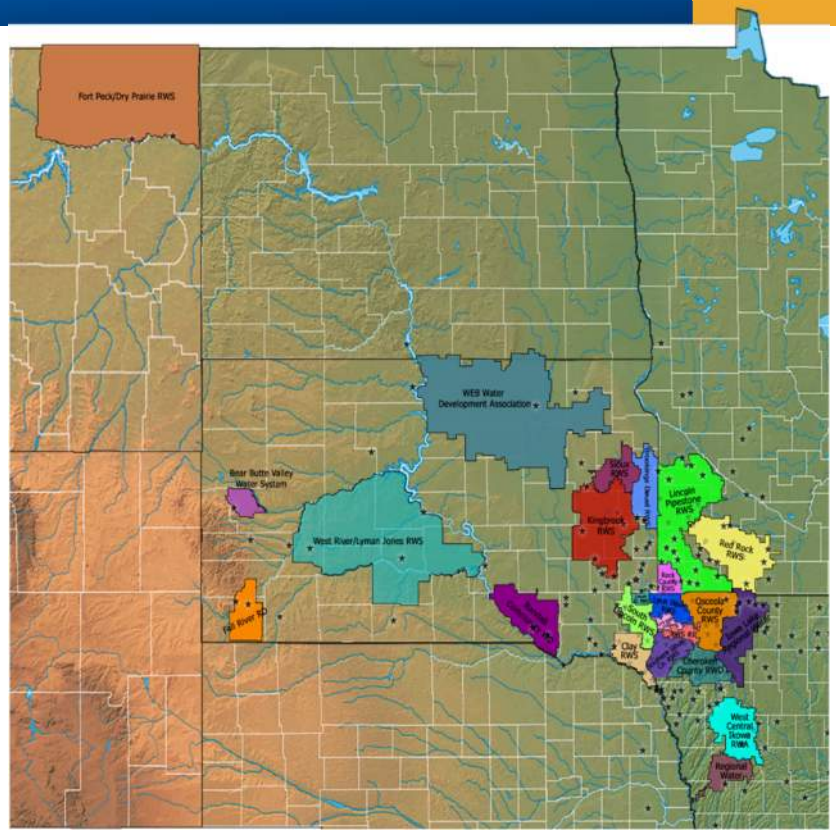
Southwest Pipeline Project
Transfer of Ownership
North Dakota State Water Commission

December 6, 2019

Mike Berg, PE – Apex Engineering Group
Matt Oedekoven, PE – DGR Engineering

Introductions

- Apex Engineering Group
  - Mike Berg, PE – Principal in Charge
  - Susan Hazelett, PE – Project Manager
- DGR Engineering
  - Matt Oedekoven, PE – Financial Analysis
  - Bruce Jennings, PE – Senior Engineer



DGR ENGINEERING Apex Engineering Group

Overview

- Project Scope
- Background
- Technical Memorandum #1
  - Capital Repayment
  - Water Rates
- Technical Memorandum #2
  - Comparative Analysis
- Questions/Comments

DGR ENGINEERING Apex Engineering Group

Project Scope

- Purpose
  - Evaluate the advantages and disadvantages of transferring the ownership of the Southwest Pipeline Project from the State to the Southwest Water Authority.
- Phase 1
  - Capital Repayment Evaluation
  - Comparative Analysis
- Phase 2 (not under contract)
  - Land & Facilities
  - Water Supply Contracts
  - Easements and Permits

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Background

- 1981 SB 2338: Appropriation of funds for design
  Creation of the Resources Trust Fund
- 1984 Supreme Court rules that bond financing is unconstitutional
  SWPP switched to a phased construction approach
- 1986 Groundbreaking, 90 mile raw water pipeline to Dickinson
- 1990 EPA Notices of Violation (Safe Drinking Water Act - fluoride)
- 1991 Service completed to the first water users (Dickinson)
  SWA created to develop and administer rural water distribution
- 1994 Service completed to all cities in EPA Violation
- 1996 SWA assigned all operations, management, & maintenance

Technical Memorandum #1

Capital Repayment and Rate Analysis

Capital Repayment

- Current Capital Repayment Model
  - 1982 Chiles, Heider and Co. Report
    - Capital Repayment based on "Ability to Pay"
    - Area could not fund project without State assistance
  - State Investment Limited to Initial Build Out
  - Capital Repayment set up in Perpetuity
    - Adjusted annually based on CPI

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Capital Repayment

- Basis for Forecasting the Current Capital Repayment Model
  - Population projections – 0.5% Annual Growth Rate
  - Rural Service Unit projections
    - 5,500 Standard Rural service units (2018)
    - 8,000 by 2028
    - 9,000 by 2050
  - Consumer Price Index 2.27%

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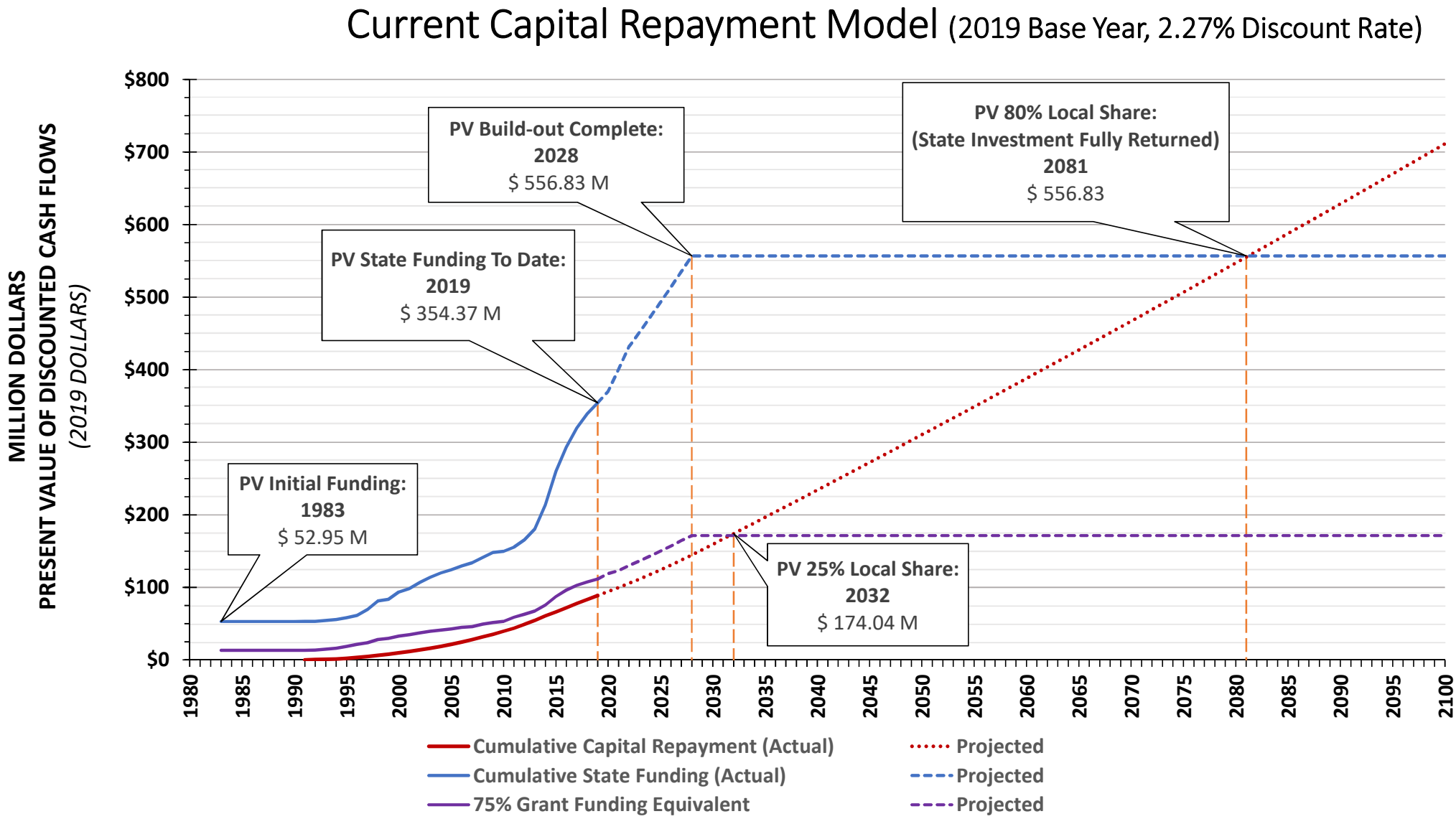
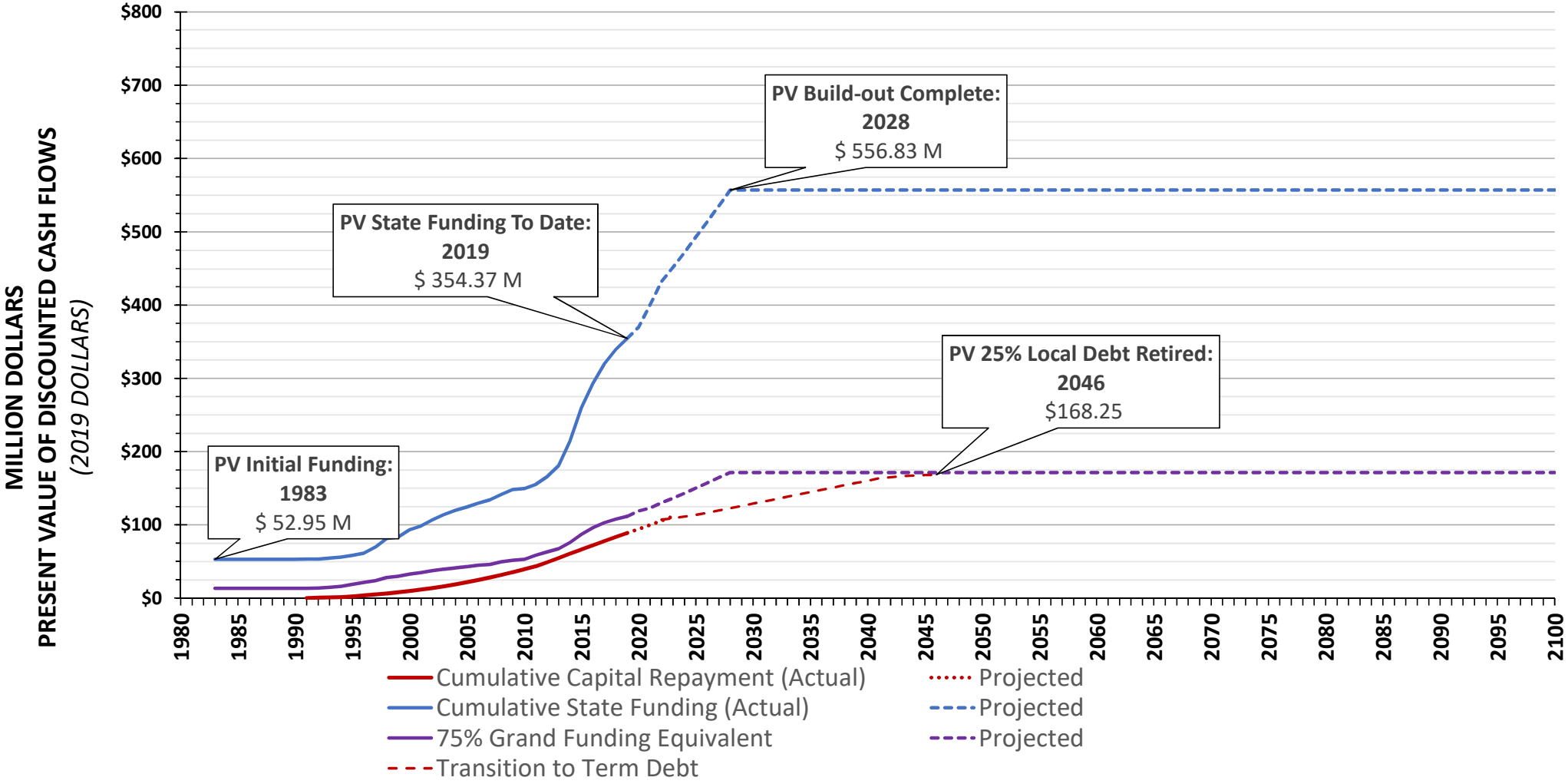

Current Capital Repayment Model (2019 Base Year, 2.27% Discount Rate)
MILLION DOLLARS
PRESENT VALUE OF DISCOUNTED CASH FLOWS
(2019 DOLLARS)
$800
$700
$600
$500
$400
$300
$200
$100
$0
1980
1985
1990
1995
2000
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
2075
2080
2085
2090
2095
2100
PV Build-out Complete:
2028
$ 556.83 M
PV 80% Local Share:
(State Investment Fully Returned)
2081
$ 556.83
PV State Funding To Date:
2019
$ 354.37 M
PV Initial Funding:
1983
$ 52.95 M
PV 25% Local Share:
2032
$ 174.04 M
Cumulative Capital Repayment (Actual)
Projected
Cumulative State Funding (Actual)
Projected
75% Grant Funding Equivalent
Projected

Alternative Capital Repayment - Transition to Termed Debt in 2023

2019 Base Year, 2.27% Discount Rate



Capital Repayment – Utility Basis Example

	YEAR 1	YEAR 10
Utility Plant in Service (Book Value of Assets)	$10 M	$10 M
Accumulated Depreciation	$1 M	$ 4 M
NET PLANT IN SERVICE	**$ 9 M**	**$ 6 M**
Rate of Return on Invested Capital	2%	2%
Annual Return on Invested Capital	**$0.18 M**	**$0.12 M**

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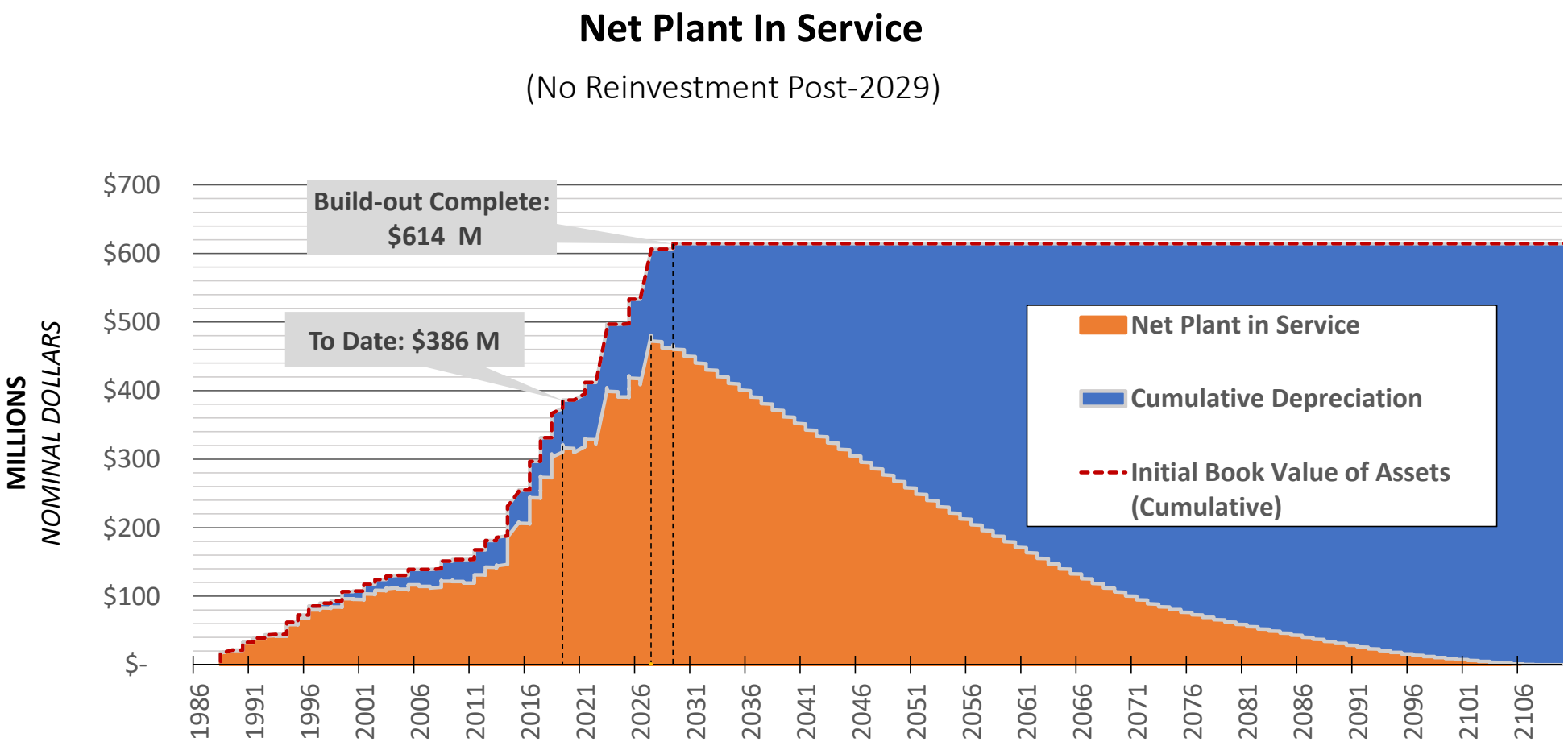
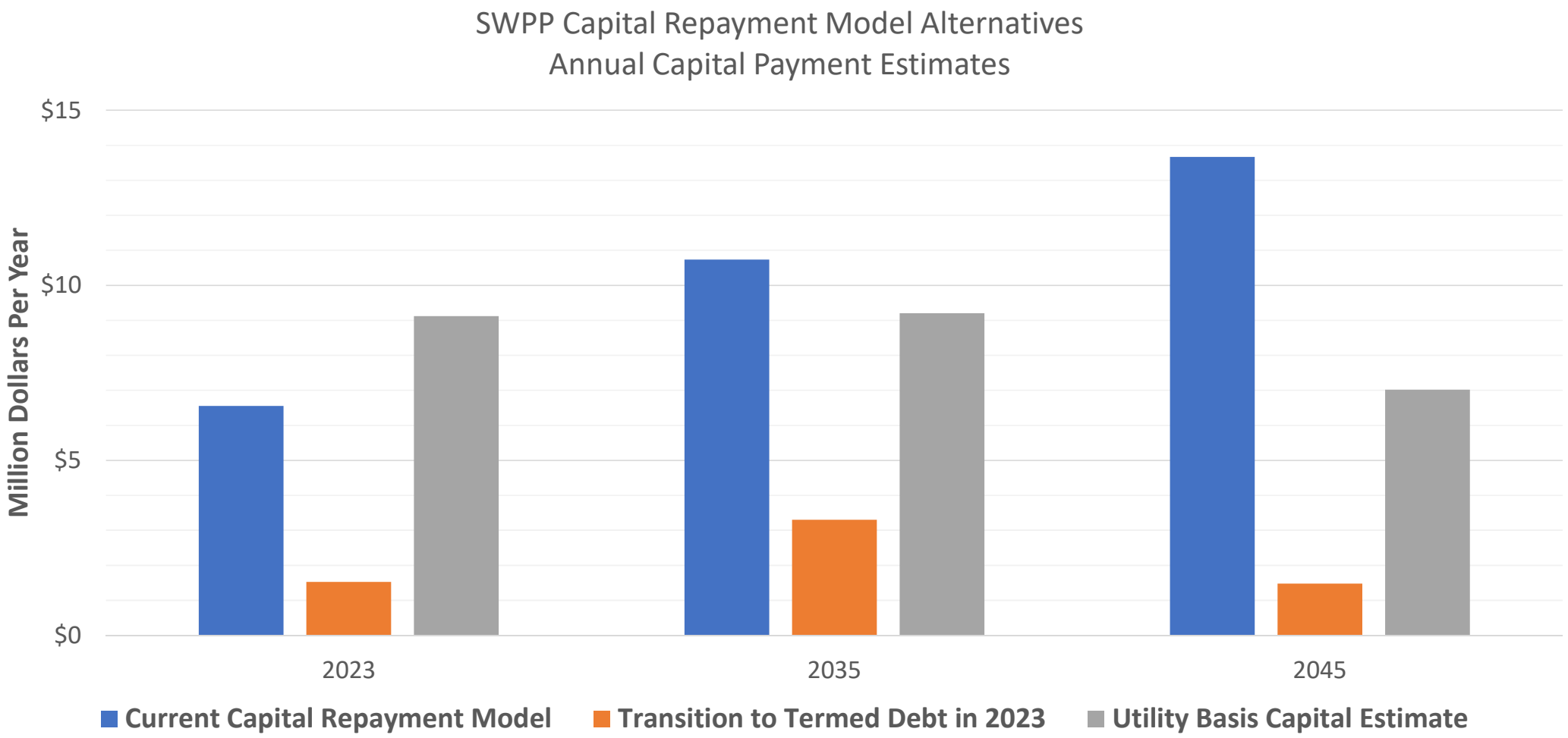
Capital Repayment – Utility Basis Alternative



Capital Repayment – Alternatives



Technical Memorandum #2

Comparative Analysis

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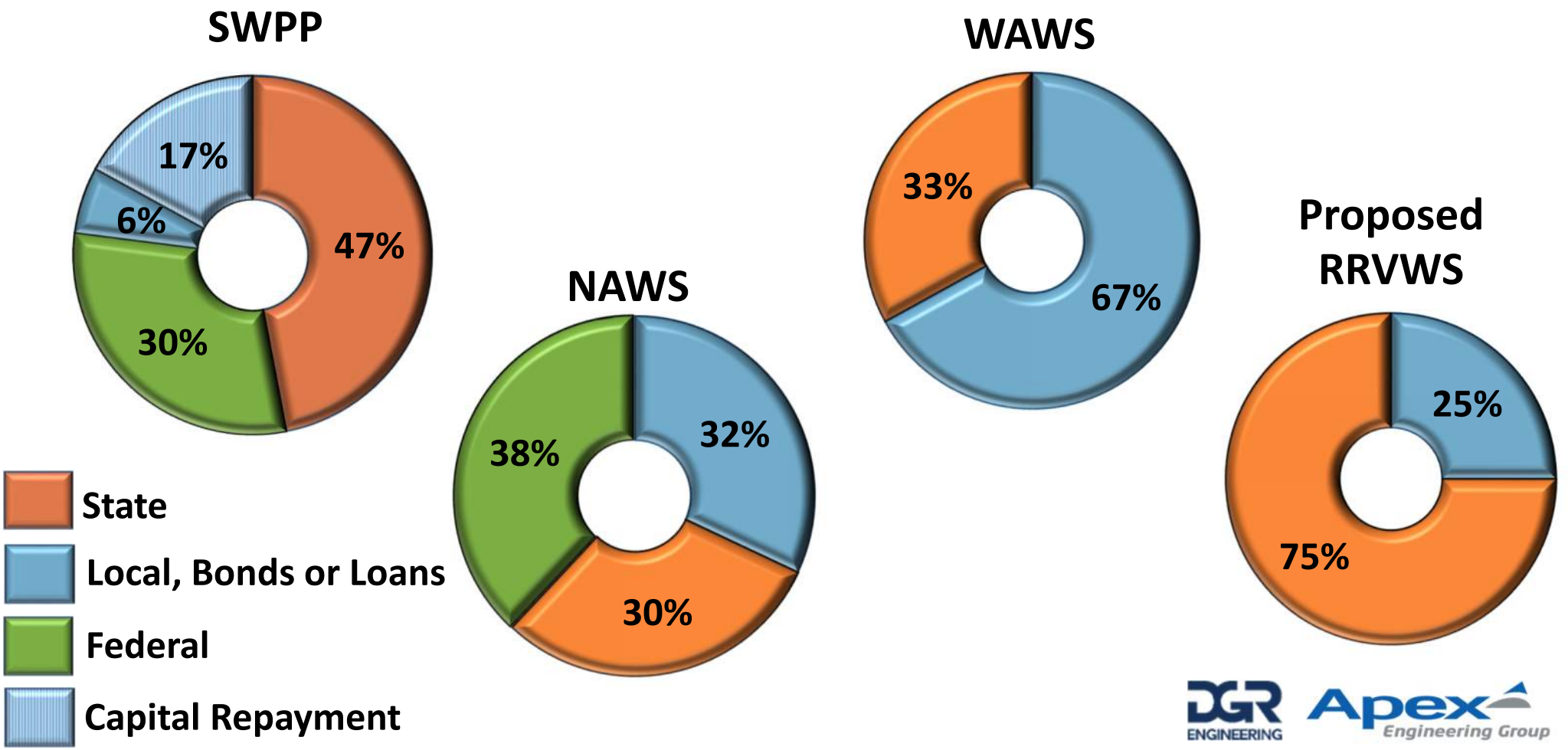
Apex Engineering Group

Project Funding to Date



Governance

- SWA/SWPP
  - 15 Board Members
    - Elected in City/County Elections
  - Serves areas in 12 Counties
  - SWC owns SWPP / SWA responsible for O&M
  - SWC manages construction
  - SWC approves rates
- WAWS
  - 10 Board Members
    - Appointed by governing boards of member organizations
  - Serves areas in 5 Counties
  - Owned and operated by WAWSA
  - SWC approves funding
- NAWS
  - 9 Board Members
    - Appointed by State Engineer
  - Serves areas in 10 Counties
  - SWC owns and sets Rates
- RRVWSP
  - Cosponsored by LAWA and GDCD
  - Operated by GDCD

Project Objectives

- Why develop these projects
  - Health and Safety
  - Economic Development
    - Industry
    - Quality of Life
  - Future Growth

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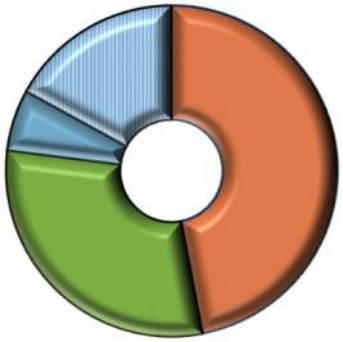
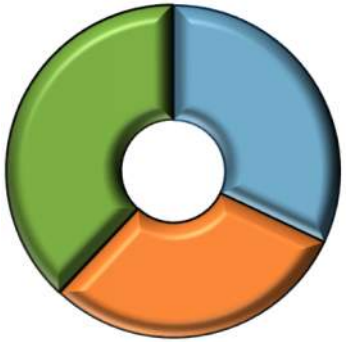
Policy Objectives

SWPP



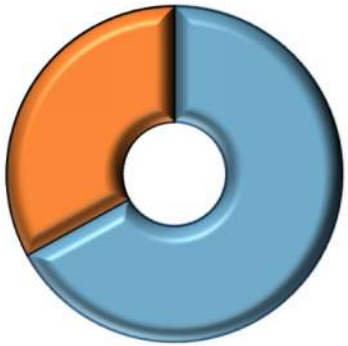
6 people/mi^2

NAWS



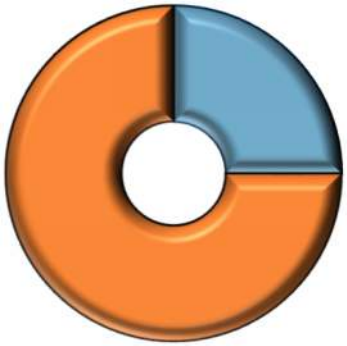
13 people/mi^2

WAWS



7 people/mi^2

RRVWS



16 (?) people/mi^2

- Affordability
- Fairness - Equivalency of Grants
- Fairness - Equivalency of Rates
- Economic Development / Return on Investment

Summary

- Under the current model, SWPP customers will eventually pay more in capital repayments than the State invested.
- Local control is politically important.
- Repayment requirements are dependent on policy objectives.

DGR ENGINEERING Apex Engineering Group

Questions / Comments

- 30 Day Comment Period
  - Send all comments to:
    - Susan Hazelett
    - 600 S. 2nd Street, Suite 145, Bismarck, ND 58504
    - 701.224.3101
    - Susan.Hazelett@ApexEngGroup.com
- Comments will be addressed in the Final Report
  - Presentation of Final Report to SWC

DGR ENGINEERING Apex Engineering Group

APPENDIX D

STATE WATER COMMISSION
SUMMARY of PROJECT FOUR YEAR PROGRESS REPORTS
2019-2021 Biennium
November 20, 2019

Sponsor	Project	Project Category	Approved Date	Total Cost	Cost-Share %	Cost-Share Approved	Total Payments	Oct-19 Balance
Barnes County WRD	Little Dam Repurposing Feasibility Study	General Water (feasibility study)	06/17/15	$46,500	35%	$ 16,100	$ 10,303	$ 5,797
Griggs County WRD	Thompson Bridge Outlet No. 4	Water Conveyance (rural flood control)	10/6/15	$1,443,408	35% pre-const 45% const	$ 621,661	$ 31,515	$ 590,146
Park River Joint WRD	North Branch Park River NRCS Watershed Study	General Water (flood control study)	10/6/15	$732,000	35%	$ 81,200	$ -	$ 81,200
Red River Joint WRD	Lower Red Basin Regional Detention Study	General Water (flood control study)	07/17/15	$130,000	35%	$ 45,000	$ -	$ 45,000
Valley City	Permanent Flood Protection Phase 1	Flood Control (flood protection)	05/01/15	$12,696,296	80%	$ 10,157,037	$ 10,114,896	$ 42,141
All Seasons WUD	System 4 Connection to System 1	Rural Water (improvement)	12/11/15	$6,638,000	75%	$ 4,900,000	$ -	$ 4,900,000
North Central Regional WD	Carpio-Berthold Phase II	Rural Water (improvement)	04/01/15	$4,066,667	75%	$ 3,050,000	$ 2,200,041	$ 849,959
North Prairie WD	Storage and Water Main	Rural Water (improvement)	10/06/15	$4,789,502	35% pre-const 75% const	$ 3,459,837	$ 2,941,783	$ 518,054
Dickinson	State Avenue South Water Main	Water Supply (municipal Improvements)	12/11/15	$1,650,000	35% pre-const 60% const	$ 965,000	$ 1,080	$ 963,920
Fargo	Fargo Regionalization Improvements	Water Supply (municipal Improvements)	07/29/15	$12,055,000	35% pre-const 60% const	$ 6,841,750	$ 4,870,464	$ 1,971,286
Minot	Water Systems Improvement	Water Supply (municipal Improvements)	10/06/15	$6,194,538	35% pre-const 60% const	$ 3,634,000	$ 3,062,856	$ 571,144
WAWSA	Phase IV	Water Supply (expansion)	10/06/15	$80,000,000	35% pre-const 75% const	$ 60,000,000	$ 56,998,033	$ 3,001,967
Williston	Water Systems Improvements	Water Supply (municipal Improvements)	10/06/15	$18,939,952	35% pre-const 60% const	$ 10,890,472	$ 3,033,462	$ 7,857,010
			TOTAL	$ 149,381,863		$ 104,662,057	$ 83,264,432	$ 21,397,626

Completed/De-obligated

Dickinson	Capital Infrastructure	Water Supply (municipal Improvements)	10/06/15					$ 1,731,926
Wilton	Wilton Pond Dredging Recreation	Recreation	12/29/15					$ 35,707
Sargent County WRD	Gwinner Dam Improvement Feasibility Study	General Water (feasibility study)	04/17/15					$ 19,681
							TOTAL	$1,787,313.34

APPENDIX E

NORTH Dakota | Water Commission
Be Legendary.

MEMORANDUM

TO: Governor Doug Burgum
Members of the State Water Commission
FROM: Garland Erbele, Chief Engineer-Secretary
SUBJECT: Capital Repayment and REM Rates for 2020 and SWA Budget
DATE: November 18, 2019

Under the agreement for the Transfer of Management, Operations, and Maintenance Responsibilities for the Southwest Pipeline Project, (Transfer Agreement) the Southwest Water Authority (SWA) must prepare a budget by December 15 of each year and submit it to the Secretary of the State Water Commission (SWC). The SWC received the budget on November 14, 2019. This budget is deemed approved unless the Chief Engineer-Secretary notifies the Authority of the Commission's disapproval by February 15.

SWA Budget:

Water rates are a primary component of the Authority's budgeting process. The SWC approves the capital repayment rate and Replacement and Extraordinary Maintenance (REM) rate explicitly by SWC action.

An amendment to the Transfer Agreement established the Consumer Price Index (CPI) in effect on September 1st (August CPI) as the basis for determining the capital repayment. In accordance with the amended Transfer Agreement, the September 1st CPI was used to calculate the capital repayment rate for 2020. The September 1st CPI this year was 256.6 versus 252.1 last year. The new capital repayment rates are $1.23 per thousand gallons for contract users and $37.62 per month for rural users. These compare with 2019 rates of $1.21 per thousand gallons for contract users and $36.97 per month for rural users. The 2019 Capital Repayment rate for the Morton County users is $29.28. Applying the CPI adjustment to this figure results in a 2020 rate for these users of $29.80 per month. The spreadsheet showing the calculation is attached to this memo. The 2020 budget, estimates a total of $5.3 Million in capital repayment from all Southwest Pipeline Project customers.

The rate for replacement and extraordinary maintenance (REM) was set by the Commission at its February 9, 1999, meeting at $0.35 per thousand gallons. The original rate of $0.30 per thousand gallons had been set in 1991. The SWA Board of Directors voted to increase the REM rate to $0.40

per thousand gallons for their 2013 budget. The REM rate was increased from $0.40 to $0.50 per thousand gallons in 2014, $0.50 to $0.55 per thousand gallons in 2015 and $0.55 to $0.65 per thousand gallons in 2016. For 2017, the SWA Board of Directors approved a water rate with no REM rate increase. For 2018, the REM rate was increased $0.05 to $0.70 per thousand gallons. For 2019 and 2020, the SWA Board of Directors approved a water rate with no REM rate Increase. The 2020 budget, shows a total REM income of $1.64 Million.

The SWA's budget proposes a $12.00 per thousand gallons water rate for oil industry contracts. The oil industry rate is not changed for 2020. The breakdown of the general oil industry rate is as follows: One third will be towards capital repayment, one third towards REM and the remaining third to SWA. For the SWA's water depot east of Dickinson, one fourth will be towards capital repayment, one fourth towards REM and the remaining half towards SWA. Higher percentage is allocated to SWA in order to mitigate SWA's maintenance cost at this depot and to help SWA fulfil their contract for purchasing Automatic Meter Reads.

The SWA's water rate for the contract customers in 2020 increases from $5.23 to $5.50 per thousand gallons. The increase of $0.27 is the total of $0.02 increase in capital repayment, $0.10 in treatment and $0.15 increase in transmission operation and maintenance rate.

The minimum monthly rate for rural customers in 2020 is increasing from $47.00 to $49.00. The breakdown of the monthly minimum is $37.62 towards capital repayment and $11.38 towards the operations and maintenance fee. The SWC receives $5.00 of operation and maintenance fee for the first two years, and then it goes to the SWA for fixed operation and maintenance. The usage rate for the rural customers increased from $5.91 to $6.26 per thousand gallons. The increase of $0.35 is the total of $0.25 increase in transmission operation and maintenance and $0.10 increase in distribution operation and maintenance.

Budget projections indicate the SWA will end 2020 with 2.68 months in operations and maintenance reserve.

Included in the SWA's budget is the budget for the REM funds. The estimated beginning balance in REM funds for 2020 is $21.08 Million; estimated income for 2020 is $2.07 Million; and estimated expenses for 2020 is $2.09 Million for a year-end balance of $21.06 Million. The possible expenses for 2020 from the REM fund include pump and motor replacements, air vacuum and blow off replacement, SCADA upgrades retainage payment, pipe relocation in road rights-of-way, cathodic protection of steel vaults, bid alternates approved on Contract 4-1E/4-2B and replacement of automatic meter read equipment which will become inoperable because of retirement of a satellite.

I recommend that the State Water Commission establish 2020 Capital Repayment

and REM rates as follows:
Capital Repayment for contract and rural customers: $1.23 per thousand gallons for contract users, $29.80 for rural users in Morton County with water service from Missouri West Water System, $37.62 per month for other rural users. Capital Repayment for oil industry contracts: $3.00 per thousand gallons for Dickinson Water Depot and $4.00 per thousand gallons for other oil industry contracts.

REM Rate: $0.70 per thousand gallons for the contract users, $0.80 per thousand gallons for rural users, $3.00 per thousand gallons for the SWA's Dickinson Water Depot and $4.00 per thousand gallons for other oil industry contracts.

GE:SSP:pdp/1736-99
Attachment

CAPITAL REPAYMENT RATE FOR 2020

CONTRACT RATES

September 2019 (August 2019) CPI:			256.6
Adjustment to Base:	0.3338279		768.5
Change from 448.4:		1.7	
Adjustment:		$	0.51
Base Capital Repayment Rate:		$	0.72
Adjusted Capital Repayment Rate (2020 rate)		$	1.23
2019 Rate:		$	1.21
Change from 2019 Rate		$	0.02

RURAL RATES

Base Capital Repayment Rate:	$	21.95
Adjustment:	$	15.67
2019 Inflation (Oct-Sep)		1.76%
2020 Rate:	$	37.62
2019 Rate:	$	36.97
Change from 2019 Capital Repayment Rate	$	0.65

Rural Minimum for 2019	$	47.00
Increase in Capital Repayment Rate	$	0.65
Increase in O&M Rates	$	1.35
2019 minimum	$	49.00
Capital Repayment for customers who tie into MWWS - 2019	$	29.28
Change from 2019 Rate	$	0.52
2020 Rate	$	29.80

5 Funding contributions provided by federal, other state, or other North Dakota state entities that supplant costs;

6 Work incurred outside the scope of the approved study or project; or

7 Local requirements imposed beyond State and Federal requirements for the project may be ineligible.

III. COST-SHARE APPLICATION AND APPROVAL PROCEDURES

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

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

1 Category of cost-share activity

2 Location of the proposed project or study area shown on a map

3 Description, purpose, goal, objective, narrative of the proposed activities

4 Delineation of costs

5 Anticipated timeline of project from preliminary study through final closeout

6 Potential federal, other state, or other North Dakota state entity participation

7 Documentation of an engineering selection process if engineering costs are anticipated to be greater than the threshold provided in NDCC 54-44.7-04

8 Engineering plans, if applicable

9 Status of required permitting

10 Potential territorial service area conflicts or service area agreements, if applicable

11 Sustainable operation, maintenance, and replacement plan for projects

12 Completed economic analysis worksheet for water conveyance and flood-related projects expected to cost two hundred thousand dollars or more. (Required at the time applications include a request for construction cost-share.)

13 Completed life cycle cost analysis worksheet for ~~municipal~~ water supply construction projects. 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.

14 Additional information as deemed appropriate by the Chief Engineer

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

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

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

1 Applicable engineering plans;

2 Field inspection, if deemed necessary by the Chief Engineer;

3 The percent and limit of proposed cost-share determined by category of cost-share activity and eligible expenses;

4 Assurance of sustainable operation, maintenance, and replacement of project facilities by the local sponsor;

5 Status of permitting and service area agreements;

6 Available funding in the State Water Commission budget, if in the State Water Plan, and a priority ranking when appropriate;

7 Results of economic analysis of water conveyance or flood-related projects, when applicable; and

8 Results of life cycle cost analysis for ~~municipal~~ water supply projects, when applicable.

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

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

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

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

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

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

The Chief Engineer may make partial payment of cost-sharing funds as deemed appropriate. Upon notice by the local sponsor that all work or construction has been completed, the Chief Engineer may conduct a final field inspection. If the Chief Engineer is satisfied that the work has been completed in accordance with the agreement, the final payment will be disbursed to the local sponsor, less any partial payment previously made.

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

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

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.

H. LIFE CYCLE COST ANALYSIS. Project sponsors seeking cost-share for construction of ~~municipal~~ 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

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

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

APPENDIX G

November 2019

Standard Operating Procedures
2019-2021 Biennium Cost-Share Program Administration

COST OVERRUNS

Projects approved in previous biennia, and the current biennium request increases in their approved amount of cost-share because of cost overruns. The following are various types of projects for which sponsors are requesting cost overrun assistance.

1. Projects approved for cost-share during the current biennium, and are requesting additional cost-share funding for overruns.

   SOP

   - Cost overrun requests in excess of $75,000 will be presented to the Commission for consideration.
   - Cost overrun requests of $75,000 or less will be considered by the Chief Engineer.

2. Projects approved for cost-share during past biennia, and are requesting current biennium cost-share funding or available carryover funds for overruns.

   SOP

   - Cost overrun requests in excess of $75,000 may be deferred for the first six months of the biennium before being presented to the Commission for consideration.
   - Cost overrun requests of $75,000 or less may be deferred for the first six months of the biennium before being considered by the Chief Engineer.

3. Projects that were denied or deferred for cost overrun funding during the previous biennium.

   SOP

   - Cost overrun requests in excess of $75,000 may be deferred for the first six months of the biennium before being presented to the Commission for consideration.
   - Cost overrun requests of $75,000 or less may be deferred for the first six months of the biennium before being considered by the Chief Engineer.

PROJECTS NOT SUBMITTED TO 2019 WATER DEVELOPMENT PLAN

Project sponsors will sometimes request cost-share funding for projects that are eligible under the agency's cost-share policy, but were not submitted or included in the current Water Development Plan (WDP). The following are various types of projects that are not included in the current WDP, but are submitted for cost-share consideration.

1. Projects that were, or were not identified in the previous biennium WDP, and are not included in the current WDP.

SOP

- These projects will be deferred for the first six months of the biennium for Commission consideration. (Exceptions are those projects considered to be an emergency – directly impacting human health and safety.)

LOW HEAD DAM REPAIRS – ROLLER EFFECT MITIGATION

Under the "Dam Safety and Emergency Action Plans" section of the Water Commission's cost-share policy it states "The intent of these projects is to return the dam to a state of being safe from the condition of failure, damage, error, accidents, harm or other events that are considered a threat to public safety." The following are various types of low head dam improvement projects that are submitted for cost-share consideration.

1. Dam breaches, removals, or rock rip rap.

SOP

- The Water Commission may cost-share up to 75% to mitigate public dangers associated with low head dam roller effects. Cost-share funding will be considered under this category for dam removals, or the placement of rock rip rap, but not both.

- Modifications, repairs, or removals that go beyond what is minimally required to mitigate roller effects may be cost-shared at lesser amounts – depending on the purpose for which the supplemental modifications or repairs are being made (i.e. recreation, water supply, flood control, irrigation, etc).

PROJECTS WITH BENEFIT TO COST RATIOS OF LESS THAN 1

Flood control and water conveyance projects with a total cost of $75,000 or more are required to complete the Water Commission's economic analysis worksheet, with the results ultimately presented to the Commission. The following are various types of results that a project may yield after completion of the economic analysis worksheet.

1. Projects that yield a benefit to cost ratio of 1:1 or greater.

SOP

- These projects will be considered by the Commission at the next regularly scheduled meeting.

2. Projects that yield a benefit to cost ratio of less than 1:1.

SOP

- These projects may be deferred for the first six months of the biennium for Commission consideration.

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WATER COMMISSION COST-SHARE APPLICATION CHECKLIST

(This checklist must be attached to all applications for Water Commission cost-share assistance.)

Project sponsors requesting cost-share assistance from the North Dakota Water Commission are required to submit completed applications, including all supplemental materials, at least 45 days in advance of meetings. Incomplete applications or those submitted after the 45 day deadline will not appear on the next meeting agenda. Project sponsors, or their authorized representative, must verify that the following information is included as part of their application package for cost-share assistance.

Project Sponsor (Please Initial)	Required SWC Cost-Share Application Materials
	Cost-Share Application Form (SFN 60439)
	Approved Drainage Permit (Rural Flood Control Only)
	Results Of Positive Assessment Vote (Rural Flood Control Only)*
	Sediment Analysis (Drain Reconstructions Only)
	Acquisition Plan (Flood Recovery Property Acquisition Program Only)
	Proof of HMGP Funding Ineligibility (Flood Recovery Property Acquisition Program Only)
	Life Cycle Cost Analysis Worksheet (Water Supply Projects Only)
	Economic Analysis Worksheet (Flood Control & Water Conveyance Projects Only)
	Capital Improvement Plan (Water Supply Projects Only)
	Map Of Project Location
	Detailed Project Costs

** A pre-application process is allowed for assessment projects. (See Project Funding Policy, Procedure, and General Requirements)*

I hereby certify that the information contained in this application for cost-share assistance is true and accurate, and all required materials have been provided with this application. I have read and understand the Water Commission's requirements for a completed application, and further understand that the submission of an incomplete application package will not be considered by the Water Commission for cost-share assistance.

Project Sponsor (Printed Name)	Project Sponsor (Signature)	Date

PLEASE NOTE

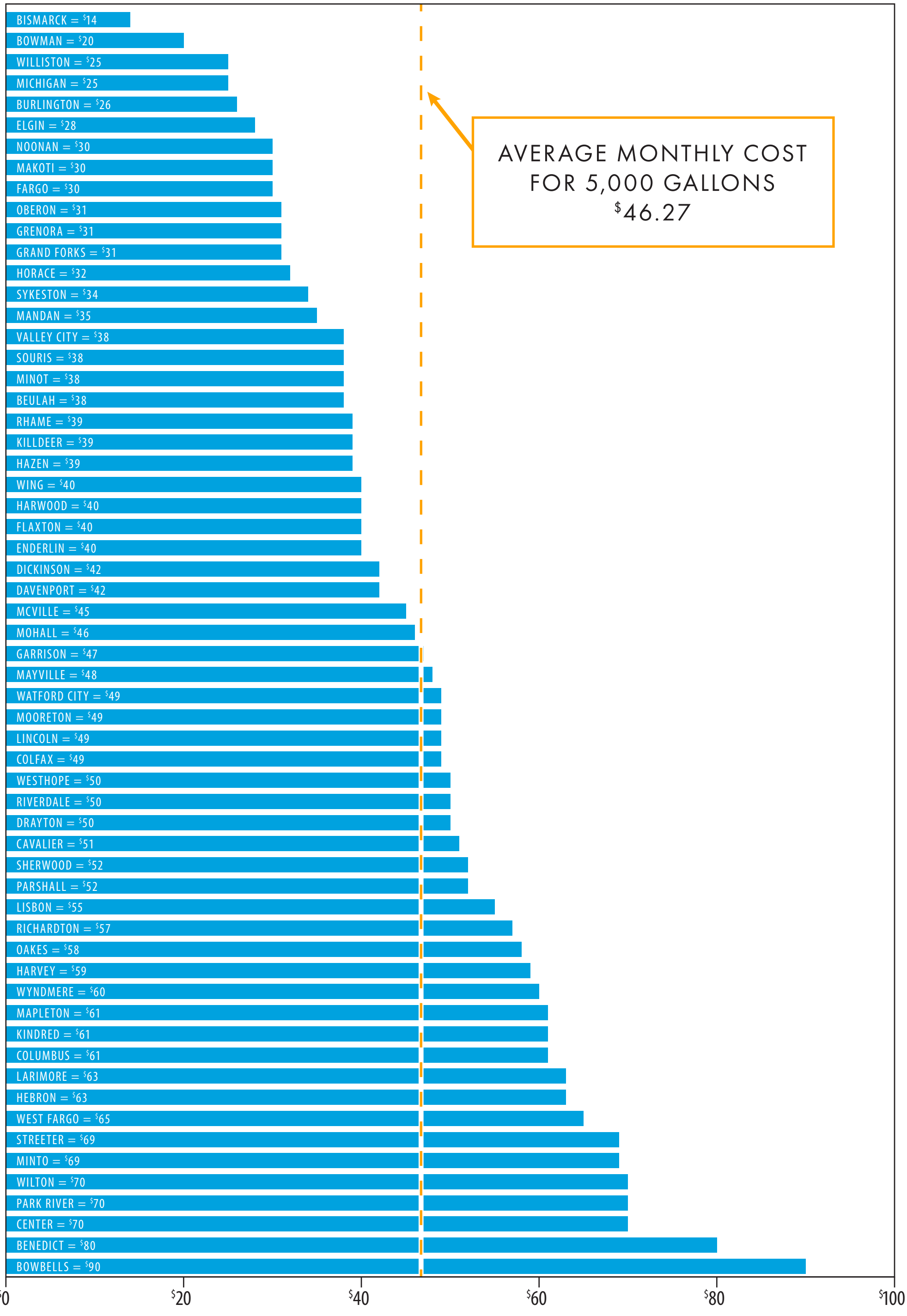
The cost-share application (SFN 60439); Life Cycle Cost Analysis Worksheet; Economic Analysis Worksheet; Project Funding Policy, Procedure, and General Requirements; and future meeting dates are available via the Water Commission website at swc.nd.gov. If you have questions, please call 701-328-4989 or email swccostshare@nd.gov.

Remaining Municipal Water Supply Projects

SYSTEM NAME	PROJECT NAME	PROJECT TYPE	SWC PRIORITY RANK	COST 5K Gal/Mo	WATER QUALITY	WATER QUANTITY	AFFORDABILITY	INFRASTRUCTURE ADEQUACY	REGIONALIZATION	OPERATOR SAFETY	TOTAL DEQ PRIORITY POINTS	POTENTIAL SWC C-S 2019-2021	ESTIMATED CUMULATIVE C-S REQUEST
Columbus	Water Main Improvements - Phase 1	WS Expansion	Moderate	61	0	0	14	5	0	0	19	$ 365,400	$ 365,400
Columbus	Water Main Improvements - Phase 2	WS Expansion	Moderate	61	0	0	14	5	0	0	19	$ 346,710	$ 712,110
Columbus	Water Main Improvements - Phase 3	WS Expansion	Moderate	61	0	0	14	5	0	0	19	$ 234,801	$ 946,911
Garrison	Water Supply & Treatment Expansion	WS Expansion	Moderate	47	0	0	7	3	0	0	10	$ 2,700,000	$ 3,646,911
Garrison	Water Transmission & Supply Line	WS Expansion	Moderate	47	0	0	3	2	1	0	6	$ 720,000	$ 4,366,911
Watford City	12th St NE (Between HWY 23 and 17th Ave N)	WS Expansion	Moderate	49	0	0	3	2	0	0	5	$ 390,000	$ 4,756,911
Watford City	14th St NW (Between 10th Ave NW and 17th Ave	WS Expansion	Moderate	49	0	0	3	2	0	0	5	$ 240,000	$ 4,996,911
Watford City	17th Ave NE (Between Pheasant Ridge & 12 St NE)	WS Expansion	Moderate	49	0	0	3	2	0	0	5	$ 282,000	$ 5,278,911
Watford City	17th Ave NW (Between Main St & 14th St NW)	WS Expansion	Moderate	49	0	0	3	2	0	0	5	$ 510,000	$ 5,788,911
Dickinson	North Side Water Storage Tank	WS Expansion	Moderate	42	0	0	1	3	0	0	4	$ 60,000	$ 5,848,911
Dickinson	Water Supply Improvements (6th St, 7th St, Sims St.)	WS Expansion	Moderate	42	0	0	1	2	0	0	3	$ 1,980,000	$ 7,828,911
Killdeer	HWBL Water	WS Expansion	Moderate	39	0	0	1	0	1	0	2	$ 294,000	$ 8,122,911
Killdeer	Southwest Utility Extension and Lift Station	WS Expansion	Moderate	39	0	0	1	0	1	0	2	$ 216,720	$ 8,339,631
Larimore	Install New Water Main & Appurtenances	WS Expansion	Moderate	63	Not Elig.	Not Elig.	Not Elig.	Not Elig.	Not Elig.	Not Elig.	Not Elig.	$ 231,750	$ 8,571,381
Mandan	New Raw Water Intake - Cost Overrun	WS Improvement	Cost Over	35								NA	
Benedict	Water Main Replacement	WS Repair or Replacement	Low	80	0	0	12	15	0	0	27	$ 921,043	$ 921,043
Wing	Refurbishing Water Tower	WS Repair or Replacement	Low	40	0	0	12	8	0	0	20	$ 630,000	$ 1,551,043
Harvey	Water Supply & Treatment Upgrades	WS Repair or Replacement	Low	59	0	0	13	7	0	0	20	$ 420,000	$ 1,971,043
McVille	WTP Upgrades - Joint Project With Tri-County Rural	WS Repair or Replacement	Low	45	0	0	12	7	0	0	19	$ 270,000	$ 2,241,043
Oberon	Well Installation	WS Improvement	Low	31	0	0	14	5	0	0	19	$ 159,500	$ 2,400,543
Larimore	City-Wide Water System Replacement	WS Repair or Replacement	Low	63	0	0	12	5	0	0	17	$ 2,700,000	$ 5,100,543
Elgin	ACP Replacement	WS Repair or Replacement	Low	28	0	0	14	3	0	0	17	$ 264,000	$ 5,364,543
Flaxton	Water Quality Treatment	WS Improvement	Low	40	0	0	14	3	0	0	17	$ 150,000	$ 5,514,543
Souris	Transmission Line Replacement	WS Repair or Replacement	Low	38	0	0	14	3	0	0	17	$ 105,000	$ 5,619,543
Lisbon	WTP Rehabilitation	WS Repair or Replacement	Low	55	0	0	6	9	0	0	15	$ 300,000	$ 5,919,543
Horace	Water Treatment Plant Upgrades	WS Improvement	Low	32	4	0	1	9	0	0	14	$ 1,218,000	$ 7,137,543
Makoti	New Wells & Transmission Line	WS Repair or Replacement	Low	30	0	0	10	4	0	0	14	$ 360,000	$ 7,497,543
Mayville	WTP Upgrades - Joint Project With Traill Rural	WS Improvement	Low	48	0	0	11	3	0	0	14	$ 180,000	$ 7,677,543
Park River	Water Main Update	WS Repair or Replacement	Low	70	0	0	11	3	0	0	14	$ 1,015,560	$ 8,693,103
Drayton	Water Treatment Plant Improvements	WS Improvement	Low	50	0	0	8	5	0	0	13	$ 2,163,000	$ 10,856,103
Enderlin	Water Tower Replacement	WS Improvement	Low	40	0	0	8	5	0	0	13	$ 1,173,000	$ 12,029,103
Lisbon	Water Main Looping	WS Improvement	Low	55	0	0	6	6	0	0	12	$ 246,000	$ 12,275,103
Enderlin	New Lime Softening WTP	WS Improvement	Low	40	0	0	6	5	1	0	12	$ 4,839,000	$ 17,114,103
Grenora	Water Tower Replacement	WS Improvement	Low	31	0	0	10	2	0	0	12	$ 2,220,000	$ 19,334,103
Center	Street and Utility Improvements	WS Repair or Replacement	Low	70	0	0	3	8	0	0	11	$ 70,800	$ 19,404,903
Lisbon	New Well Field & Raw Water Transmission Line	WS Improvement	Low	55	0	0	4	7	0	0	11	$ 336,000	$ 19,740,903
Minto	Stoltman's Addition Water Main Replacement	WS Repair or Replacement	Low	69	0	0	5	6	0	0	11	$ 418,200	$ 20,159,103
Enderlin	New Wells	WS Improvement	Low	40	0	0	8	3	0	0	11	$ 442,200	$ 20,601,303
Mayville	New/Replacement Transmission Lines & Related	WS Improvement	Low	48	0	0	8	3	0	0	11	$ 90,000	$ 20,691,303
Sykeston	Water System Improvements	WS Improvement	Low	34	0	0	7	3	0	0	10	$ 642,000	$ 21,333,303
Valley City	Water Improvements (NW and NE Quadrants)	WS Repair or Replacement	Low	38	0	0	4	6	0	0	10	$ 900,000	$ 22,233,303

SYSTEM NAME	PROJECT NAME	PROJECT TYPE	SWC PRIORITY RANK	COST 5K Gal/Mo	WATER QUALITY	WATER QUANTITY	AFFORDABILITY	INFRASTRUCTURE ADEQUACY	REGIONALIZATION	OPERATOR SAFETY	TOTAL DEQ PRIORITY POINTS	POTENTIAL SWC C-S 2019-2021	ESTIMATED CUMULATIVE C-S REQUEST
Drayton	Clearwell Replacement	WS Repair or Replacement	Low	50	0	0	7	3	0	0	10	$ 540,750	$ 22,774,053
Wyndmere	Distribution System Replacement	WS Repair or Replacement	Low	60	0	0	8	2	0	0	10	$ 2,000,000	$ 24,774,053
Mooreton	Replace Gate Valves	WS Repair or Replacement	Low	49	0	0	1	8	0	0	9	$ 120,000	$ 24,894,053
West Fargo	2nd St. E. Water Main Replacement	WS Repair or Replacement	Low	65	0	0	3	6	0	0	9	$ 300,000	$ 25,194,053
West Fargo	2nd St. W. Water Main Replacement	WS Repair or Replacement	Low	65	0	0	3	6	0	0	9	$ 300,000	$ 25,494,053
Sherwood	Water Supply Improvements	WS Repair or Replacement	Low	52	0	0	6	3	0	0	9	$ 367,750	$ 25,861,803
Westhope	Water Main Improvements	WS Repair or Replacement	Low	50	0	0	6	3	0	0	9	$ 360,000	$ 26,221,803
Oakes	New Well, Transmission Line, & WTP Expansion	WS Improvement	Low	58	0	0	6	3	0	0	9	$ 1,200,000	$ 27,421,803
Wilton	2019 Utility Improvements	WS Repair or Replacement	Low	70	0	0	5	3	0	0	8	$ 489,260	$ 27,911,063
Fargo	New Downtown Elevated Storage	WS Improvement	Low	30	0	0	6	2	0	0	8	$ 3,000,000	$ 30,911,063
Fargo	WTP Facility Plan - Phase 2 Existing Facility	WS Improvement	Low	30	0	0	6	2	0	0	8	$ 1,927,500	$ 32,838,563
Bowbells	Water Main Improvements	WS Repair or Replacement	Low	90	0	0	5	3	0	0	8	$ 79,200	$ 32,917,763
Fargo	Ozone AOP Improvements	WS Improvement	Low	30	0	0	6	2	0	0	8	$ 2,125,000	$ 35,042,763
Enderlin	Transmission Line	WS Improvement	Low	40	0	0	6	2	0	0	8	$ 330,000	$ 35,372,763
Beulah	Water & Waste Water Main Rehabilitation Project	WS Repair or Replacement	Low	38	0	0	1	6	0	0	7	$ 500,000	$ 35,872,763
Parshall	Parshall Water Tower	WS Improvement	Low	52	0	0	5	2	0	0	7	$ 1,200,000	$ 37,072,763
Lincoln	Water Tank Replacement	WS Improvement	Low	49	0	2	1	3	0	0	6	$ 1,268,000	$ 38,340,763
Hebron	80,000 Gallon Water Tower	WS Improvement	Low	63	0	0	3	3	0	0	6	$ 480,000	$ 38,820,763
Noonan	Water Main Replace	WS Repair or Replacement	Low	30	0	0	3	3	0	0	6	$ 317,856	$ 39,138,619
Fargo	Water Treatment Plant Residuals Facility	WS Repair or Replacement	Low	30	0	0	4	2	0	0	6	$ 8,000,000	$ 47,138,619
Rhame	Water Main Replacements	WS Improvement	Low	39	0	0	4	2	0	0	6	$ 266,900	$ 47,405,519
Richardton	Water Main Replacements	WS Repair or Replacement	Low	57	0	0	3	3	0	0	6	$ 621,000	$ 48,026,519
Kindred	Newport Ridge - Water Main Looping	WS Improvement	Low	61	0	0	3	2	0	0	5	$ 117,000	$ 48,143,519
Colfax	Water supply Looping Project	WS Repair or Replacement	Low	49	0	0	1	3	0	0	4	$ 286,800	$ 48,430,319
Hazen	New Water Tower/Storage System Expansion	WS Improvement	Low	39	0	0	1	3	0	0	4	$ 1,600,000	$ 50,030,319
Michigan	Water Tower Replacement	WS Repair or Replacement	Low	25	0	0	2	2	0	0	4	$ 300,000	$ 50,330,319
Harwood	Water Main Looping	WS Improvement	Low	40	0	0	1	2	0	0	3	$ 17,500	$ 50,347,819
Horace	Elevated Tank Improvements	WS Repair or Replacement	Low	32	0	0	0	2	0	1	3	$ 115,200	$ 50,463,019
Mohall	Water Main Looping	WS Improvement	Low	46	0	0	1	2	0	0	3	$ 216,000	$ 50,679,019
Bowman	Water Tank Rehabilitation	WS Repair or Replacement	Low	20	0	0	1	2	0	0	3	$ 447,000	$ 51,126,019
Killdeer	South Water Storage Reservoir	WS Improvement	Low	39	0	0	1	2	0	0	3	$ 270,000	$ 51,396,019
Williston	16th Avenue Water Main	WS Improvement	Low	25	0	0	0	2	0	0	2	$ 825,000	$ 52,221,019
Williston	42nd Street Water Main	WS Improvement	Low	25	0	0	0	2	0	0	2	$ 822,780	$ 53,043,799
Williston	47th Street Water Main	WS Repair or Replacement	Low	25	0	0	0	2	0	0	2	$ 414,000	$ 53,457,799
Williston	Front Street & Reiger Drive Water Main	WS Improvement	Low	25	0	0	0	2	0	0	2	$ 869,400	$ 54,327,199
Williston	Borsheim Addition	WS Improvement	Low	25	0	0	0	0	1	0	1	$ 1,320,000	$ 55,647,199
Williston	Sunset - Kettler Subdivisions	WS Improvement	Low	25	0	0	0	0	1	0	1	$ 1,050,000	$ 56,697,199
Dickinson	Water Utility Master Plan Update	Study	Low	42	0	0	1	0	0	0	1	$ 35,000	$ 56,732,199

MONTHLY MUNICIPAL WATER RATE COST FOR 5,000 GALLONS



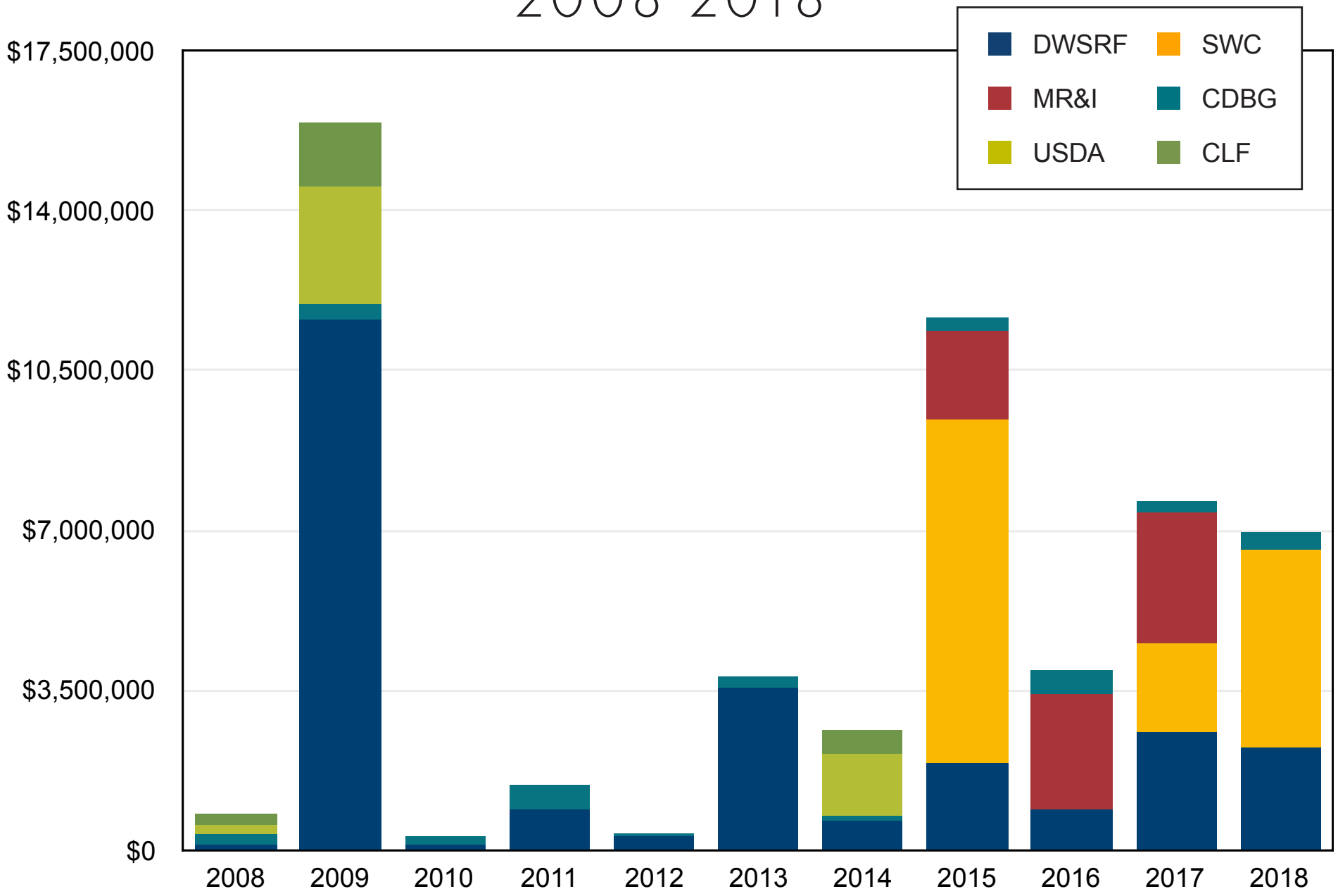
STORAGE INFRASTRUCTURE SUMMARY FOR CITIES

CITIES WITH POPULATION **> 5,000**	POPULATION REPRESENTED	AVERAGE AGE STORAGE (YEARS)	FUNDING NEEDS (MIL. $)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	86%	40	$74	$83	$205
State of ND Estimate			$86	$97	$238

CITIES WITH POPULATION **4,999 - 1,000**	POPULATION REPRESENTED	AVERAGE AGE STORAGE (YEARS)	FUNDING NEEDS (MIL. $)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	73%	37	$30	$35	$79
State of ND Estimate			$41	$48	$108

CITIES WITH POPULATION **< 1,000**	POPULATION REPRESENTED	AVERAGE AGE STORAGE (YEARS)	FUNDING NEEDS (MIL. $)		
			10 YEAR	20 YEAR	50+ YEAR
Responding Cities	33%	54	$41	$59	$80
State of ND Estimate			$124	$179	$242
EST. ND TOTALS	79%		$251	$324	$588

WATER TOWER FUNDING SOURCES 2008-2018



APPENDIX J

NORTH Dakota | Water Commission
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MEMORANDUM

TO: Governor Doug Burgum
State Water Commission Members
FROM: Garland Erberle, P.E., Chief Engineer-Secretary
DATE: November 14, 2019
SUBJECT: Proposed Low Head Dam Hazard Risk Assessment and Prioritization

At the April 2019 Commission meeting, staff were directed to develop an inventory of low head dams throughout the state. The Commission was presented with the current inventory at the August 19, 2019 meeting, along with a range of estimated costs to mitigate known low head dam risks. The Commission then directed staff to develop a process to prioritize the dams with a focus on human safety.

In developing a process for prioritizing low head dams for mitigation, staff started with two base assumptions. First, the hazard risk to people is a function of the probability of human encounters to the severity of the hazard. Second, there are conditions under which every low head dam is potentially a life or health risk.

With these assumptions in mind, staff propose to address risk by quantifying the probability of encounters with low head dams. The probability of an encounter has the following key elements.

1. Population in proximity to the hazard (Population Risk)
    a. Calculating cumulative population within various distances of low head dams.
2. Accessibility and Exposure (Exposure Risk)
    a. Dam distance to city limits, boat ramps, and parks.

In addition to the above risk elements, North Dakota's Dam Safety Engineer estimated the hazard severity of each individual dam. The engineer reviewed photos of structures and recorded values of high, medium, and low danger for each known structure - based upon their professional opinion.

From these values, staff developed a matrix with categories for prioritization of mitigation actions – including high, moderate, and low priorities.

		Population Exposure Risk					
		High		Medium		Low	Danger Class Total
Dam Danger	High	6	9	3	3	1	22
	Medium	13	8	0	6	6	33
	Low	6	11	2	3	12	34
Exposure Risk Class Total		25	28	5	12	19	89

Known deaths on record with the Dam Safety program were all represented by the highest category of risk. Staff have requested the State Epidemiologist provide any data the network of coroners may have on additional fatalities. These data requests have been forwarded to the counties by the State Epidemiologist's office. As additional information is received, the risk priorities will be evaluated and adjusted as appropriate.

Previously modified low-head dam construction cost averages were provided to the Commission at the August meeting. We applied those cost estimates to each risk group to estimate financial costs to mitigate currently known low-head dams (see table below). These costs are based on simple riprap solutions to mitigate the hazard, and do not include other design characteristics that project sponsors may wish to include.

Potential Cost to Mitigate (Riprap)				
Risk Rank	Count	Estimated Riprap Cost	Cumulative Cost	75% Cost-share
5	18	$ 8,209,728	$ 8,209,728	$ 6,157,296
4	25	$ 11,402,400	$ 19,612,128	$ 14,709,096
3	17	$ 7,753,632	$ 27,365,760	$ 20,524,320
2	14	$ 6,385,344	$ 33,751,104	$ 25,313,328
1	15	$ 6,841,440	$ 40,592,544	$ 30,444,408
Total	89	$ 40,592,544		

Along with the aforementioned prioritization information, a map of known low head dam locations has also been provided.

GE:dp/322

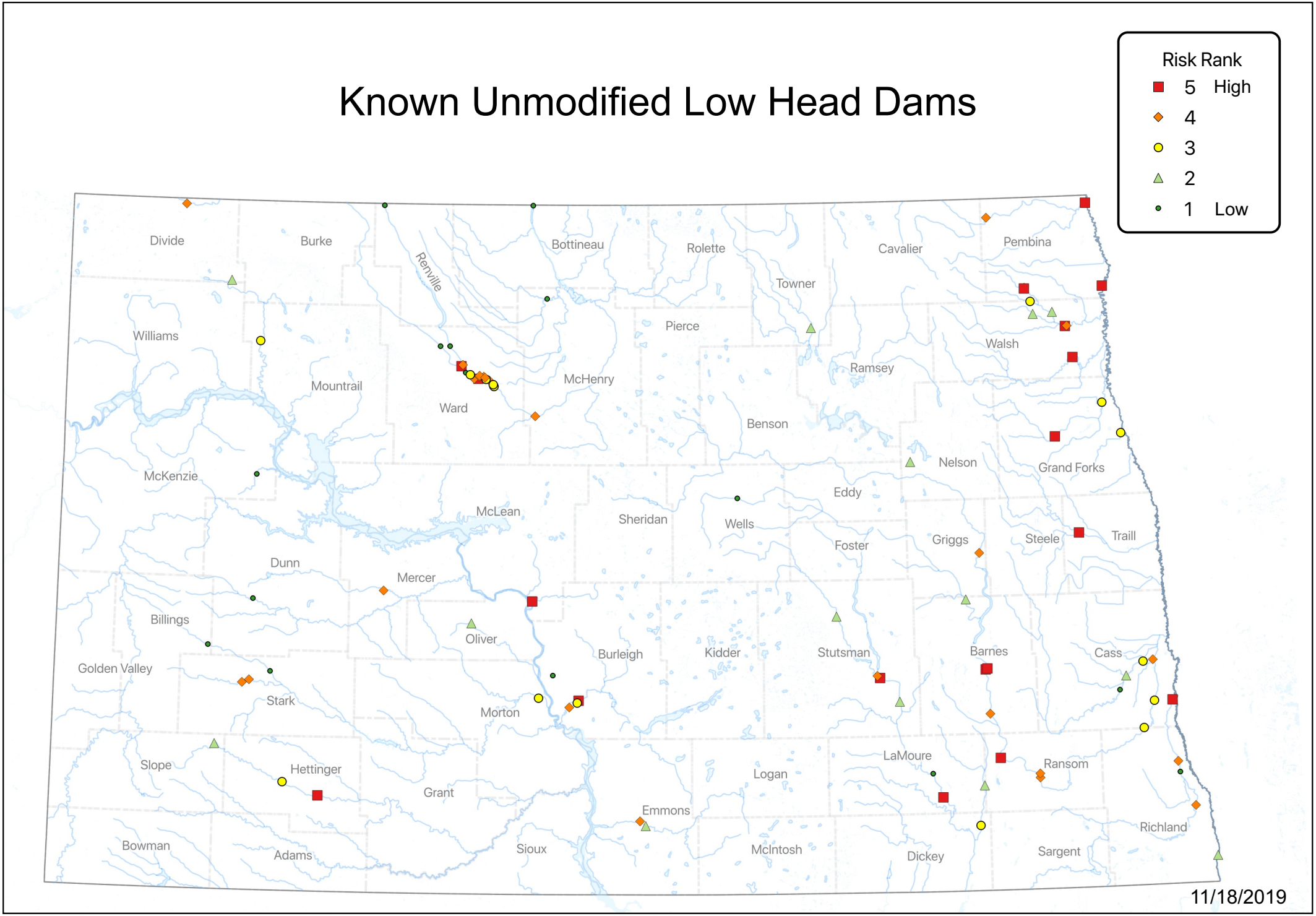
Draft Low-Head Dam Hazard Prioritization

September 23, 2019

	Dam Name	Primary Owner	Stream	Risk Rank
1	Minot Water Supply Dam	City of Minot	Mouse River	5
2	Grafton Railroad Dam	City of Grafton	Park River	5
3	Valley City Park Dam	Barnes County WRD	Sheyenne River	5
4	Valley City Mill Dam	Valley City Mun. Utility	Sheyenne River	5
5	139-064-01		James River	5
6	Portland Dam	City of Portland	South Branch Goose River	5
7	LaMoure City Dam	LaMoure County WRD	James River	5
8	Burlington City Park Dam	City of Burlington	Des Lacs River	5
9	Pembina City Dam	City of Pembina	Pembina River	5
10	Mott City Dam	City of Mott	Cannonball River	5
11	Minto Dam	City of Minto	Forest River	5
12	Katz Dam	McLean County WRD	Painted Woods Creek	5
13	Fort Ransom Dam	Ransom County WRD	Sheyenne River	5
14	Crystal Dam	Pembina County WRD	Cart Creek	5
15	Yegan Dam	Apple Creek Country Club	Apple Creek	5
16	Arvilla Park Dam	Grand Forks WRD	Turtle River	5
17	Wild Rice Dam (Cass County)	SE Cass WRD	Wild Rice River	5
18	Drayton Dam	City of Drayton	Red River	5
19	Brown Dam	Barnes County WRD	Sheyenne River	4
20	Forness Dam	Richland County WRD	Wild Rice River	4
21	Long Creek Dam	City of Crosby	Long Creek	4
22	Ueland Dam	City of Cooperstown	Sheyenne River	4
23	Tatley Dam	Burleigh County WRD	Apple Creek	4
24	Little Roosevelt Dam	Ward County WRD	Mouse River	4
25	Mann Dam	City of Dickinson	Heart River	4
26	East Broadway Dam	City of Dickinson	Heart River	4
27	Ward County Low Head Dam 1	CIty of Minot	Mouse River	4
28	Terracita Vallejo Dam	CIty of Minot	Mouse River	4
29	Oak Park Dam	Ward County WRD	Mouse River	4
30	Ramstad Dam	Ward County WRD	Mouse River	4
31	Big Roosevelt Dam	Ward County WRD	Mouse River	4
32	Soldiers Home Dam	ND Veterans Home	Sheyenne River	4
33	Jamestown Ice House Dam	City of Jamestown	James River	4
34	Lisbon Dam	City of Lisbon	Sheyenne River	4
35	Vigness Dam	City of Grafton	Park River	4
36	153-080-22		Mouse River	4
37	Walhalla Dam	Pembina County WRD	Pembina River	4
38	132-077-12	USGS	Beaver Creek	4
39	Burlington Dam 3	Bank of ND	Mouse River	4
40	Crystal Water Supply Dam	City of Crystal	Cart Creek	4
41	144-089-23		Spring Creek	4
42	ND No Name Dam 227	Maple River WRD	Maple River	4
43	Hanson Dam	Richland County WRD	Wild Rice River	4
44	152-050-32		English Coulee	3
45	Souris Court Dam	Ward County WRD	Mouse River	3
46	Eastside Estates Dam 1	City of Minot	Mouse River	3
47	157-053-13		Park River	3

48	138-050-24	USGS	Sheyenne River	3
49	139-081-33		Heart River	3
50	137-050-33	USGS	Sheyenne River	3
51	134-094-18	USGS	Cannonball River	3
52	White Earth Low Release Structure	Mountrail County WRD	White Earth River	3
53	Hoople Dam	Walsh County WRD	Park River	3
54	Manvel Dam	Grand Forks WRD	Turtle River	3
55	132-059-28	USGS	Bear Creek	3
56	138-079-09	USGS	Apple Creek	3
57	Eastside Estates Dam 2	CIty of Minot	Mouse River	3
58	Eastside Estates Dam 3	CIty of Minot	Mouse River	3
59	140-050-21		Maple River	3
60	155-083-17	USGS	Mouse River	3
61	Paulson Dam	Walsh	Middle Branch Park River	2
62	143-059-02	USGS	Baldhill Creek	2
63	150-061-04	USGS	Tolna Coulee	2
64	Brownlee Dam	Maple River WRD	Maple River	2
65	132-076-17		Beaver Creek	2
66	157-066-01	USGS	Mauvais Coulee	2
67	Knoke Dam	Sioux County WRD	Cedar Creek	2
68	143-065-31	USGS	Pipestem Creek	2
69	ND No Name Dam 296	LaMoure County WRD	Bear Creek	2
70	Ypsilanti Dam	Stutsman County WRD	James River	2
71	Nystrom Dam	Slope County WRD	Cannonball River	2
72	Fairmount Dam		Bois de Sioux River	2
73	Bubel Dam	Oliver County WRD	Square Butte Creek	2
74	Donelly Dam	Walsh County WRD	Park River	2
75	Green River Dam	Stark County WRD	Green River	1
76	Ambercrombie Dam	Richland County WRD	Wild Rice River	1
77	Minot Country Club Dam	Minot Country Club	Mouse River	1
78	Memorial Park Dam	LaMoure County WRD	James River	1
79	143-095-06	USGS	Knife River	1
80	156-084-05	USGS	Mouse River	1
81	140-080-30C	USGS	Burnt Creek	1
82	156-085-02	USGS	Des Lacs River	1
83	Fessenden Dam	Wells County WRD	James River	1
84	164-079-30	USGS	Mouse River	1
85	Great Northern Railroad Dam	Cass County WRD	Maple River	1
86	150-094-30	USGS	Bear Den Creek	1
87	141-098-14	USGS	Green River	1
88	164-087-33	USGS	Mouse River	1
89	159-079-22	USGS	Deep River	1

Known Unmodified Low Head Dams



APPENDIX K

PEMBINA COUNTY
WATER RESOURCE DISTRICT

308 Courthouse Drive #5
Cavalier, North Dakota 58220
Phone: 701-265-4511
Fax: 701-265-4165

June 18, 2019

RECEIVED
JUN 19 2019
STATE WATER COMMISSION

State Engineer
State Water Commission
900 East Boulevard
Bismarck, ND 58505

Re: Request for cost-share assistance

Dear Sir:

The Pembina County Water Resource District is requesting cost-share assistance for the construction of Drain 81 in Pembina County. Farmers experience frequent agricultural damages as a result of excessive run-off in the area. Bidding is expected on the project later this fall once easements are in place.

The Pembina County Water Resource District Board of Managers is hereby requesting cost-share assistance for the above described project. I have enclosed a copy of the engineer estimate as well as a plan set.

If you have any questions, please feel free to contact our office.

Sincerely,

Pembina County Water Resource District

LuAnn Kemp, Secretary

COST-SHARE REQUEST

NORTH DAKOTA STATE WATER COMMISSION
DEVELOPMENT DIVISION
SFN 60439 (5/2019)

RECEIVED
JUN 19 2019
STATE WATER COMMISSION

This form is to be filled out by the project or program sponsor with State Water Commission staff assistance as needed. Applications for cost-share are accepted at any time. However, applications received less than 45 days before a State Water Commission meeting will be held for consideration at the next scheduled meeting.

Please answer the following questions as completely as possible. Supporting documents such as maps, detailed cost estimates, and engineering reports should be attached to this form. If additional space is required, please use extra sheets as necessary.

For information regarding cost-share program eligibility see the *State Water Commission Cost-Share Policy, Procedure, and General Requirements* – available upon request or at www.swc.nd.gov.

Project, Program, Or Study Name
Pembina County Drain #81 Construction

Sponsor(s)
Pembina County

County	City	Township/Range/Section
Pembina	Cavalier	Elora Township

Description Of Request ☑ New ☐ Updated (previously submitted)

Specific Needs Addressed By The Project, Program, Or Study
Improved agricultural drainage in the area east of Crystal

If Study, What Type ☐ Water Supply ☐ Hydrologic ☐ Floodplain Mgmt. ☐ Feasibility ☐ Other

If Project/Program

☐ Flood Control	☐ Multi-Purpose	☐ Bank Stabilization	☐ Dam Safety/EAP
☐ Recreation	☐ Water Supply	☐ Snagging & Clearing	☐ Property Acquisition
☐ Irrigation	☐ Water Retention	☑ Rural Flood Control	☐ Other

Are Connections Of New Rural Customers Located Within The Extra-Territorial Jurisdiction Of Municipality? ☐ Yes ☒ No

Jurisdictions/Stakeholders Involved
Pembina County

Description Of Problem Or Need And How Project Addresses That Problem Or Need
Pembina County Drain #81 was petitioned by area farmers to address flooding from overland water. Agricultural drainage will be improved for landowners in the basin. The drain will discharge into Drain 67A and provide improved drainage with better control to the area. Landowners will cast ballots for the project in July 2019.

Has Feasibility Study Been Completed?	☐ Yes	☐ No	☐ Ongoing	☑ Not Applicable
Has Engineering Design Been Completed?	☑ Yes	☐ No	☐ Ongoing	☐ Not Applicable
Have Land Or Easements Been Acquired?	☐ Yes	☐ No	☑ Ongoing	☐ Not Applicable

Have You Applied For Any State Permits?	☑ Yes	☐ No	☐ Not Applicable

If Yes, Please Explain
Drain permit

Have You Been Approved For Any State Permits?	☐ Yes	☐ No	☐ Not Applicable

If Yes, Please Explain

Have You Applied For Any Local Permits?	☐ Yes	☐ No	☑ Not Applicable

If Yes, Please Explain

Have You Been Approved For Any Local Permits?	☐ Yes	☐ No	☑ Not Applicable

If Yes, Please Explain

Briefly Explain The Level Of Review The Project Or Program Has Undergone (attach additional documents as needed)
Project has been engineered, the hearing and vote will be held in July 2019, project is expected to bid in late 2019.

Do You Expect Any Obstacles To Implementation (i.e., problems with land acquisition, permits, funding, local, opposition, environmental concerns, etc.)? No, the project is recieving support from landowners

Funding Timeline (carefully consider when SWC cost-share will be needed)

Source	Total Cost	2017-2019 7/1/17-6/30/19	2019-2021 7/1/19-6/30/21	Beyond 7/1/21
Federal	$	$	$	$
State Water Commission	$ 290,832.00	$	$ 290,832.00	$
Other State	$	$	$	$
Local	$ 355,461.00	$	$ 355,461.00	$
Total	$ 646,293.00	$ 0.00	$ 646,293.00	$ 0.00

List All Other State Of North Dakota Funding Sources (Grant or Loan), For Which You Have Applied

Please Explain Implementation Timelines, Considering All Phases And Their Current Status
Bidding is expected late 2019 with construction in 2020

Have Assessment Districts Been Formed?	☑ Yes	☐ No	☐ Ongoing	☐ Not Applicable

Submitted By Pembina County Water Resource District			Date 6/18/2019
Address 308 Courthouse Drive #5	City Cavalier	State ND	ZIP Code 58220
Telephone Number 701-265-4511		Engineer Telephone Number 701-256-5728	
Sponsor Email Address llkemp@nd.gov		Engineer Email Address Dan Fischer <dfischer@utma.com>	

I Certify That, To The Best Of My Knowledge, The Provided Information Is True And Accurate.

Signature	Date 6/18/19

MAIL TO:

ND State Water Commission • ATTN: Cost-Share Program
900 E Boulevard Ave. • Bismarck, ND 58505-0850

Drain 81 Estimate

3/4/2019

Engineer's Estimate by: Daniel V. Fischer, PE/PLS/CFedS

Sta	Description	Amount	Unit	Rate/Unit	Total
	Common Excavation	89,901	cu. yds.	$2.15	$193,287.15
	Stripping Road Inslope [19,500'X0.4']	5,800	cu. yds.	$0.50	$2,900.00
	Culverts and Crossings	LF		$	
6+22	48" Dia. 32' long CMP, 12 ga., 3x1 corr.	32	feet	$80.70	$2,582.40
54+90	60" Dia. 60' long CMP, 12 ga., 3x1 corr.	60	feet	$101.40	$6,084.00
81+20	60" Dia. 52' long CMP, 12 ga., 3x1 corr.	52	feet	$101.40	$5,272.80
107+80	83"x57" Arch, 34' long CMP, 12 ga., 3x1 corr	42	feet	$138.20	$5,804.40
110+16	83"x57" Arch, 34' long CMP, 12 ga., 3x1 corr	40	feet	$138.20	$5,528.00
134+14	83"x57" Arch, 42' long CMP, 12 ga., 3x1 corr	44	feet	$138.20	$6,080.80
154+39	Two 60" Dia. 42' long CMP, 12 ga., 3x1 corr	84	feet	$101.40	$8,517.60
160+73	Two 60" Dia. 58' long CMP, 12 ga., 3x1 corr	116	feet	$101.40	$11,762.40
192+48	Two 60" Dia. 40' long CMP, 12 ga., 3x1 corr	80	feet	$101.40	$8,112.00
200+38	Two 60" Dia. 40' long CMP, 12 ga., 3x1 corr	80	feet	$101.40	$8,112.00
213+60	Two 60" Dia. 52' long CMP, 12 ga., 3x1 corr	104	feet	$101.40	$10,545.60
268+67	Two 72" Dia. 50' long CMP, 12 ga., 3x1 corr	100	feet	$116.60	$11,660.00
295+33	Two 72" Dia. 50' long CMP, 12 ga., 3x1 corr	88	feet	$166.60	$14,660.80
321+51	Two 83"x57" Arch, 44' long CMP, 12 ga., 3x1 corr	88	feet	$138.20	$12,161.60
333+71	Two 83"x57" Arch, 44' long CMP, 12 ga., 3x1 corr	88	feet	$138.20	$12,161.60
360+70	Two 83"x57" Arch, 36' long CMP, 12 ga., 3x1 corr	72	feet	$138.20	$9,950.40
374+43	Three 72" Dia. 34' long CMP, 12 ga., 3x1 corr	102	feet	$101.40	$10,342.80
	Culvert Riprap	150	cu. yds.	$75.00	$11,250.00
	Grade Drops				
6+43	Install Riprap Drop Structure (at crossing)	1	LS	$3,500.00	$3,500.00
133+70	Install Drop Structure (at crossing)	1	LS	$1,000.00	$1,000.00
153+95	Install Drop Structure (at crossing)	1	LS	$2,000.00	$2,000.00
296+39	Install Riprap Drop Structure	1	LS	$3,500.00	$3,500.00
316+88	Install Drop Structure	1	LS	$5,400.00	$5,400.00
333+27	Install Drop Structure (at crossing)	1	LS	$2,000.00	$2,000.00
	Field Inlet Culverts				
188+58	Install 24" Dia. CMP, 14 ga. 2-2/3"X1/2" Corr.	40	feet	$35.00	$1,400.00
338+72	Install 24" Dia. CMP, 14 ga. 2-2/3"X1/2" Corr.	40	feet	$35.00	$1,400.00
374+20	Install 24" Dia. CMP, 14 ga. 2-2/3"X1/2" Corr.	40	feet	$35.00	$1,400.00
	24" Dia. Flap Gates	3	each	$200.00	$600.00
	Riprap Culvert Outlet [3 yards each]	9	cu. yds.	$75.00	$675.00
	Lateral Culverts from South @ Section Lines				
	30" Dia. CMP, 12 ga. 3x1 corr (assume 60' long)	7	each	$3,240.00	$22,680.00
	30" Dia. Flap Gates	7	each	$350.00	$2,450.00
	Class 13 Aggregate				
	Arch Culvert bedding/compaction	60	cu. Yds.	$24.00	$1,440.00
54+89	Road Repair	20	cu. Yds.	$24.00	$480.00
81+19	Road Repair	20	cu. Yds.	$24.00	$480.00
110+18	Road Repair	20	cu. Yds.	$24.00	$480.00
160+72	Road Repair	20	cu. Yds.	$24.00	$480.00
213+60	Road Repair	20	cu. Yds.	$24.00	$480.00
268+67	Road Repair	20	cu. Yds.	$24.00	$480.00
	6"-12" Riprap for lateral inlets. [estimated]	70	cu. yds.	$75.00	$5,250.00
	Seeding	20	ac.	$400.00	$8,000.00
	Total Construction Cost Estimate				$422,351.35
	Utility Conflicts				
	Nodak Electric	1	LS	$40,000.00	$40,000.00
	North Valley Water	1	LS	$40,000.00	$40,000.00
	Polar Communications	1	LS	$20,000.00	$20,000.00
	Easement Needed for Drain				
	Easement	80.00	Ac.	125.00	$10,000.00
	Sub-Total				$532,351.35
	Contingency	6%			$31,941.08
	Total Construction				$564,292.43
	Engineering	14%			$79,000.94
	Legal and Administrative		LS		$3,000.00
	Total Estimated Cost of Project				**$646,293.37**
	Total Acres				5997.22
	Estimated Cost per Acre				**$107.77**
	Total Acres w/ S2 S-159-53 (St. Thomas S)				6117.22
	Estimated Cost per Acre w/ S2 of S				**$105.65**

PCWRB Drain 81 Drainage Area

Scale: 1" = 750'

Pembina County Water Board
308 Courthouse Drive #5
Cavalier, ND 58220
701-265-4511

Project: ***Drain 81***

Drainage Area

Sheet _____ of _____.

Date: February 20, 2017

Fischer Land Surveying & Engineering
513 Third Street, PO Box 66
Langdon, ND 58249-0066
701-256-5728
Design By: D.V. Fischer, PE/PLS

Technical Memorandum

To: Board of Managers
Pembina County Water Resource District

From: Zachary O. Herrmann, PE
Bret T. Zimmerman, PE
Houston Engineering, Inc.

Subject: Drain 81 Benefits Analysis

Date: October 21, 2019

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

THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY ZACHARY O. HERRMANN, PE, REGISTRATION NUMBER PE-8405, ON 10/21/2019, AND THE ORIGINAL DOCUMENTS ARE STORED AT HOUSTON ENGINEERING, INC., 1401 21ST AVENUE NORTH, FARGO, ND, 58102

Zachary O. Herrmann Date
Reg. No. PE-8405

INTRODUCTION

Pembina County Drain 81 was petitioned by area farmers to address overland flooding. Agricultural drainage will be improved for landowners in the basin through the facilitation of an adequate outlet for all acres within the Assessment Area. Pembina County Drain 67A will serve as the outlet, which will provide capacities consistent with the proposed Drain 81. As required in ND Century Code 61-21, Drain 81 has been established.

FLOODED ACRES

Flooded acres were estimated through a review of hydraulic capacity that would be provided to the Assessment Area by the proposed Drain 81. Peak flow rates for various flood events were estimated using USGS Regional Regression equations as described in *Regional Regression Equations to Estimate Peak-Flow Frequency at Sites in North Dakota Using Data through 2009; SIR 2015-5096*[1]. Drainage area and channel slope variables were estimated using LiDAR topographic data acquired by Fugro Geosptial Inc. in 2018[2].

Peak flow rates were then input into a HEC-RAS steady state hydraulic model[3] for the existing conditions. The HEC-RAS model was developed using field survey of existing channels and culverts, and was then used to compute water surface profiles for the existing and proposed conditions. These water surface profiles were then used to estimate flooded acres using the available LiDAR data.

Review of National Agricultural Statistics Service (NASS)[4] landuse data from 2017 suggests that approximately 5,719 acres within the Assessment Area are designated as agricultural land. The percent of the total acreage flooded within the modeling extents was then applied to all crop land within the Assessment District to determine the impacted acreages for each of the analyzed flood events. The table below shows the flooded acreage for each of the analyzed events under the existing conditions.

Table 1: Existing Conditions Flooded Acres

Flood Event (Recurrence)	Existing Conditions Flooded Acres
2-year	3,427
5-year	3,850
10-year	4,022
25-year	4,218
50-year	4,333
100-year	4,420

MONETIZED DAMAGES

Information on flooded acres under the existing condition were input into the ND State Water Commission's Economic Analysis model[5]. The period of analysis was assumed 50-years (2020-2071), and all costs and benefits discussed in this report have been amortized out over this period using a discount rate of 2.875%. The analyzed flood events resulted in an estimated $5,989,000 in existing damages over the 50-year period of analysis. For events that are equal to or less than the 10-year design flood, anticipated existing damages are estimated at $5,425,000. Installation capital costs are estimated at $726,185 occurring in 2020, and an estimated $2,500 in annual maintenance expenditures. In total, this results in a total project cost of $791,638. Worksheets from the Economic Analysis model are attached. All costs presented reference present value.

CONCLUSIONS

Benefits received from Drain 81 are provided by facilitating continued drainage within the Assessment Area by ensuring that an adequate outlet exists for the entire contributing watershed. The opportunity to enhance water management for crop production does not imply that an individual landowner will immediately experience the intended benefits through no action of their own. Rather, as with all assessment drains like Drain 81, reasonable measures may be required to be taken by all landowners within the Assessment Area to fully utilize the benefits provided by Drain 81.

Drain 81 is hydraulically designed to provide capacity for the 10-year flood. As such, Drain 81 would facilitate drainage throughout the Assessment Area for the 10-year flood. In total, existing conditions damages for the 2-year, 5-year, and 10-year floods are estimated at $5,425,000. Because Drain 81 facilitates drainage for floods equal to or less than the 10-year flood, the benefit to cost ratio is 6.9 when considering the full implementation and operation/maintenance costs. It should be noted that these ratios only represent floods that were analyzed equal to or less than the design 10-year flood event. Under existing conditions, damages for the floods greater than the 10-year flood is estimated at $564,000. While this analysis did not directly measure the benefits that Drain 81 would provide for floods greater than the 10-year flood, Drain 81 would likely reduce the flooded acres and associated damages for both of these events.

The analysis should not be considered a comprehensive monetization of all benefits provided by Drain 81, rather a review to determine if sufficient monetized benefits exist to exceed Drain 81 cost. There are several other

benefits that will be provided by Drain 81, although qualitatively recognized to exist, were not quantitatively reviewed in detail as part of this analysis since the analysis on the flood damage reduction and yield increases alone demonstrate the cost of the project is not more than the benefits derived from the project. Several of these other benefits are listed as follows:

- With drainage issues throughout the Assessment Area, as made evident by the increased occurrence of localized private drainage effort, Drain 81 would facilitate intensified drainage throughout the Assessment Area. This intensified drainage includes activities that have already occurred in the Assessment Area, that may already be contributing to increased damages further downstream. An adequate outlet would be provided to ensure that drainage efforts throughout the Assessment Area do not cause undo harm on downstream property owners.
- The establishment of Drain 81 would provide a legal means for regulation on drainage activities. The Assessment Area would establish the boundary of the allowable watershed, and would provide the Pembina County Water Resource District the ability to regulate those wishing to be added to the watershed. This would result in reduced potential damages for those downstream of such activities.
- Drain 81 would provide a taxable means to finance future maintenance on the drainage system. Without a taxing authority, individual landowners would be required to finance each of their respective segments of a private drainage system.
- Increased hydraulic capacity that is provided by constructed channels and culverts will reduce the frequency of flooded acres and out of bank flow, resulting in reduced damages to roads, culverts, bridges, and other infrastructure. A review of federal damage reimbursement requests through FEMA indicate that infrastructure damages have occurred on a frequent basis in recent history.
- Agriculture is regionally significant to rural economies throughout North Dakota. Protection of highly productive crop land is imperative to ensuring these rural economies are maximized.

While this is not a comprehensive list of all additional benefits provided by Drain 81, they are examples of additional benefits derived from Drain 81. It is reasonable to conclude these additional benefits would further increase the estimate of benefits to cost ratio and demonstrates this analysis and the cost-benefit ratio described in this analysis is conservative.

Based solely on monetized benefit to reduced flooded acreages to agricultural land, sufficient benefits that exceed the project costs. Additionally, several other additional benefits will result from the implementation of the project that will result in an increased benefit to cost ratio. These additional benefits were not monetized because enough benefit from reduced flooded acreage was discovered to exceed project costs. In summary, Drain 81 provides the opportunity for reduced flood damages and increased yield potential by establishing an adequate outlet for the Assessment Area. Flooded acres and associated damages are a result of runoff accumulated from all acres within the Assessment Area.

REFERENCES

[1] Williams-Sether, Tara, 2015, *Regional regression equations to estimate peak-flow frequency at sites in North Dakota using data through 2009: U.S. Geological Survey Scientific Investigations Report 2015–5096*, 12 p., http://dx.doi.org/10.3133/sir20155096.

[2] Fugro Geospatial Inc, North Dakota LiDAR Program, Collect Completed 2016-2018.

[3] U.S. Army Corps of Engineers, Hydrologic Engineering Center River Analysis System (HEC-RAS) Computer Program, Version 5.0.6, http://www.hec.usace.army.mil/

[4] U.S. Department of Agriculture, National Agricultural Statistics Service, 2017 North Dakota Cropland Data Layer, https://www.nass.usda.gov/

[5] North Dakota State Water Commission, Econimic Anaysis Worksheet for Evaluating Flood Control and Conveyance Projects, http://www.swc.nd.gov/project_development/economic_analysis.html

Economic Analysis Review

Project Title:	Pembina County Drain 81	Date:	November 18, 2019
Description:	Agricultural drainage will be improved in the basin by connecting Pembina County Drain 67A to serve as the outlet.		
Project Type:	Conveyance		

Project Overview

Project Area:	Near St Thomas
County	Pembina
City	Rural
Agricultural Acres Impacted	4,022
Urban	No
Population Served	N/A

Cost	Construction	O & M	Total
Nominal	$726,185	$2,500/yr	$853,685
PV (50 years)	$726,185	$65,454	$791,638
$ / Capita	N/A	N/A	N/A
$ / Acre	$180.55	$16.27	$196.82

Inputs

Protection Level:	1:10
Consumptive and Non-Consumptive Benefits:	
NA	
Detours:	
NA	

Results

Project Performance Metrics	Present Value	Average Annual	Notes
Benefit-to-Cost Ratio	6.9		
Net Benefits	$4,633,709	$175,840	
Internal Rate of Return (IRR)	28%		
Payback Year	4		

Average Annual Damages

Rural

	Difference	Without	With
Cropland	$ 206,890	$ 206,890	$ -
Pasture	$ 330	$ 330	$ -
$	$ 207,220	$ 207,220	$ -

Urban

	Difference	Without	With
Damage to structures at risk	$0	$0	$0
Value of other flood costs	$0	$0	

Model Function

The economic model appears to have functioned properly. The results are deemed to be reliable and repeatable with the inputs provided by the project sponsor.

Explanation of Results

The sponsors identify a significant number of directly impacted acres that will benefit from conveyance during 1:2, 1:5, and 1:10 probability events. The B/C ratio is above 1 and the net benefits from the new drain are $4.6 million dollars over the next 50 years.

Glossary

PV - Present Value of all future costs or benefits adjusted to the current dollar value using an interest rate factor.

1:100 - The probability of an event. Commonly referred to as a one in one hundred year event, it is more accurately, a one in one hundred chance of an event of a specific magnitude happening each individual year.

Nominal - Refers to the dollars spent or benefitted without adjusting for time value of money or inflation.

Non-consumptive Benefits - These occur when an individual's use does not dimish the supply for other consumers of the benefit, *e.g.* bird watching.

Damage to Structures at Risk - This is the segregation of flood costs related to physical damage to structures.

Value of Other Flood Costs - All the other costs associated with an event, *e.g.* flood fighting operations, time delays, relocations, etc.

APPENDIX L

PEMBINA COUNTY
WATER RESOURCE DISTRICT

308 Courthouse Drive #5
Cavalier, North Dakota 58220
Phone: 701-265-4511
Fax: 701-265-4165

June 18, 2019

RECEIVED
JUN 19 2019
STATE WATER COMMISSION

State Engineer
State Water Commission
900 East Boulevard
Bismarck, ND 58505

Re: Request for cost-share assistance

Dear Sir:

The Pembina County Water Resource District is requesting cost-share assistance for the construction of Drain 82 in Pembina County. Farmers experience frequent agricultural damages as a result of excessive run-off in the area. The project received a favorable vote from landowners and is nearing completion of the final plan sets. Bidding is expected on the project later this fall once easements are in place.

The Pembina County Water Resource District Board of Managers is hereby requesting cost-share assistance for the above described project. I have enclosed a copy of the engineer estimate as well as a plan set. The board did transfer the project to Fischer Land Surveying and Engineering this past spring as Dan is more familiar with the landowners and conditions of the proposed project.

If you have any questions, please feel free to contact our office.

Sincerely,

Pembina County Water Resource District

LuAnn Kemp, Secretary

RECEIVED
JUN 19 2019
STATE WATER COMMISSION

COST-SHARE REQUEST

NORTH DAKOTA STATE WATER COMMISSION
DEVELOPMENT DIVISION
SFN 60439 (5/2019)

This form is to be filled out by the project or program sponsor with State Water Commission staff assistance as needed. Applications for cost-share are accepted at any time. However, applications received less than 45 days before a State Water Commission meeting will be held for consideration at the next scheduled meeting.

Please answer the following questions as completely as possible. Supporting documents such as maps, detailed cost estimates, and engineering reports should be attached to this form. If additional space is required, please use extra sheets as necessary.

For information regarding cost-share program eligibility see the *State Water Commission Cost-Share Policy, Procedure, and General Requirements* – available upon request or at www.swc.nd.gov.

Project, Program, Or Study Name
Pembina County Drain #82 Construction

Sponsor(s)
Pembina County

County	City	Township/Range/Section
Pembina	Cavalier	Cavalier N township

Description Of Request ☑ New ☐ Updated (previously submitted)

Specific Needs Addressed By The Project, Program, Or Study
Improved agricultural drainage in the area west of Hamilton

If Study, What Type ☐ Water Supply ☐ Hydrologic ☐ Floodplain Mgmt. ☐ Feasibility ☐ Other

If Project/Program

☐ Flood Control	☐ Multi-Purpose	☐ Bank Stabilization	☐ Dam Safety/EAP
☐ Recreation	☐ Water Supply	☐ Snagging & Clearing	☐ Property Acquisition
☐ Irrigation	☐ Water Retention	☑ Rural Flood Control	☐ Other

Are Connections Of New Rural Customers Located Within The Extra-Territorial Jurisdiction Of Municipality? ☐ Yes ☒ No

Jurisdictions/Stakeholders Involved
Pembina County

Description Of Problem Or Need And How Project Addresses That Problem Or Need
Pembina County Drain #82 was petitioned by area farmers to address flooding from overland water. The drain will run along the west side of the ND DOT Highway 18 ROW to the Tongue River. Agricultural drainage will be improved as well as reduced downstream flooding in the Kippen Coulee basin. Gate structures will be implemented during spring run-off to manage flow and reduce risk for Bathgate.

Has Feasibility Study Been Completed?	☐ Yes	☐ No	☐ Ongoing	☑ Not Applicable
Has Engineering Design Been Completed?	☑ Yes	☐ No	☐ Ongoing	☐ Not Applicable
Have Land Or Easements Been Acquired?	☐ Yes	☐ No	☐ Ongoing	☐ Not Applicable

Have You Applied For Any State Permits?	☑ Yes	☐ No	☐ Not Applicable
If Yes, Please Explain Drain permit			
Have You Been Approved For Any State Permits?	☑ Yes	☐ No	☐ Not Applicable
If Yes, Please Explain Corp permit is approved			
Have You Applied For Any Local Permits?	☐ Yes	☐ No	☑ Not Applicable
If Yes, Please Explain			
Have You Been Approved For Any Local Permits?	☐ Yes	☐ No	☑ Not Applicable
If Yes, Please Explain			

Briefly Explain The Level Of Review The Project Or Program Has Undergone (attach additional documents as needed)
Project has been engineered, vote passed by landowners, final design is underway with FIscher Land Surveying and Engineering who took over the project this spring from Wenck Engineering.

Do You Expect Any Obstacles To Implementation (i.e., problems with land acquisition, permits, funding, local, opposition, environmental concerns, etc.)? No

Funding Timeline (carefully consider when SWC cost-share will be needed)

Source	Total Cost	2017-2019 7/1/17-6/30/19	2019-2021 7/1/19-6/30/21	Beyond 7/1/21
Federal	$	$	$	$
State Water Commission	$ 1,053,127.80	$	$ 1,053,127.80	$
Other State	$	$	$	$
Local	$ 1,287,156.20	$	$ 1,287,156.20	$
Total	$ 2,340,284.00	$ 0.00	$ 2,340,284.00	$ 0.00

List All Other State Of North Dakota Funding Sources (Grant or Loan), For Which You Have Applied

Please Explain Implementation Timelines, Considering All Phases And Their Current Status
Bidding is expected late 2019 with construction in 2020

Have Assessment Districts Been Formed? ☑ Yes ☐ No ☐ Ongoing ☐ Not Applicable

Submitted By Pembina County Water Resource District			Date 6/18/2019
Address 308 Courthouse Drive #5	City Cavalier	State ND	ZIP Code 58220
Telephone Number 701-265-4511	Engineer Telephone Number 701-256-5728		
Sponsor Email Address llkemp@nd.gov	Engineer Email Address Dan Fischer <dfischer@utma.com>		

I Certify That, To The Best Of My Knowledge, The Provided Information Is True And Accurate.

Signature	Date 6/18/19

MAIL TO:

ND State Water Commission • ATTN: Cost-Share Program
900 E Boulevard Ave. • Bismarck, ND 58505-0850

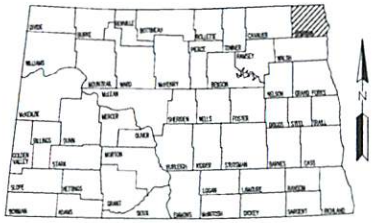
WENCK
Responsive partner.
Exceptional outcomes.

Drain 82 Cost Estimate					
Pembina County Water Resource District					
Item	**Unit**	**Unit Price**		**Quantity**	**Extension**
Mobilation/Demobilization	LS	$	36,500	1	$ 36,500
Land Acquisition	AC	$	6,000	22	$ 132,000
Diversion Excavation	CY	$	5.00	146,000	$ 730,000
Utility Relocation					
Fiber optics	LF	$	1.45	21,370	$ 30,987
Overhead power	LF	$	6.10	21,370	$ 130,357
Move two power poles at Hwy 5	LS	$	50,000	1	$ 50,000
Drain tile pump station	LS	$	30,000	1	$ 30,000
Replace existing tile	LF	$	16.00	1200	$ 19,200
Remove and dispose of existing tile	LF	$	2.00	2500	$ 5,000
Crossings					
Field crossings (6'x4' concrete box culvert)	Each	$	32,000	6	$ 192,000
Road crossings (6'X4' concrete box culvert)	Each	$	38,500	2	$ 77,000
Road crossing at Hwy 5 (Dual 48" RCP jacked)	LF	$	580	170	$ 98,600
Road crossing at Hwy 5 (Dual 48" RCP)	LF	$	190	500	$ 95,000
Riprap	Ton	$	100	120	$ 12,000
Gates for road crossings	Each	$	12,000	3	$ 36,000
Gates (at Hwy 5)	Each	$	11,000	2	$ 22,000
Wetland Mitigation	AC	$	10,000	10	$ 100,000
Berms	CY	$	10	2700	$ 27,000
Traffic Control	LS	$	2,500	1	$ 2,500
Erosion Control	LS	$	5,000	1	$ 5,000
Restoration	AC	$	500	23.2	$ 11,600
				Total	**$ 1,842,744**
				Contingency (15%)	$ 276,412
				Engineering, permitting, and administrative (12%)	$ 221,129
				Total	**$ 2,340,284**

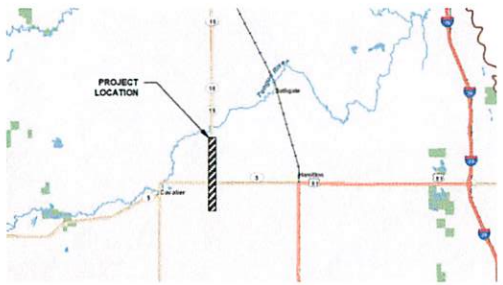
PLANS FOR:
PEMBINA COUNTY'S
DRAIN 82

CAVALIER, NORTH DAKOTA
MAY 2018

ND STATE MAP



PROJECT LOCATION MAP



DRAIN 82 ALIGNMENT

SHEET INDEX

SHEET NUMBER	SHEET NAME	ISSUE DATE	REVISION DATE
G-01	TITLE SHEET		
G-02	PROJECT MAP		
G-03	PROJECT NOTES		
G-04	TYPICAL SECTIONS		
G-05	TYPICAL SECTIONS		
C-01	PLAN & PROFILE STA.0+00 TO STA. 25+00		
C-02	PLAN & PROFILE STA.25+00 TO STA. 50+00		
C-03	PLAN & PROFILE STA.50+00 TO STA. 75+00		
C-04	PLAN & PROFILE STA.75+00 TO STA. 100+00		
C-05	PLAN & PROFILE STA.100+00 TO STA. 125+00		
C-06	PLAN & PROFILE STA.125+00 TO STA. 150+00		
C-07	PLAN & PROFILE STA.150+00 TO STA. 175+00		
C-08	PLAN & PROFILE STA.175+00 TO STA. 200+00		
C-09	PLAN & PROFILE STA.200+00 TO STA. 225+00		
C-10	PLAN & PROFILE STA.225+00 TO STA. 250+00		
D-01	DETAILS		

WARNING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT NDOC AT 800-795-0555 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

NORTH DAKOTA ONE CALL
TOLL FREE 1-800-795-0555

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
2	ISSUED FOR PROJECT APPROVAL	TWR	JWT	5-23-18
1	ISSUED TO CLIENT	TWR	JWT	4-6-18

CLIENT
PEMBINA COUNTY
WATER RESOURCE DISTRICT

PRIME CONSULTANT
WENCK ASSOCIATES
Responsive partner. Exceptional outcomes.

SEAL
ISSUED FOR PROJECT APPROVAL
(NOT FOR CONSTRUCTION)

PROJECT TITLE
DRAIN 82

SHEET TITLE
TITLE SHEET

DWN BY	CHKD	APPD	DWG DATE
TWR	JWT	RWA	MAY 2018

SCALE: AS SHOWN

PROJECT NO.	SHEET NO.	REV NO.
7336-0001	G-01	2

Economic Analysis Review

Project Title: Pembina County Drain 82 Date: November 18, 2019

Description: Agricultural drainage will be improved in the basin by connecting to the Tongue River to serve as the outlet.

Project Type:

Project Overview

Project Area:	East of Cavalier
County	Pembina
City	Rural
Agricultural Acres Impacted	2,201
Urban	No
Population Served	N/A

Cost	Construction	O & M	Total
Nominal	$2,340,284	$2,500/yr	$2,467,784
PV (50 years)	$2,340,284	$65,454	$2,405,738
$ / Capita	N/A	N/A	N/A
$ / Acre	$1,063.28	$29.74	$1,093.02

Inputs

Protection Level:	1:10
Consumptive and Non-Consumptive Benefits:	
NA	
Detours:	
NA	

Results

Project Performance Metrics	Present Value	Average Annual	Notes
Benefit-to-Cost Ratio	1.3		
Net Benefits	$784,060	$29,754	
Internal Rate of Return (IRR)	5%		
Payback Year	30		

Average Annual Damages

Rural

	Difference	Without	With
Cropland	$ 121,464	$ 343,562	$ 222,099
Pasture	$ 370	$ 1,040	$ 670
$	$ 121,834	$ 344,603	$ 222,769

Urban

	Difference	Without	With
Damage to structures at risk	$0	$0	$0
Value of other flood costs	$0	$0	

Model Function

The economic model appears to have functioned properly. The results are deemed to be reliable and repeatable with the inputs provided by the project sponsor.

Explanation of Results

The sponsors identify 2,201 directly impacted acres that will benefit from conveyance during 1:2, 1:5, and 1:10 probability events. The B/C ratio is above 1 and the net benefits from the new drain are $784,060 dollars over the next 50 years.

Glossary

PV - Present Value of all future costs or benefits adjusted to the current dollar value using an interest rate factor.

1:100 - The probability of an event. Commonly referred to as a one in one hundred year event, it is more accurately, a one in one hundred chance of an event of a specific magnitude happening each individual year.

Nominal - Refers to the dollars spent or benefitted without adjusting for time value of money or inflation.

Non-consumptive Benefits - These occur when an individual's use does not dimish the supply for other consumers of the benefit, e.g. bird watching.

Damage to Structures at Risk - This is the segregation of flood costs related to physical damage to structures.

Value of Other Flood Costs - All the other costs associated with an event, e.g. flood fighting operations, time delays, relocations, etc.

APPENDIX M

SWC Date Received : 10/22/19

City Hall
254 2nd Ave NE
PO Box 390
Valley City, ND 58072-0390

Phone: 701-845-1700
Fax: 701-845-4588
www.valleycity.us

October 22, 2019

North Dakota State Water Commission
Attn: Cost-Share Program
900 E Boulevard Ave
Bismarck, ND 58505-0850

Re: City of Valley City
Permanent Flood Protection
Cost-Share Request

Dear State Water Commission,

Greetings to the State Water Commission (SWC). Valley City is asking for a cost share loan at an interest rate of 2% for our erosion, Phase IIA, Phase III, Phase IV, and Phase V design, Permanent Flood protection (PFP) projects. These projects have been approved and state funds allocated by the SWC as per the cost share policy.

To provide some clarity to the commission I must go back a few years when the SWC established the cost share policy for Valley City's PFP program. When the cost share policy was established in 2012 and 2013 there were discussions on how the owners of the flood protection projects would fund their financial commitments. If my memory is correct, during the 63rd legislative assembly (2013), direction was given to the SWC to establish and administer a revolving loan fund with an interest rate of 1.5%. Valley City used this program to fund our Phase I PFP project. Moving forward, I believe it was the 65th Legislative assembly (2017) this funding program was taken away and replaced with a revolving loan fund from the Bank of North Dakota (BND) at an interest rate of 2%. During the last legislative assembly (2019) Valley City thought it had secured additional 2% funding for their PFP project but when the dust cleared the BND let us know we had to go to the SWC to request funding for our PFP cost share. This is why Valley City is here today requesting this loan.

Valley City is asking for a 2% loan rate as this is the highest rate we can absorb and still maintain fiscal solvency in the city's PFP program. We pay for the city's PFP project cost through a 30 year 0.5% sales tax approved by a vote of the citizens back in November of 2013. This funding source was calculated to service a 17 million dollar debt over 30 years at 1.5% interest. When the legislature voted to eliminate the 1.5% loan program and replace it with a 2% loan program Valley City had to recalculate what could be financed through the city sales tax. Anything higher than 2% will use up the city sales tax long before Valley City can finish our PFP project. This is why the interest rate for our cost share loan must stay at 2% or less. To recap, we planned on 1.5% settled for 2% and we cannot afford anything higher.

Below is a breakdown of all the projects and their respective costs. As you can see Valley City is keeping busy putting the allocated dollars to work as fast as we can. Total loan request is $3,676,600.

Valley City Permanent Flood Protection Project - Loan Request

SWC Project #	Description	Total	State - SWC	Local	Loan Request
1504-03	Phase II & IIA Construction	$16,447,000	$13,157,600	$3,289,400	$264,408
1504-07	Phase III Construction	$2,232,724	$1,786,179	$446,545	$446,545
1504-08	Erosion Sites	$600,354	$480,283	$120,071	$120,071
1504-	Phase IV Construction	$13,543,130	$10,834,504	$2,708,626	$2,708,626
1504-	Phase V Design	$913,000	$776,050	$136,950	$136,950
					$3,676,600

Thank you for your consideration of this matter. Valley City considers the SWC, the State Engineer, and his staff, partners in our permanent flood protection project. It is clear that without your support and funding, the dream of protecting Valley City from the ravages of flooding would be impossible.

If you have any questions or concerns, please contact me at (701) 845-1700.

Sincerely,

Dave Schelkoph
City Administrator

Attachments: Cost-Share Form

COST-SHARE REQUEST

NORTH DAKOTA WATER COMMISSION
DEVELOPMENT DIVISION
SFN 60439 (8/2019)

This form is to be filled out by the project or program sponsor with Water Commission staff assistance as needed. Applications for cost-share are accepted at any time. However, applications received less than 45 days before a Water Commission meeting will be held for consideration at the next scheduled meeting.

Please answer the following questions as completely as possible. Supporting documents such as maps, detailed cost estimates, and engineering reports should be attached to this form. If additional space is required, please use extra sheets as necessary.

For information regarding cost-share program eligibility see the *Water Commission Cost-Share Policy, Procedure, and General Requirements* – available upon request or at www.swc.nd.gov.

Project, Program, Or Study Name
Valley City Permanent Flood Protection - Phases 2-5 and Erosion Control Sites

Sponsor(s)
City of Valley City

County	City	Township/Range/Section
Barnes	Valley City	T140N/R58W

Description Of Request ☐ New ☒ Updated (previously submitted)

Specific Needs Addressed By The Project, Program, Or Study And Level Of Study Review Completed
Low Interest Loan for Local Share of Permanent Flood Protection Phases II, III, IV, V and Erosion Control Sites

If Study, What Type ☐ Water Supply ☐ Hydrologic ☐ Floodplain Mgmt. ☐ Feasibility ☐ Other

If Project/Program

☐ Bank Stabilization	☐ Irrigation	☐ Recreation	☐ Snagging & Clearing
☐ Dam Safety/EAP	☐ Multi-Purpose	☐ Ring Dike Program	☐ Water Retention
☐ FEMA Levee Program	☐ Municipal Water Supply	☐ Rural Flood Control	
☒ Flood Protection Program	☐ Property Acquisition Program	☐ Rural Water Supply	

Description Of Problem Or Need And How Project Addresses That Problem Or Need
Valley City sits along the Sheyenne River. During the spring, the river swells from snow melt. During the spring of 2009, Valley City encountered a record flood only to repeat it with a near record flood in the spring of 2011. A considerable amount of resources are expended to combat the rising waters. The proposed project would mitigate these expenses while protecting vital infrastructure.

Funding Timeline (carefully consider when SWC cost-share will be needed)

Source	Total Cost	2019-2021 7/1/19-6/30/21	2021-2023 7/1/21-6/30/23	Beyond 7/1/23
Federal	$ 0.00	$	$	$
Water Commission	$ 0.00	$	$	$
Other State	$ 3,676,600.00	$ 3,676,600.00	$	$
Local	$ 0.00	$	$	$
Total	$ 3,676,600.00	$ 3,676,600.00	$ 0.00	$ 0.00

Provide Names And Amounts From All Potential Funding Sources, Including All Other State Of North Dakota Sources				
Source	Amount	Grant Or Loan	Term	Interest
	$			%
	$			%
	$			%
	$			%

What Are The Potential Obstacles To Implementation (i.e., problems with land acquisition, permits, funding, local opposition, environmental concerns, etc.)?

CLOMR was submitted to FEMA in April 2019. Updates to initial review are currently in progress.

Explain Timelines For All Phases And Their Current Status (Study, Design, Bid, Construction, Completion, Etc.)

Phase I: Complete; Phase II: Complete; Phase IIA; Under Construction (20% Complete, to be completed in Summer 2020); Phase III: Awaiting permitting, Contractor in place; Phase IV: 2020 Construction; Phase V: 2021 Construction; Erosion Control: 2020 Construction; All Phases: Complete by 2030

Are Connections For New Rural Customers Located Within The Extra-Territorial Jurisdiction Of A Municipality? ☐ Yes ☐ No

Jurisdictions/Stakeholders Involved In This Project

City of Valley City

Has Economic Analysis Been Completed?	☐ Yes	☐ No	☐ Ongoing	☒ Not Applicable
Has Life Cycle Cost Analysis Been Completed?	☐ Yes	☐ No	☐ Ongoing	☒ Not Applicable
Has Feasibility Study Been Completed?	☒ Yes	☐ No	☐ Ongoing	☐ Not Applicable
Has Engineering Design Been Completed?	☐ Yes	☐ No	☒ Ongoing	☐ Not Applicable
Have Land Or Easements Been Acquired?	☒ Yes	☐ No	☐ Ongoing	☐ Not Applicable
Have Assessment Districts Been Formed?	☐ Yes	☐ No	☐ Ongoing	☒ Not Applicable

If Yes, (Date)?

Has Sediment Analysis For Reconstruction Of An Existing Drain Been Completed? ☐ Yes ☐ No

Have You Applied For Any State Permits? ☒ Yes ☐ No ☐ Not Applicable		Type/Number SLP, Construction Permit
Have You Been Approved For Any State Permits? ☐ Yes ☒ No ☐ Not Applicable		Type/Number
If Yes, Please Explain Permits issued for Phase I & II. Permits pending for Phase III and future.		
Have You Applied For Any Local Permits? ☐ Yes ☒ No ☐ Not Applicable		Type/Number
Have You Been Approved For Any Local Permits? ☐ Yes ☒ No ☐ Not Applicable		Type/Number
If Yes, Please Explain		

Submitted By David Schelkoph			Date 10/21/19
Address PO Box 390	City Valley City	State ND	ZIP Code 58072

Sponsor's Telephone Number (701)845-8120	Sponsor's Email Address dschelkoph@valleycity.us
Engineer's Name Chad Petersen	Engineer's Telephone Number (701)845-9446
Engineer's Company KLJ	Engineer's Email Address chad.petersen@kljeng.com

I Certify That, To The Best Of My Knowledge, The Provided Information Is True And Accurate.

Signature	Date 10/22/19

E-MAIL TO:
swccostshare@nd.gov

MAIL TO:
ND Water Commission • ATTN: Cost-Share Program
900 E Boulevard Ave. • Bismarck, ND 58505-0850

APPENDIX N

COST-SHARE REQUEST

NORTH DAKOTA WATER COMMISSION
DEVELOPMENT DIVISION
SFN 60439 (8/2019)

This form is to be filled out by the project or program sponsor with Water Commission staff assistance as needed. Applications for cost-share are accepted at any time. However, applications received less than 45 days before a Water Commission meeting will be held for consideration at the next scheduled meeting.

Please answer the following questions as completely as possible. Supporting documents such as maps, detailed cost estimates, and engineering reports should be attached to this form. If additional space is required, please use extra sheets as necessary.

For information regarding cost-share program eligibility see the *Water Commission Cost-Share Policy, Procedure, and General Requirements* – available upon request or at www.swc.nd.gov.

Project, Program, Or Study Name
14th St NW (between 10th Ave NW and 17th Ave NW)

Sponsor(s)
City of Watford City

County	City	Township/Range/Section
McKenzie	Watford City	

Description Of Request ☒ New ☐ Updated (previously submitted)

Specific Needs Addressed By The Project, Program, Or Study And Level Of Study Review Completed
Growth Related Distribution System Expansion

If Study, What Type ☐ Water Supply ☐ Hydrologic ☐ Floodplain Mgmt. ☐ Feasibility ☐ Other

If Project/Program

☐ Bank Stabilization	☐ Irrigation	☐ Recreation	☐ Snagging & Clearing
☐ Dam Safety/EAP	☐ Multi-Purpose	☐ Ring Dike Program	☐ Water Retention
☐ FEMA Levee Program	☒ Municipal Water Supply	☐ Rural Flood Control	
☐ Flood Protection Program	☐ Property Acquisition Program	☐ Rural Water Supply	

Description Of Problem Or Need And How Project Addresses That Problem Or Need

This is a new water supply project to install 12" water main along 14th St NW (between 10th Ave NW and 17th Ave NW) for the City of Watford City to connect approximately 100 new users to the system.

Growth of Watford City is resulting in the need for numerous new water mains to serve areas without water supply. Without the increase in water transmission infrastructure, the new subdivisions will not have access to water. By installing these water mains, the City will effectively be able to serve the need for new residential housing.

With renewed growth, the need is urgent to install this new infrastructure and allow the City to meet new demand. Installations will coincide with county road improvements leading to urban streets.

Funding Timeline (carefully consider when SWC cost-share will be needed)

Source	Total Cost	2019-2021 7/1/19-6/30/21	2021-2023 7/1/21-6/30/23	Beyond 7/1/23
Federal	$0.00	$	$	$
Water Commission	$309,900.00	$309,900.00	$	$
Other State	$0.00	$	$	$
Local	$206,600.00	$206,600.00	$	$
Total	$516,500.00	$516,500.00	$0.00	$0.00

Provide Names And Amounts From All Potential Funding Sources, Including All Other State Of North Dakota Sources				
Source	Amount	Grant Or Loan	Term	Interest
SWC	$ 309,900.00	Grant	N/A	N/A %
City Funding	$ 206,600.00	Cash	N/A	N/A %
	$			%
	$			%

What Are The Potential Obstacles To Implementation (i.e., problems with land acquisition, permits, funding, local opposition, environmental concerns, etc.)?

No major obstacles are anticipated.

Explain Timelines For All Phases And Their Current Status (Study, Design, Bid, Construction, Completion, Etc.)

Design - 2019, Bidding - 2019, Construction Start - 2020, Completion - 11/30/2020

Are Connections For New Rural Customers Located Within The Extra-Territorial Jurisdiction Of A Municipality? ☒ Yes ☒ No

Jurisdictions/Stakeholders Involved In This Project

This project falls within the jurisdictions of Watford City and McKenzie County

Has Economic Analysis Been Completed?	☐ Yes	☐ No	☐ Ongoing	☒ Not Applicable	
Has Life Cycle Cost Analysis Been Completed?	☒ Yes	☐ No	☐ Ongoing	☐ Not Applicable	
Has Feasibility Study Been Completed?	☒ Yes	☐ No	☐ Ongoing	☐ Not Applicable	
Has Engineering Design Been Completed?	☐ Yes	☐ No	☒ Ongoing	☐ Not Applicable	
Have Land Or Easements Been Acquired?	☐ Yes	☐ No	☒ Ongoing	☐ Not Applicable	
Have Assessment Districts Been Formed?	☐ Yes	☐ No	☐ Ongoing	☒ Not Applicable	If Yes, (Date)?
Has Sediment Analysis For Reconstruction Of An Existing Drain Been Completed?	☐ Yes	☒ No			

Have You Applied For Any State Permits?	☐ Yes	☐ No	☒ Not Applicable	Type/Number	
Have You Been Approved For Any State Permits?	☐ Yes	☐ No	☒ Not Applicable	Type/Number	
If Yes, Please Explain					
Have You Applied For Any Local Permits?	☐ Yes	☐ No	☒ Not Applicable	Type/Number	
Have You Been Approved For Any Local Permits?	☐ Yes	☐ No	☒ Not Applicable	Type/Number	
If Yes, Please Explain					

Submitted By Curt Moen			Date
Address 213 2nd St NE	City Watford City	State ND	ZIP Code 58854
Sponsor's Telephone Number 701-444-2533	Sponsor's Email Address cumoen@nd.gov		
Engineer's Name Grace Demars	Engineer's Telephone Number 701-444-8433		
Engineer's Company City of Watford City	Engineer's Email Address gdemars@nd.gov		
I Certify That, To The Best Of My Knowledge, The Provided Information Is True And Accurate.			
Signature Grace Demars			Date

E-MAIL TO:
swccostshare@nd.gov

MAIL TO:
ND Water Commission • ATTN: Cost-Share Program
900 E Boulevard Ave. • Bismarck, ND 58505-0850

14th Street NW (Between 10th Ave NW and 17th Ave NW)
Watermain Expansion
Watford City, ND

Engineer's Opinion of Probable Construction Costs - Budget Phase
Updated 10/21/19

	Item	Units		Unit Price	Total
1	Bonding, Mobilization and Insurance	1	ea.	$15,000	15,000
2	Construction Signage	1	ea.	$8,000	8,000
3	SWPPP	1	ea.	$12,000	12,000
4	12" PVC Watermain	2750	lf.	$86	236,500
5	Fire Hydrants	6	ea.	$4,500	27,000
6	Gate Valves	8	ea.	$3,000	24,000
7	Fittings	12	ea.	$500	6,000
8	Seeding and Restoration	2	acres	$2,500	5,000
	Total				333,500
	10% Contingency				33,000
	Total Construction Costs				366,500
	Legal and Administration Costs		non-eligible		7,000
	Engineering Costs				77,000
	Total Project Costs				**450,500**
			total eligible		$ 443,500
			60% cost share		$ 266,100

Life Cycle Cost Analysis Review

Sponsor: Watford City
Project Title: 14th St NW Watermain **Date:** October 30, 2019

Explanation of Alternatives:

The growth of Watford City has resulted in the need for new water mains to serve areas without water supply. Without the increase in water transmission infrastructure, the new subdivisions will not have access to water. By installing these water mains, the City will effectively be able to serve approximately 100 new connections.

Inputs:

	No Build	Install 12 inch mains	Alternative 3	Alternative 4
Users Served	100			
Construction Cost	$0	$450,500	$0	$0
Annual O & M	$0	$0	$0	$0

Details:

The sponsors show no operations and maintenance expense for the new main.

Model Function:

The economic model appears to have functioned properly. The results are deemed to be reliable and repeatable with the inputs provided by the project sponsor.

LCCA Model Results:

Scenario Analysis - Present Value Life Cycle Cost Summary

Present Value	No Build	Install 12 inch mains	Alternative 3	Alternative 4
Capital Costs	$0	$451,000	$0	$0
O&M	$0	$0	$0	$0
Repair, Rehab, Replacement	$0	$83,000	$0	$0
Salvage Value	$0	$5,000	$0	$0
Total PVC	**$0**	**$529,000**	**$0**	**$0**
PV Cost Per User	**$0**	**$5,290**	$0	$0
PV Cost Per Municipal User	**$0**	**$324**		

Current Water Rate (Cost Per 5000g)		**$49**			
Average Water Rate (2019 WDP)		**$46**			
Total Municipal Service Users		1,634	1,634		
Cost-Share Percent		60%	60%		
	Local Share	$0	$180,400		
	Other Funding	$0	$0		
	Total Local	$0	$180,400		
Payment Per User With Cost-Share		**$0.00**	**$0.56**		
	Local Share	$0	$451,000		
	Other Funding	$0	$0		
	Total Local	$0	$451,000		
Payment Per User Without Cost-Share		**$0.00**	**$1.40**		

Explanation of Results:

The present value cost of the preferred alternative is $529,000. The cost per user on this stretch of the supply line is $5,290 and when spread across all system users it is $324. A comparison of local cost per user on the system shows, at 2% over 20 years ,to fund this project it would cost each user $0.56 per month if the state provides maximum cost-share; and $1.40 if the entire project is borne by the local users. Watford City's current water rate is $49 per 5,000 gallons.

	Year		Annual Population Growth Rate	Average Annual Population Increase/Decrease
	2010	2018		
Population & Trends	1,744	7,080	38.2%	667

Other Comments:

This is one of 4 applications. Impacts to municiple users are likely to be cumulative with each project.

COST-SHARE REQUEST
NORTH DAKOTA WATER COMMISSION
DEVELOPMENT DIVISION
SFN 60439 (8/2019)

This form is to be filled out by the project or program sponsor with Water Commission staff assistance as needed. Applications for cost-share are accepted at any time. However, applications received less than 45 days before a Water Commission meeting will be held for consideration at the next scheduled meeting.

Please answer the following questions as completely as possible. Supporting documents such as maps, detailed cost estimates, and engineering reports should be attached to this form. If additional space is required, please use extra sheets as necessary.

For information regarding cost-share program eligibility see the *Water Commission Cost-Share Policy, Procedure, and General Requirements* – available upon request or at www.swc.nd.gov.

Project, Program, Or Study Name
17th Ave NW (between Main St & 14th St NW)

Sponsor(s)
City of Watford City

County	City	Township/Range/Section
McKenzie	Watford City	

Description Of Request ☒ New ☐ Updated (previously submitted)

Specific Needs Addressed By The Project, Program, Or Study And Level Of Study Review Completed
Growth Related Distribution System Expansion

If Study, What Type ☐ Water Supply ☐ Hydrologic ☐ Floodplain Mgmt. ☐ Feasibility ☐ Other

If Project/Program

☐ Bank Stabilization	☐ Irrigation	☐ Recreation	☐ Snagging & Clearing
☐ Dam Safety/EAP	☐ Multi-Purpose	☐ Ring Dike Program	☐ Water Retention
☐ FEMA Levee Program	☒ Municipal Water Supply	☐ Rural Flood Control	
☐ Flood Protection Program	☐ Property Acquisition Program	☐ Rural Water Supply	

Description Of Problem Or Need And How Project Addresses That Problem Or Need

This is a new water supply project to install 12" water main along 17th Ave NW (between Main St & 14th St NW) for the City of Watford City to connect approximately 100 new users to the system.

Growth of Watford City is resulting in the need for numerous new water mains to serve areas without water supply. Without the increase in water transmission infrastructure, the new subdivisions will not have access to water. By installing these water mains, the City will effectively be able to serve the need for new residential housing.

With renewed growth, the need is urgent to install this new infrastructure and allow the City to meet new demand. Installations will coincide with county road improvements leading to urban streets.

Funding Timeline (carefully consider when SWC cost-share will be needed)

Source	Total Cost	2019-2021 7/1/19-6/30/21	2021-2023 7/1/21-6/30/23	Beyond 7/1/23
Federal	$ 0.00	$	$	$
Water Commission	$ 630,600.00	$ 630,600.00	$	$
Other State	$ 0.00	$	$	$
Local	$ 420,400.00	$ 420,400.00	$	$
Total	$ 1,051,000.00	$ 1,051,000.00	$ 0.00	$ 0.00

Provide Names And Amounts From All Potential Funding Sources, Including All Other State Of North Dakota Sources				
Source	Amount	Grant Or Loan	Term	Interest
SWC	$ 630,600.00	Grant	N/A	N/A %
City Funding	$ 420,400.00	Cash	N/A	N/A %
	$			%
	$			%

What Are The Potential Obstacles To Implementation (i.e., problems with land acquisition, permits, funding, local opposition, environmental concerns, etc.)?

No major obstacles are anticipated

Explain Timelines For All Phases And Their Current Status (Study, Design, Bid, Construction, Completion, Etc.)

Design - 2019, Bidding - 2020, Construction Start - 2020, Completion - 11/30/2020

Are Connections For New Rural Customers Located Within The Extra-Territorial Jurisdiction Of A Municipality? ☒ Yes ☒ No

Jurisdictions/Stakeholders Involved In This Project

This project falls within the jurisdictions of Watford City and McKenzie County.

Has Economic Analysis Been Completed?	☐ Yes	☐ No	☐ Ongoing	☒ Not Applicable	
Has Life Cycle Cost Analysis Been Completed?	☒ Yes	☐ No	☐ Ongoing	☐ Not Applicable	
Has Feasibility Study Been Completed?	☒ Yes	☐ No	☐ Ongoing	☐ Not Applicable	
Has Engineering Design Been Completed?	☐ Yes	☐ No	☒ Ongoing	☐ Not Applicable	
Have Land Or Easements Been Acquired?	☐ Yes	☐ No	☒ Ongoing	☐ Not Applicable	
Have Assessment Districts Been Formed?	☐ Yes	☐ No	☐ Ongoing	☒ Not Applicable	If Yes, (Date)?
Has Sediment Analysis For Reconstruction Of An Existing Drain Been Completed?	☐ Yes	☒ No			

17th Ave NW (Between Main St. and 14th St NW)
Watermain Expansion
Watford City, ND

Engineer's Opinion of Probable Construction Costs - Budget Phase
Updated 10/21/19

	Item	Units		Unit Price	Total
1	Bonding, Mobilization and Insurance	1	ea.	$29,000	29,000
2	Construction Signage	1	ea.	$15,000	15,000
3	SWPPP	1	ea.	$20,000	20,000
4	12" PVC Watermain	5250	lf.	$86	451,500
5	Fire Hydrants	14	ea.	$4,500	63,000
6	Gate Valves	24	ea.	$3,000	72,000
7	Fittings	30	ea.	$500	15,000
8	Seeding and Restoration	5	acres	$2,500	12,500
	Total				678,000
	10% Contingency				68,334
	Total Construction Costs				746,334
	Legal and Administration Costs		non-eligible		14,000
	Engineering Costs				156,000
	Total Project Costs				**916,334**
			Total eligible		902,334
			60% cost share		541,400

Life Cycle Cost Analysis Review

Sponsor: Watford City
Project Title: 17th Ave NW Watermain **Date:** October 30, 2019

Explanation of Alternatives:

The growth of Watford City has resulted in the need for new water mains to serve areas without water supply. Without the increase in water transmission infrastructure, the new subdivisions will not have access to water. By installing these water mains, the City will effectively be able to serve approximately 100 new connections.

Inputs:

	Alternative 1 - No Build	Alternative 2	Alternative 3	Alternative 4
Users Served	100			
Construction Cost	$0	$916,300	$0	$0
Annual O & M	$0	$0	$0	$0

Details:

The sponsors show no operations and maintenance expense for the new main.

Model Function:

The economic model appears to have functioned properly. The results are deemed to be reliable and repeatable with the inputs provided by the project sponsor.

LCCA Model Results:

Scenario Analysis - Present Value Life Cycle Cost Summary

Present Value	Alternative 1 - No Build	Alternative 2	Alternative 3	Alternative 4
Capital Costs	$0	$916,000	$0	$0
O&M	$0	$0	$0	$0
Repair, Rehab, Replacement	$0	$175,000	$0	$0
Salvage Value	$0	$13,000	$0	$0
Total PVC	**$0**	**$1,078,000**	**$0**	**$0**
PV Cost Per User	**$0**	**$10,780**	$0	$0
PV Cost Per Municipal User	**$0**	**$660**		

Current Water Rate (Cost Per 5000g)		**$49**			
Average Water Rate (2019 WDP)		**$46**			
Total Municipal Service Users		1,634	1,634		
Cost-Share Percent		60%	60%		
	Local Share	$0	$366,400		
	Other Funding	$0	$0		
	Total Local	$0	$366,400		
Payment Per User With Cost-Share		**$0.00**	**$1.13**		
	Local Share	$0	$916,000		
	Other Funding	$0	$0		
	Total Local	$0	$916,000		
Payment Per User Without Cost-Share		**$0.00**	**$2.84**		

Explanation of Results:

The present value cost of the preferred alternative is $1,078,000. The cost per user on this stretch of the supply line is $10,780 and when spread across all system users it is $660. A comparison of local cost per user on the system shows, at 2% over 20 years, to fund this project it would cost each user $1.13 per month if the state provides maximum cost-share and $2.84 if the entire project is borne by the local users. Watford City's current water rate is $49 per 5,000 gallons.

	Year		Annual Population Growth Rate	Average Annual Population Increase/Decrease
	2010	2018		
Population & Trends	1,744	7,080	38.2%	667

Other Comments:

This is one of 4 applications. Impacts to municiple users are likely to be cumulative with each project.

COST-SHARE REQUEST

NORTH DAKOTA WATER COMMISSION
DEVELOPMENT DIVISION
SFN 60439 (8/2019)

This form is to be filled out by the project or program sponsor with Water Commission staff assistance as needed. Applications for cost-share are accepted at any time. However, applications received less than 45 days before a Water Commission meeting will be held for consideration at the next scheduled meeting.

Please answer the following questions as completely as possible. Supporting documents such as maps, detailed cost estimates, and engineering reports should be attached to this form. If additional space is required, please use extra sheets as necessary.

For information regarding cost-share program eligibility see the *Water Commission Cost-Share Policy, Procedure, and General Requirements* – available upon request or at www.swc.nd.gov.

Project, Program, Or Study Name
17th Ave NE (between Pheasant Ridge & 12 St NE)

Sponsor(s)
City of Watford City

County	City	Township/Range/Section
McKenzie	Watford City	

Description Of Request ☒ New ☐ Updated (previously submitted)

Specific Needs Addressed By The Project, Program, Or Study And Level Of Study Review Completed
Growth Related Distribution System Expansion

If Study, What Type ☐ Water Supply ☐ Hydrologic ☐ Floodplain Mgmt. ☐ Feasibility ☐ Other

If Project/Program

☐ Bank Stabilization	☐ Irrigation	☐ Recreation	☐ Snagging & Clearing
☐ Dam Safety/EAP	☐ Multi-Purpose	☐ Ring Dike Program	☐ Water Retention
☐ FEMA Levee Program	☒ Municipal Water Supply	☐ Rural Flood Control	
☐ Flood Protection Program	☐ Property Acquisition Program	☐ Rural Water Supply	

Description Of Problem Or Need And How Project Addresses That Problem Or Need

This is a new water supply project to install 12" water main along 17th Ave NE (between Pheasant Ridge & 12 St NE) for the City of Watford City to connect approximately 50 new users to the system.

Growth of Watford City is resulting in the need for numerous new water mains to serve areas without water supply. Without the increase in water transmission infrastructure, the new subdivisions will not have access to water. By installing these water mains, the City will effectively be able to serve the need for new residential housing.

With renewed growth, the need is urgent to install this new infrastructure and allow the City to meet new demand. Installations will coincide with county road improvements leading to urban streets.

Funding Timeline (carefully consider when SWC cost-share will be needed)

Source	Total Cost	2019-2021 7/1/19-6/30/21	2021-2023 7/1/21-6/30/23	Beyond 7/1/23
Federal	$0.00	$	$	$
Water Commission	$402,100.00	$402,100.00	$	$
Other State	$0.00	$	$	$
Local	$268,000.00	$268,000.00	$	$
Total	$670,100.00	$670,100.00	$0.00	$0.00

Provide Names And Amounts From All Potential Funding Sources, Including All Other State Of North Dakota Sources				
Source	Amount	Grant Or Loan	Term	Interest
SWC	$ 402,100.00	Grant	N/A	N/A %
City Funding	$ 268,000.00	Cash	N/A	N/A %
	$			%
	$			%

What Are The Potential Obstacles To Implementation (i.e., problems with land acquisition, permits, funding, local opposition, environmental concerns, etc.)?

No major obstacles are anticipated.

Explain Timelines For All Phases And Their Current Status (Study, Design, Bid, Construction, Completion, Etc.)

Design - 2019, Bidding - 2020, Construction Start - 2020, Completion - 11/30/2020

Are Connections For New Rural Customers Located Within The Extra-Territorial Jurisdiction Of A Municipality? ☒ Yes ☒ No

Jurisdictions/Stakeholders Involved In This Project

This project falls within the jurisdictions of Watford City and McKenzie County.

Has Economic Analysis Been Completed?	☐ Yes	☐ No	☐ Ongoing	☒ Not Applicable
Has Life Cycle Cost Analysis Been Completed?	☒ Yes	☐ No	☐ Ongoing	☐ Not Applicable
Has Feasibility Study Been Completed?	☒ Yes	☐ No	☐ Ongoing	☐ Not Applicable
Has Engineering Design Been Completed?	☐ Yes	☐ No	☒ Ongoing	☐ Not Applicable
Have Land Or Easements Been Acquired?	☐ Yes	☐ No	☒ Ongoing	☐ Not Applicable
Have Assessment Districts Been Formed?	☐ Yes	☐ No	☐ Ongoing	☒ Not Applicable

If Yes, (Date)?

Has Sediment Analysis For Reconstruction Of An Existing Drain Been Completed? ☐ Yes ☒ No

17th Ave NE (Between Pheasant Ridge and 12th St NE)
Watermain Expansion
Watford City, ND

Engineer's Opinion of Probable Construction Costs - Budget Phase
Updated 10/21/19

	Item	Units		Unit Price	Total
1	Bonding, Mobilization and Insurance	1	ea.	$19,000	19,000
2	Construction Signage	1	ea.	$10,000	10,000
3	SWPPP	1	ea.	$15,000	15,000
4	12" PVC Watermain	3600	lf.	$86	309,600
5	Fire Hydrants	8	ea.	$4,500	36,000
6	Gate Valves	10	ea.	$3,000	30,000
7	Fittings	15	ea.	$500	7,500
8	Seeding and Restoration	2	acres	$2,500	5,000
	Total				432,100
	10% Contingency				43,067
	Total Construction Costs				475,167
	Legal and Administration Costs		non-eligible		9,000
	Engineering Costs				99,000
	Total Project Costs				**583,167**

total eligible	574,167
60% cost share	344,500

Life Cycle Cost Analysis Review

Sponsor: Watford City
Project Title: 17th Ave NE Watermain **Date:** November 14, 2019

Explanation of Alternatives:

The growth of Watford City has resulted in the need for new water mains to serve areas without water supply. Without the increase in water transmission infrastructure, the new subdivisions will not have access to water. By installing these water mains, the City will effectively be able to serve approximately 50 new connections.

Inputs:

	Alternative 1 - No Build	Alternative 2	Alternative 3	Alternative 4
Users Served	50			
Construction Cost	$0	$583,200	$0	$0
Annual O & M	$0	$0	$0	$0

Details:

The sponsors show no operations and maintenance expense for the new main.

Model Function:

The economic model appears to have functioned properly. The results are deemed to be reliable and repeatable with the inputs provided by the project sponsor.

LCCA Model Results:

Scenario Analysis - Present Value Life Cycle Cost Summary

Present Value	Alternative 1 - No Build	Alternative 2	Alternative 3	Alternative 4
Capital Costs	$0	$583,000	$0	$0
O&M	$0	$0	$0	$0
Repair, Rehab, Replacement	$0	$106,000	$0	$0
Salvage Value	$0	$6,000	$0	$0
Total PVC	**$0**	**$683,000**	**$0**	**$0**
PV Cost Per User	**$0**	**$13,660**	$0	$0
PV Cost Per Municipal User	**$0**	**$418**		

Current Water Rate (Cost Per 5000g)		**$49**			
Average Water Rate (2019 WDP)		**$46**			
Total Municipal Service Users		1,634	1,634		
Cost-Share Percent		60%	60%		
	Local Share	$0	$233,200		
	Other Funding	$0	$0		
	Total Local	$0	$233,200		
Payment Per User With Cost-Share		**$0.00**	**$0.72**		
	Local Share	$0	$583,000		
	Other Funding	$0	$0		
	Total Local	$0	$583,000		
Payment Per User Without Cost-Share		**$0.00**	**$1.80**		

Explanation of Results:

The present value cost of the preferred alternative is $683,000. The cost per user on this stretch of the supply line is $13,660 and when spread across all system users it is $418. A comparison of local cost per user on the system shows, at 2% over 20 years, to fund this project it would cost each user $0.72 per month if the state provides maximum cost-share and $1.80 if the entire project is borne by the local users. Watford City's current water rate is $49 per 5,000 gallons.

	Year		Annual Population Growth Rate	Average Annual Population Increase/Decrease
	2010	2018		
Population & Trends	1,744	7,080	38.2%	667

Other Comments:

This is one of 4 applications. Impacts to municiple users are likely to be cumulative with each project.

COST-SHARE REQUEST

NORTH DAKOTA WATER COMMISSION
DEVELOPMENT DIVISION
SFN 60439 (8/2019)

This form is to be filled out by the project or program sponsor with Water Commission staff assistance as needed. Applications for cost-share are accepted at any time. However, applications received less than 45 days before a Water Commission meeting will be held for consideration at the next scheduled meeting.

Please answer the following questions as completely as possible. Supporting documents such as maps, detailed cost estimates, and engineering reports should be attached to this form. If additional space is required, please use extra sheets as necessary.

For information regarding cost-share program eligibility see the *Water Commission Cost-Share Policy, Procedure, and General Requirements* – available upon request or at www.swc.nd.gov.

Project, Program, Or Study Name
12th St NE (between HWY23 and 17th Ave N)

Sponsor(s)
City of Watford City

County	City	Township/Range/Section
McKenzie	Watford City	

Description Of Request ☒ New ☐ Updated (previously submitted)

Specific Needs Addressed By The Project, Program, Or Study And Level Of Study Review Completed
Growth Related Distribution System Expansion

If Study, What Type ☐ Water Supply ☐ Hydrologic ☐ Floodplain Mgmt. ☐ Feasibility ☐ Other

If Project/Program

☐ Bank Stabilization	☐ Irrigation	☐ Recreation	☐ Snagging & Clearing
☐ Dam Safety/EAP	☐ Multi-Purpose	☐ Ring Dike Program	☐ Water Retention
☐ FEMA Levee Program	☒ Municipal Water Supply	☐ Rural Flood Control	
☐ Flood Protection Program	☐ Property Acquisition Program	☐ Rural Water Supply	

Description Of Problem Or Need And How Project Addresses That Problem Or Need

This is a new water supply project to install 12" water main along 12th St E (between ND-HWY23 and 17th Ave N) for the City of Watford City to connect approximately 50 new users to the system.

Growth of Watford City is resulting in the need for numerous new water mains to serve areas without water supply. Without the increase in water transmission infrastructure, the new subdivisions will not have access to water. By installing these water mains, the City will effectively be able to serve the need for new residential housing.

With renewed growth, the need is urgent to install this new infrastructure and allow the City to meet new demand. Installations will coincide with county road improvements leading to urban streets.

Funding Timeline (carefully consider when SWC cost-share will be needed)

Source	Total Cost	2019-2021 7/1/19-6/30/21	2021-2023 7/1/21-6/30/23	Beyond 7/1/23
Federal	$ 0.00	$	$	$
Water Commission	$ 498,700.00	$ 498,700.00	$	$
Other State	$ 0.00	$	$	$
Local	$ 332,400.00	$ 332,400.00	$	$
Total	$ 831,100.00	$ 831,100.00	$ 0.00	$ 0.00

Provide Names And Amounts From All Potential Funding Sources, Including All Other State Of North Dakota Sources				
Source	Amount	Grant Or Loan	Term	Interest
SWC	$ 498,700.00	Grant	N/A	N/A %
City Funds	$ 332,400.00	N/A	N/A	N/A %
	$			%
	$			%

What Are The Potential Obstacles To Implementation (i.e., problems with land acquisition, permits, funding, local opposition, environmental concerns, etc.)?

No major obstacles anticipated.

Explain Timelines For All Phases And Their Current Status (Study, Design, Bid, Construction, Completion, Etc.)

Study - Complete, Design - 2019, Bidding - 2020, Construction Begin - 2021, Completion - 11/30/2021

Are Connections For New Rural Customers Located Within The Extra-Territorial Jurisdiction Of A Municipality? ☒ Yes ☒ No

Jurisdictions/Stakeholders Involved In This Project

This project falls within the jurisdictions of Watford City and McKenzie County

Has Economic Analysis Been Completed?	☐ Yes	☐ No	☐ Ongoing	☒ Not Applicable	
Has Life Cycle Cost Analysis Been Completed?	☒ Yes	☐ No	☐ Ongoing	☐ Not Applicable	
Has Feasibility Study Been Completed?	☒ Yes	☐ No	☐ Ongoing	☐ Not Applicable	
Has Engineering Design Been Completed?	☐ Yes	☐ No	☒ Ongoing	☐ Not Applicable	
Have Land Or Easements Been Acquired?	☐ Yes	☐ No	☒ Ongoing	☐ Not Applicable	
Have Assessment Districts Been Formed?	☐ Yes	☐ No	☐ Ongoing	☒ Not Applicable	If Yes, (Date)?
Has Sediment Analysis For Reconstruction Of An Existing Drain Been Completed?	☐ Yes	☒ No			

Watermain Expansion
Watford City, ND

Engineer's Opinion of Probable Construction Costs - Budget Phase
Updated 10/21/19

	Item	Units		Unit Price	Total
1	Bonding, Mobilization and Insurance	1	ea.	$23,000	23,000
2	Construction Signage	1	ea.	$10,000	10,000
3	SWPPP	1	ea.	$15,000	15,000
4	12" PVC Watermain	4600	lf.	$86	395,600
5	Fire Hydrants	10	ea.	$4,500	45,000
6	Gate Valves	12	ea.	$2,500	30,000
7	Fittings	20	ea.	$500	10,000
8	Seeding and Restoration	3	acres	$2,500	7,500
	Total				536,100
	10% Contingency				54,234
	Total Construction Costs				590,334
	Legal and Administration Costs		non-eligible		11,000
	Engineering Costs				123,000
	Total Project Costs				**724,334**
			total eligible		713,334
			60% cost share		428,000

Life Cycle Cost Analysis Review

Sponsor: Watford City
Project Title: 12th St NE Watermain **Date:** October 30, 2019

Explanation of Alternatives:

The growth of Watford City has resulted in the need for new water mains to serve areas without water supply. Without the increase in water transmission infrastructure, the new subdivisions will not have access to water. By installing these water mains, the City will effectively be able to serve approximately 50 new connections.

Inputs:

	No Build	Install New 12" Watermain	Alternative 3	Alternative 4
Users Served	50			
Construction Cost	$0	$724,300	$0	$0
Annual O & M	$0	$0	$0	$0

Details:

The sponsors show no operations and maintenance expense for the new main.

Model Function:

The economic model appears to have functioned properly. The results are deemed to be reliable and repeatable with the inputs provided by the project sponsor.

LCCA Model Results:

Scenario Analysis - Present Value Life Cycle Cost Summary

Present Value	No Build	Install New 12" Watermain	Alternative 3	Alternative 4
Capital Costs	$0	$724,000	$0	$0
O&M	$0	$0	$0	$0
Repair, Rehab, Replacement	$0	$134,000	$0	$0
Salvage Value	$0	$7,000	$0	$0
Total PVC	**$0**	**$851,000**	**$0**	**$0**
PV Cost Per User	**$0**	**$17,020**		
PV Cost Per Municipal User	**$0**	**$521**		

Current Water Rate (Cost Per 5000g)		**$49**			
Average Water Rate (2019 WDP)		**$46**			
Total Municipal Service Users		1,634	1,634		
Cost-Share Percent		60%	60%		
	Local Share	$0	$289,600		
	Other Funding	$0	$0		
	Total Local	$0	$289,600		
Payment Per User With Cost-Share		**$0.00**	**$0.90**		
	Local Share	$0	$724,000		
	Other Funding	$0	$0		
	Total Local	$0	$724,000		
Payment Per User Without Cost-Share		**$0.00**	**$2.24**		

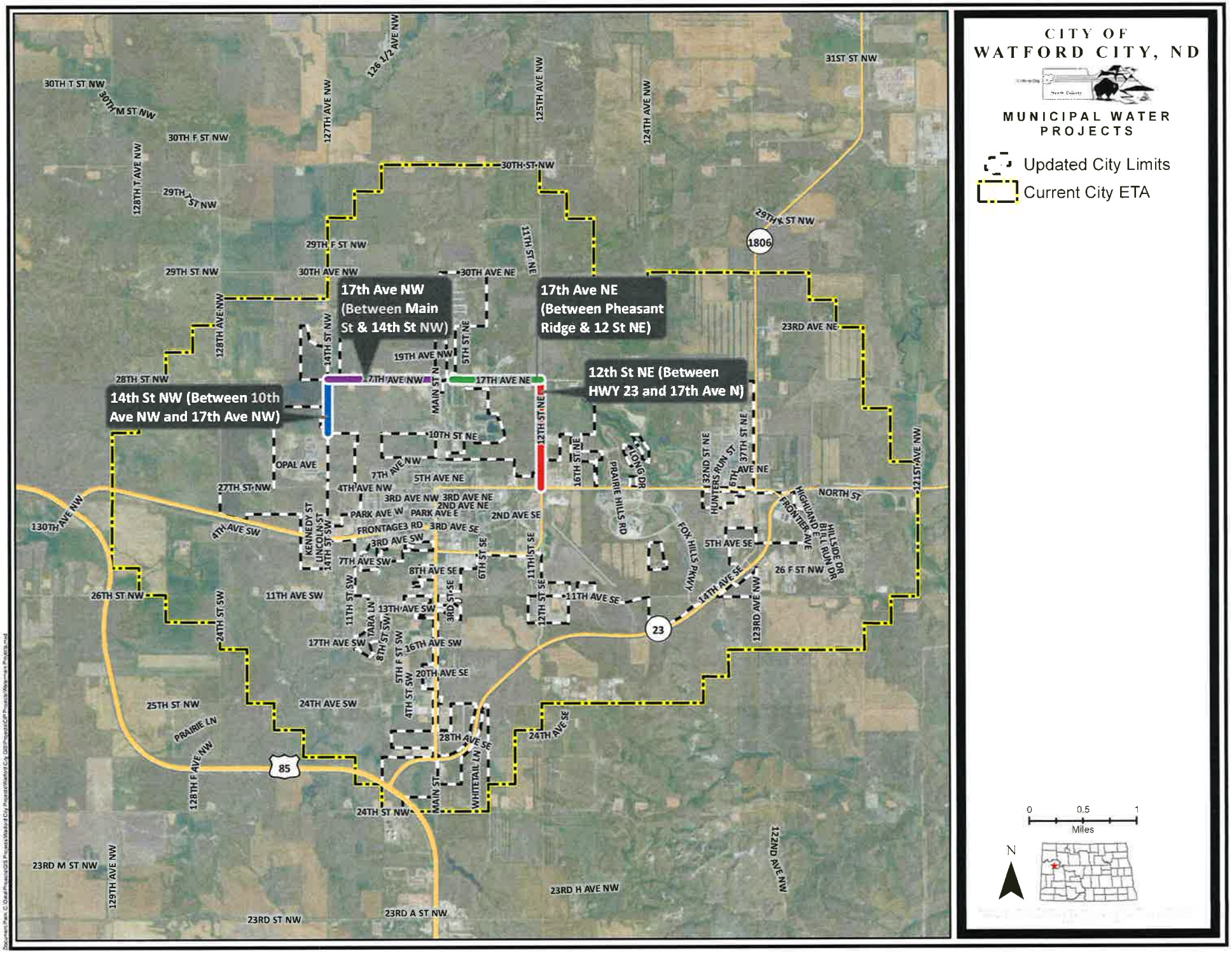
Explanation of Results:

The present value cost of the preferred alternative is $851,000. The cost per user on this stretch of the supply line is $17,020 and when spread across all system users it is $521. A comparison of local cost per user on the system shows, at 2% over 20 years, to fund this project it would cost each user $0.91 per month if the state provides maximum cost-share; and $2.24 if the entire project is borne by the local users. Watford City's current water rate is $49 per 5,000 gallons.

	Year		Annual Population Growth Rate	Average Annual Population Increase/Decrease
	2010	2018		
Population & Trends	1,744	7,080	38.2%	667

Other Comments:

This is one of 4 applications. Impacts to municiple users are likely to be cumulative with each project.


CITY OF
WATFORD CITY, ND
MUNICIPAL WATER
PROJECTS
Updated City Limits
Current City ETA
17th Ave NW
(Between Main
St & 14th St NW)
17th Ave NE
(Between Pheasant
Ridge & 12 St NE)
12th St NE (Between
HWY 23 and 17th Ave N)
14th St NW (Between 10th
Ave NW and 17th Ave NW)
0
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1
Miles
N
9/23/2019

APPENDIX O

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MEMORANDUM

TO: Governor Doug Burgum
Members of the State Water Commission
FROM: Garland Erbele P.E., Chief Engineer – Secretary
SUBJECT: Devils Lake Update
DATE: November 20, 2019

Hydrologic Update

Devils Lake rose to a maximum elevation of 1449.15 feet* in 2019. Summer precipitation in the Devils Lake Basin was near average and the lake dropped to an elevation of 1448.2 feet by early September. Heavy precipitation in September and October caused a significant late-season lake rise of six inches and the November 20th Devils Lake water surface elevation is 1448.75 feet. This is approximately seven inches higher than the lake level one year ago. Winter precipitation will be monitored and the first lake rise forecast is expected to be released in January 2020.

Outlet Update

Both outlets were shut down on the morning of September 21st because of heavy precipitation throughout the Devils Lake and Upper Sheyenne River Basins. Conditions were monitored for a potential continuation of outlet operation, however, the significant snowstorm in early October made it clear that the outlets would remain off for 2019. Downstream flow along the Sheyenne River remains significantly higher than average for this time of year.

The West and East Outlets discharged 45,185 acre-feet and 15,944 acre-feet respectively in 2019. At the current elevation, this volume equals approximately five inches off of the combined lake system. Both outlets performed reliably in 2019 and the outlet winterization process is complete. Staff continue to perform regular maintenance, water quality sampling, and snowpack sampling as necessary. No major repair or maintenance projects are expected to take place in the near future.

* All elevations noted refer to NGVD29

GE:JK:TD:ph/416-10

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MEMORANDUM

TO: Governor Doug Burgum
Members of the State Water Commission

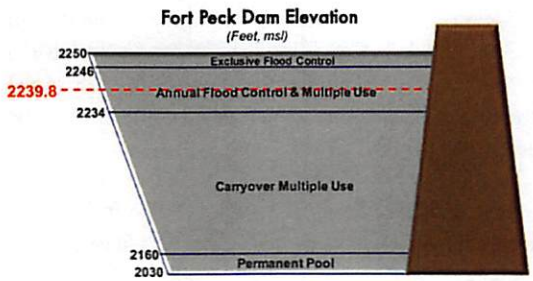
FROM: Garland Erbele, P.E., Chief Engineer-Secretary

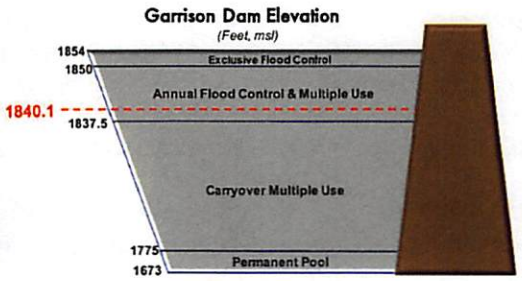
SUBJECT: Missouri River Update

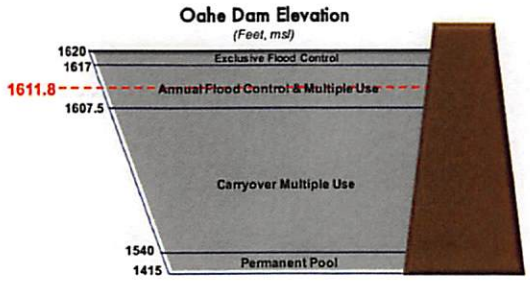
DATE: November 15, 2019

System/Reservoir Status

Reservoir elevations and system volume as of November 15, 2019 are presented in the schematics below and identified by the red lines. System storage is presented in million acre-feet (MAF). Historical data for the system is provided in a table on the following page.







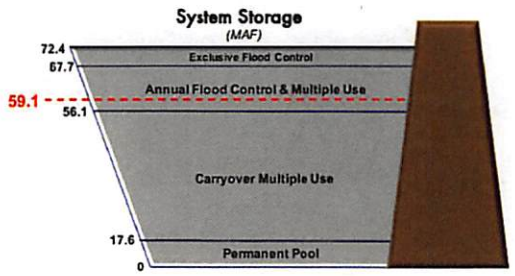
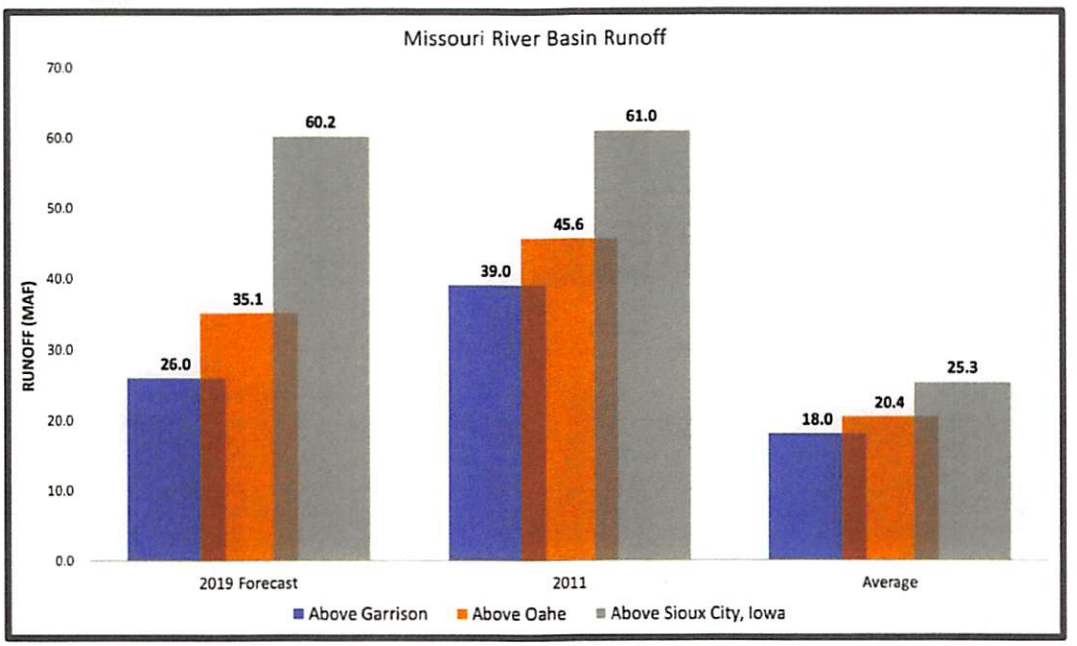


Table 1: Reservoir System Historical Data

	Reservoir Elevation (feet, msl)			System Storage (MAF)
	Fort Peck	Garrison	Oahe	
November 15, 2019	2,239.8	1,840.1	1,611.8	59.1
One-Year Ago	2,239.2	1,840.8	1,608.8	58.3
End of November				
Average	2,230.1	1,835.5	1,599.7	53.5
Record High (elev. [year])	2,245.3 [1975]	1,846.7 [1972]	1,612.4 [1997]	61.3 [1975]
Record Low (elev. [year])	2,199.8 [2004]	1,808.9 [2006]	1,573.2 [2006]	34.6 [2006]

Runoff and Reservoir Forecasts

Releases from Garrison Dam reached this year's peak discharge of about 48,000 cfs on October 18th and remained near that flow through the first half of November. Releases are anticipated to begin decreasing on November 20th. Current forecasts predict runoff above Sioux City for this year to be **60.2 MAF** or 238 percent of average. If this comes to fruition, the 2019 runoff above Sioux City would be the second highest on record, second only to the 61.0 MAF realized in 2011. The chart below compares the forecasted runoff for 2019 to that of 2011 and average runoff values for the portions of the basin above Garrison, Lake Oahe, and Sioux City.



As of November 13, the mountainous regions of the Missouri River Basin contained an early season snowpack. The snowpack in the "Above Fort Peck" reach was 3.0 inches of snow water equivalent (SWE), or about 120 percent of average. In the "Fort Peck to Garrison" reach, mountain snowpack was 3.2 inches of SWE, or about 115 percent of average.

According to the USACE's November Monthly Study, releases from Garrison Dam are anticipated to average 20,600 cfs in December, 24,600 cfs in January, and 25,000 in February. Releases from Garrison Dam will be reduced to 16,000 cfs during freeze-in of the river before gradually increasing back to about 24,000 cfs once ice has formed and stabilized.

GE:JGK:pdp/1392

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MEMORANDUM

TO: Governor Doug Burgum
Members of the State Water Commission

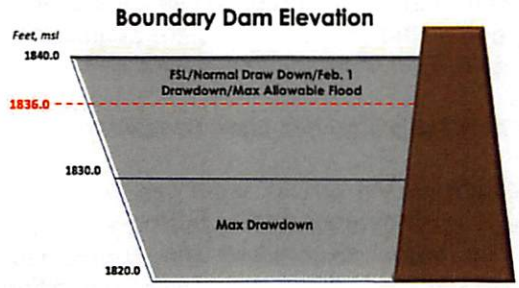
FROM: Garland Erbele, P.E., Chief Engineer-Secretary

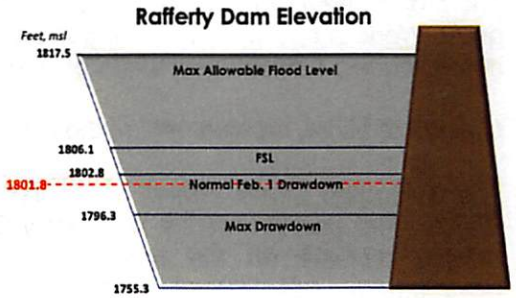
SUBJECT: Mouse River Update

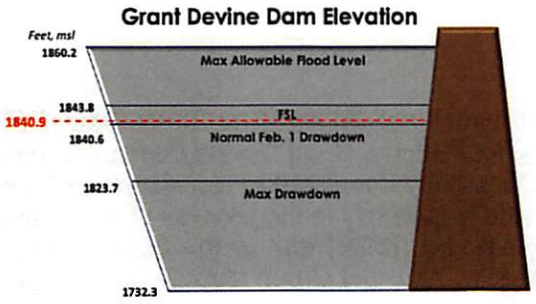
DATE: November 19, 2019

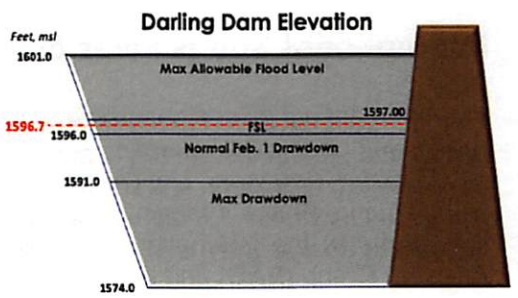
System/Reservoir Status Above Minot

Reservoir elevations as of November 18, 2019 are presented in the schematics below and identified by the red lines. System volume on November 18, 2019 in the four reservoirs above Minot was approximately 534,000 acre-feet, with an available flood storage volume of nearly 511,000 acre-feet.









Mouse River Enhanced Flood Protection Project (MREFPP)

The Souris River Joint Board (SRJB) sponsored Mouse River Enhanced Flood Protection Project (MREFPP) is a basin wide project looking to reduce flood risk in the Mouse River Basin within North Dakota.

In Minot, work has progressed on Phase MI-1 floodwalls and the Broadway Pump Station of the project. Approximate value of the work completed as of November is $24.61 million out of a total contract amount of $44.35 million, or approximately 55-percent complete.

Work on Phases MI-2 and MI-3 in Minot have also been progressing. The concrete and structural work at the 16th Street closure have been completed. The concrete wall will be stained in 2020 to match the water treatment plants floodwalls. Finishing touches are also being placed at the Perkett Ditch Pump Station.

On Phase MI-4, the project's design team is working with the Canadian Pacific Railroad to attempt to get an exception on the railroad's design requirements for their bridge. Currently, the 100-year flood event is above the low-chord of the bridge and if an exception isn't considered, the design team will be required to evaluate a raise to the railway.

The project team failed to come to an agreement with BNSF and pulled its federal BUILD grant. Work to reroute Phase MI-5 is being completed, which will require acquisition of approximately 8 additional structures and construction of an additional floodwall.

Outside of Minot, replacement of the Colton Avenue Bridge has been completed.

The Burlington Levee Project is moving forward as the project team has submitted a Section 408 permit with the U.S. Army Corps of Engineers and is hoping to start the bidding process on the project soon. The team resubmitted the supplemental Environmental Assessment, and the public comment period has closed with no additional comments. The project team is also working to acquire the easements necessary to complete the Burlington Levee.

International Souris River Study

The International Joint Commission's (IJC) International Souris River Study (Study) will review and update the operating agreements for Rafferty, Grant Devine (formerly known as Alameda), Boundary, and Darling Dams. The Study Board and its technical team have completed its Phase 4 modeling scenarios and is currently in the process of presenting the results to the International Souris River Board (ISRB) and to the Study's Public Advisory Group (PAG) and Resource and Agency Advisory Group (RAAG). The Study's Plan Formulation Committee (PFC) is working with these advisory groups to determine which alternatives or parts of alternatives can be added or tweaked, ultimately to be incorporated into Phase 5 of the Study, which is the final alternatives stage. The PFC is

meeting the week of December 2nd in Moose Jaw, Saskatchewan to discuss the input received from each advisory group and plot a path forward into Phase 5 of the Study.

The Study Board continues to engage with members of the First Nations, Metis, and Tribes. The Study Board held a workshop the first week of November with First Nations, Metis, and Tribes in Canada and the United States at the International Peace Gardens. The group discussed participation in the Study and setting up a longstanding relationship with the ISRB.

GE:CK:pp/1974/2122

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MEMORANDUM

TO: Governor Doug Burgum
Members of the State Water Commission
FROM: Garland Erbele, P.E., Chief Engineer-Secretary
SUBJECT: NAWS – Project Update
DATE: November 13, 2019

Biota Water Treatment Plant Design

A value planning workshop was held July 30, 2018 through August 2, 2018 for this project. The 30 percent design kickoff workshop was held October 3, 2018 through October 5, 2018. A 60 percent design kickoff meeting was held the first week of June 2019. A value engineering workshop was held the week of June 24, 2019. The Value Engineering report was received August 20, 2019. An accountability report responding to the input received from the value engineering report was submitted to Reclamation. The 60 percent design review meeting was held November 5, 2019. We expect to bid the general contract for plant construction and equipment installation in late spring/early summer of 2020.

Equipment procurement contracts will be issued for the ultraviolet (UV) disinfection equipment and the dissolved air flotation (DAF) equipment for this facility. The UV equipment procurement contract has been awarded to Xylem for low-pressure high intensity UV units in the amount of $707,125. The DAF equipment procurement bids were opened November 13, 2019. Xylem Water Solutions submitted a bid of $1,843,870 for its Leopold Clari-DAF system. The State Water Commission authorized Chief Engineer-Secretary Erbele to award this contract to the low responsive bidder in an amount not to exceed $2,250,000 at its August 8, 2019 meeting.

NAWS Contract 7-1B – Minot WTP Phase II Improvements

NAWS Contract 7-1B was awarded by the State Water Commission at its February 8, 2018 meeting to PKG Contracting and generally consists of construction of a new primary treatment building at the Minot water treatment facility to replace the aging softening basins, chemical storage and feed systems, laboratory, break room, and IT facilities. All contract documents have been executed, and the notice to proceed was signed March 21, 2018. A preconstruction conference was held that same day in Minot. Work on this project is currently underway. The substantial completion date for this contract is December 20, 2019. The contractor is currently behind schedule by three to five months. We are working with the contractor and encouraging them to mitigate further delays.

NAWS Contract 2-4A – Renville Corner to Westhope

This contract involves installation of roughly 17.5 miles of pipe and related appurtenances to extend the potable distribution system from the corner of US Highway 83 and State Highway 5 to six miles south of Westhope. Bids were opened for this contract February 28, 2019. Six bids were received,

and Kemper Construction of Minot, North Dakota was the low bidder at $4,274,260.50. The contract was awarded to Kemper March 21, 2019. A preconstruction conference was held in Minot May 8, 2019 and the contract documents were executed and the Notice to Proceed was issued May 16, 2019. As of November 8, 2019, all pipeline has been installed and pigged, with pressure testing beginning the week of November 11, 2019. One change order has been executed adding $16,292.00 and two days to the contract. The substantial completion date is November 4, 2019, and the final completion date is June 1, 2020.

NAWS Contract 2-3C – Lansford to Renville Corner

This contract will involve roughly 18 miles of pipe and related appurtenances to extend the potable distribution system north of Minot near Lansford to tie into the existing pipeline along Highway 5. This contract was awarded to Kemper Construction in the amount of $4,602,078.95. The contract documents have been executed. The preconstruction conference was held October 2, 2019 and the Notice to Proceed was executed at that time. The contractor had planned to begin work this fall weather permitting but conditions were poor. The substantial completion date for this contract is September 1, 2020 and the final completion date is October 1, 2020.

NAWS Contract 6-1A – Intake Modifications to Snake Creek Pumping Plant

The design kickoff meeting for Contract 6-1A was held October 3-5 in Denver. A 30 percent design review was held the first week of June. A value engineering workshop was held the week of August 19, 2019. We anticipate a procurement contract for the variable frequency drive (VFD) equipment for this project being beneficial due to the incoming voltage and power rating of the motors. The procurement documents are nearly complete and should be submitted for final review in November. This facility will have to come on line coincident with the completion and commissioning of the Biota Water Treatment Plant. A draft facility use agreement with Reclamation is currently being reviewed.

NAWS Contract SA No. 80

This contract generally consists of pumping out and cleaning of the vaults, exercising the valves, pressure testing, and making necessary repairs to the NAWS raw water line south of Minot to Lake Sakakawea. Bids were opened September 25, 2019 and the State Water Commission approved award of the Contract to Wagner Construction at its October 10, 2019 teleconference meeting. Contract documents have been executed. The preconstruction conference was held November 6, 2019 in Minot and the Notice to Proceed was issued at that time. The contractor anticipates beginning work the second or third week of November. The completion date for this project is July 31, 2020.

Remaining project components

Design is progressing for the two remaining pipeline contracts to Bottineau. A 90 percent design review for Contract 2-4B and 30 percent design review for Contract 2-4C was held September 12, 2019. A 30 percent design review for the Lansford Reservoir and Pump Station was held November 14, 2019. Design has also been initiated for the South Prairie Reservoir and hydraulic control structure. Hydraulic models, water allocations, and water needs are all being analyzed to maximize benefit to our citizens as the project moves forward. The current plan is to have all contracts necessary to get water from Lake Sakakawea to Minot and relief to Bottineau committed in calendar year 2020.

GE:TJF:pdh/237-04

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MEMORANDUM

TO: Governor Doug Burgum
Members of the State Water Commission
FROM: Garland Erbele, P.E., Chief Engineer - Secretary
SUBJECT: SWPP – Project Update
DATE: November 18, 2019

Contract 3-2D Six (6) MGD Water Treatment Plant (WTP) at Dickinson:
Administrative, punch list and change order items remain before the General, Mechanical and Electrical contracts can be closed out. All three contracts are expected to be closed out soon.

Contract 3-2E Residual Handling Building at Dickinson WTP:
The preconstruction conference for this contract was held on October 5, 2017 with all three contractors; Rice Lake Construction Group, Central Mechanical Inc., and Edling Electric. The General Contractor, Rice Lake Construction Group, mobilized to site on October 16, 2017. The contract had a milestone completion date of September 1, 2018 for having the building enclosed and a Substantial Completion date of February 28, 2019. The Milestone Completion was considered achieved on October 19, 2018. General Contractor requested a time extension request for 81 days on the Milestone, Substantial and Final completion dates. Their request was based on submittal review delays and a trucker strike in India. Their request was reviewed, and 31 days of extension was determined to be justified. With the Change Orders executed, the Milestone and Substantial Completion dates were extended to October 10, 2018 and April 10, 2019. Contractor requested 130 days in time extension for abnormal weather conditions. Their request was reviewed and 27 days were provided for extension. This extended the Milestone and Substantial Completion dates to November 20, 2018 and May 20, 2019 respectively.

Start up for the two filter presses included in the contract was held on April 26, 2019 and May 1, 2019. Paving was completed and the occupancy permit from the City of Dickinson was received on July 2, 2019. During the week of July 8th, Southwest Water Authority staff started operating the facility. The seals on the two sludge feed pumps developed leaks in early August and in September. The cause of the leaks is under investigation.

To date, three change orders totaling $86,746.16 (1 percent of the contract amount) on the General contract, one change order extending the completion dates to the Electrical contract, and two change orders totaling $36,934.95 (6 percent of the Contract amount) to the Mechanical contract, have been signed by all parties.

Contract 5-1A and 5-2A 2nd Richardton Reservoir and 2nd Dickinson Reservoir:
Both reservoir contracts have been closed out. Record drawings are currently being prepared by BW/AECOM.

Contract 2-1B Raw Water Line Capacity Upgrade from intake to OMND WTP:
The scope of work for Contract 2-1B generally consists of furnishing and installing 19,026 lineal feet of 30" diameter steel pipeline. The contract was substantially complete on November 15, 2018. A few punch list items and administrative items remain before the contract can be closed out. Two change orders totaling $227,269.68 (4 percent of the contract amount) have been signed by all parties.

Contract 1-2A Supplemental Raw Water Intake:
The contractor, J.W. Fowler Company (JWF), launched the Microtunneling Boring Machine (MTBM) along the 2nd alignment in August 2017. On October 5, 2017, JWF had installed approximately 1000 feet of intake pipe when employees observed some cracks on pipe no. 58 located approximately 500 feet from the caisson. After pushing a few additional pipes, the cracks worsened. On October 18, 2017, JWF informed the SWC that the best course of action to remediate the incident was to leave the installed pipe string in place and pursue other options to complete the intake pipe to the screen location.

The contractor's plan for completing the project using Horizontal Directional Drilling (HDD) method has been reviewed a few times with more clarifications and details sought to complete the application to the federal agencies (Bureau of Reclamation and US Army Corps of Engineers) for the construction license and easement. A meeting was held on April 24, 2019 with the US Army Corps of Engineers to explain the new plan from the contractor and the timeline for obtaining the construction license and easement. We were informed that the most optimistic timeline for receiving the construction license and the easement is November 2019, if the application is submitted without delay. A meeting with the contractor, their insurance broker, SWC, Office of Risk Management and BW/AECOM to discuss the insurance package and the path forward was held on August 20, 2019. The contractor is now able to secure insurance that meets the contract specifications. At the meeting, JWF also informed us that they were not able to finalize the contract with the HDD subcontractor they have been working with for over a year. They are currently

negotiating a contract with a different well-known HDD contractor. JWF sent a letter requesting a non-compensable time extension to June 2021 and returning the $500,000 withheld on Change Order #7 that covered the estimated actual damages for SWC. Fowler's request was to meet the additional cost to procure 36" steel pipe for the third attempt. A response letter was sent to the contractor stating that based on the current contract conditions, Fowler is obligated to provide 36" steel pipe. The letter also quantified the costs SWC has incurred and will be incurring because of the delay in completion of the Supplementary Intake Project. Fowler was also notified that, they have not demonstrated any entitlement or justification for relief of Liquidated Damages specified in the contract.

SWC has obtained the easement for the drill rig site.

On May 23, 2019 a sink hole developed on the site along the first micro-tunneling alignment. The sinkhole was filled by JWF's construction crew immediately. In order to determine the presence and locate any additional underground voids due to the original tunnel collapse or any other cause, JWF completed an Electrical Resistivity Tomography survey. The survey showed some areas that needed additional investigation. The contractor will propose a drilling program to perform additional investigation.

We received an open records request in response to the lawsuit between JWF and their MTBM equipment insurance provider QBE Insurance Corporation in June 2019. Response to the request was provided in August.

<u>Contract 4-1E/4-2B Upgrades at the Dodge and Richardton pump stations:</u>
Contract 4-1E/4-2B, Dodge and Richardton Pump Station Upgrades, mainly includes replacement of three existing 700 horsepower (HP) vertical turbine pumps with 1000 HP vertical turbine pumps and installation of one new 1000 HP vertical turbine pump at Dodge pump station along with associated valves, piping and electrical work, replacement of three 900 HP vertical turbine pumps with 1250 HP pumps at the Richardton pump station along with associated valves, piping and electrical work. The scope of work also includes construction of two new surge control systems, a 6,079 cubic foot (CF) air chamber at the Richardton pump station, a 1,507 CF air chamber downstream of the Dodge pump station, replacement of surge air chamber probe wells at two existing air chambers, replacement of concrete pump pedestals, new mechanical systems including exhaust fans and inlet louvers. Bid Alternates were included for many replacement items which are eligible for reimbursement from the Replacement and Extraordinary Maintenance (REM) fund.

Contracts were awarded at the October 11, 2018 SWC meeting. A preconstruction conference was held on April 3, 2019. A change order to include upgrading the chloraimination equipment at the Dodge pump station to accommodate higher flows will be included in this contract.

Majority of the work included in the Mechanical Contract are items eligible for reimbursement from the REM fund. Mechanical contract is around 78 percent complete.

General and Electrical Contract work is dependent on delivery of equipment which have long lead times. Major work on the General and Electrical contract was expected to happen in the Fall of 2019. However, BWAECOM has not even received submittals for the two surge air chambers included in the contract because of some personnel issues with the General contractor's supplier. The delivery of the pumps is also delayed because of undesirable test results. The General contractor sent a letter with formal notification for time extension request because of the delay from their equipment supplier. Duration of the extension is not specified in the letter. A response was sent to the Contractor with an altered sequence of construction, however with regard to the time extension request none was provided and also requested documentation of any justified extension as provided in the contract.

Contract 5-9A 2nd Belfield Tank:
The scope of this contract generally consists of furnishing and installing an approximately 750,000-gallon welded steel or glass fused bolted ground storage reservoir. Bids for this contract were opened on September 17, 2019. This contract was awarded to Landmark Structures I, LP at the October 10, 2019 SWC meeting. Notice of Award was signed on October 28, 2019 after receiving concurrence from Garrison Diversion Conservancy District and Bureau of Reclamation. We expect to receive contract documents soon.

Contract 5-13A 2nd Davis Buttes Tank:
The scope of this contract generally consists of furnishing and installing an approximately 1,000,000 gallon welded steel or glass fused bolted ground storage reservoir. Bids for this contract were opened on September 17, 2019. This contract was awarded to Landmark Structures I, LP at the October 10, 2019 SWC meeting. Notice of Award was signed on October 28, 2019 after receiving concurrence from Garrison Diversion Conservancy District and Bureau of Reclamation. We expect to receive contract documents soon.

Contract 2019-1 Blowoff Upgrades:
The scope of this contract includes removing and replacing five existing blowoff manholes along with associated piping, furnishing and installing one butterfly valve in an existing blowoff manhole, complete with piping, valves, site work, cathodic protection and other appurtenant items. The estimated construction cost of this contract is $225,000. Bids for this contract was opened on August 13, 2019. We received two bids. The low bid was from Northern Improvement Company for $209,200. The other bid was from BEK Consulting, LLC for $315,550. At the August 9, 2019 Commission meeting, the commission authorized the award of the contract to the lowest responsible bidder. The contract documents have been executed with Northern Improvement Company. Work on this contract is expected to happen in Spring 2020.

Future Contracts:
The SWA sent a letter requesting the SWC to study, design and build distribution capacity for the future. Waiting list users on the Project are updated monthly and at the time of the letter, SWA had 692 waiting list locations. Analysis of the 911 address information indicated that there are over 4,000 potential locations on the SWPP service area that are not currently served by the Project.

SWA is requesting a three-prong approach to meeting the distribution capacity need. The three prongs include: 1. Improvements to the transmission facilities from the Ray Christenson Pump Station to the first tanks in the distribution system 2. Addressing the waiting list users by implementing hydraulic improvements like booster pump station, parallel piping and water reservoirs at strategic locations and 3. Canvassing targeted service areas for users interested in signing up for rural water and design a rural distribution system for that area.

SWC staff supports that approach and in response have directed BW/AECOM to provide Specific Authorizations for the design of Main Transmission Line (MTL) upgrades from the Ray Christensen Pump to Davis Buttes, Belfield and New England Reservoirs and for the preliminary design of distribution system expansion. Design of the MTL is expected to be completed in Spring 2020 followed by construction in Summer 2020. The preliminary design report for distribution system expansion is expected to be completed by Spring 2020, followed by selection of projects for construction. Design of the projects selected for construction will be completed by Spring 2021, followed by construction.

Specific Authorization No. 219, for the preliminary design of distribution system expansion and Specific Authorization No. 220, for developing bid ready contract documents for the main transmission lines from the Ray Christensen Pump Station to the New England Reservoir, Belfield Reservoir and Davis Buttes Reservoir have been executed and work is progressing.

Ownership Transfer Study:
Draft technical memos from Apex Engineering Group are discussed in a separate memo.

GE:SSP:1736-99