



WYOMING WATER DEVELOPMENT COMMISSION

WATER DEVELOPMENT COMMISSIONER ORIENTATION

WWDO 6920 Yellowtail Road | Cheyenne, WY

Wednesday, May 11 | 9:00 AM

Livestream will not be available

JOINT MEETING: WWDC/SWC

Wyoming State Capitol Auditorium

200 W. 24th Street | Cheyenne, WY 82002

Thursday, May 12, 2022 | 8:30 AM

Livestream is available on the Legislature's website: www.wyoleg.gov.

To provide public comment for this meeting, or to view the Select Water Committee agenda, please visit the Legislature's website: www.wyoleg.gov.

JOINT MEETING AGENDA: Thursday, May 12 | 8:30 Am

**Action Item*

1. Call to Order
2. Pledge of Allegiance
3. Recognition of members present to establish a quorum
4. Approval of Minutes (A)
 - March 15, 2022: Workshop
 - March 16, 2022: Meeting

- *WWDC*
5. Planning Project Closeout Memos (B)
 - City of Torrington #16 Well
 - Lower Shoshone Watershed, Level I Study
 - South End Water Users ISD Transmission, Level II Study

- *WWDC/SWC*
6. Planning Project Amendments (C)
 - Big Wind River Storage, Level II, Phase II Study, Amendment No. 2
 - Little Wind River Storage, Level II, Phase II Study, Amendment No. 2
 - Douglas Test Well, Level II Study, Amendment No. 3
 - LaPrele ID Rehabilitation, Level II, Phase II Study, Amendment No. 5
 - Project Update

- *WWDC*
7. Middle Piney Reservoir SUP Amendment (D)

Updated: May 6, 2022

- *WWDC/SWC 8. Construction Contingency Funds (E)**
- Middle Piney Reservoir
- 9. Fontenelle Reservoir Contributed Funds Agreement (F)**
- *WWDC/SWC 10. Planning Projects Consultant Selection & Contract Approval (G)**
- Cloud Seeding: Operations Hydrological Assessment, Medicine Bow & Sierra Madre Mountain Ranges, Level II Study
 - Critical Aging Irrigation Infrastructure Assessment, Level I Study
- *WWDC 11. New Level I and Level II Project Applications**
- Level I Reconnaissance Projects – New Development (H)**
- Glendo Water Master Plan
 - Newcastle Water Master Plan
 - Orchard Valley Water Master Plan
 - Ranchester Water Master Plan
 - Wardwell Water Master Plan
- Level II Feasibility Projects – New Development (I)**
- CWRWS Well Field Study
 - GR/RS/SC JPWB Eastside Zone Study
- Level I Reconnaissance Projects – Rehabilitation (J)**
- Casper Alcova ID Master Plan
 - Goshen ID Master Plan
 - Sidon ID Master Plan
 - Tillard Canal Master Plan
- Level II Feasibility Projects – Rehabilitation (K)**
- Cody Canal Rehabilitation
 - Highland ID Rehabilitation - Withdrawn
 - Lakeview ID Rehabilitation
 - Shoshoni GW Supply & Transmission
 - Upper Sunshine Outlet Works Rehabilitation
 - Willwood ID Rehabilitation
- *WWDC/SWC 12. UW Office of Water Programs FY23-24 MOU (L)**
- *WWDC/SWC 13. UW Water Research Program (M)**
- UW Water Research Program MOU
 - Consideration of 2023 RFP for the UW Water Research Program
-

14. Construction Project Closeout Memos (N)

- Hanover Cottonwood Spill 2018
- Wheatland ID Tunnel Dam Rehabilitation
- Heart Mountain ID Rehabilitation 2017
- Midvale Irrigation District Rehabilitation 2019
- Pioneer Transmission Pipeline 2017

***WWDC 15. Construction Project Amendments (O)**

- Amendment Nine to Project Agreement Gillette Madison Pipeline Project

16. State Engineer's Office Update

17. Future Meetings Schedule (P)

18. Discussion

19. Adjourn

WYOMING WATER DEVELOPMENT COMMISSION
COMMISSIONERS

March 2022

Mark Kot, Chairman 800 Rose Crown Cir. Rock Springs, WY 82901 (H) 307-362-1488 (C) 307-350-9347 (W) 307-872-3917	Water Division IV
Ron Kailey Jr., Vice-Chairman 2532 Plainview Rd. Cheyenne, WY 82009 (C) 307-631-7337	Water Division I
Liisa Anselmi-Dalton, Secretary 1735 Collins St. Rock Springs, WY 82901 (C) 307-389-4496	Member-at-Large
Robert Choma P.O. Box 1031 Thayne, WY 83127 (H) 307-883-4198 (C) 307-413-2842	Water Division IV
Leonard A. "Lee" Craig 698 Road 5 Powell, WY 82435 (H) 307-754-9722 (C) 307-254-5115	Water Division III
Clinton W. Glick P.O. Box 1308 Fort Washakie, WY 82514 (C) 307-349-0103	Wind River Indian Reservation
John Lawson 4237 Mink Casper, WY 82604 (H) 307-234-5870	Water Division I
Sheridan Little P.O. Box 165 Leiter, WY 82837 (C) 307-620-0923	Water Division II
Larry Suchor 21 Spruce St. Pine Haven, WY 82721 (H) 307-756-9491 (C) 307-660-5394	Water Division II
VACANT	Water Division III

WYOMING WATER DEVELOPMENT COMMISSION
COMMISSIONERS

Mark Kot, Chairman	Water Division IV
Ron Kailey, Vice-Chairman	Water Division I
Liisa Anselmi-Dalton, Secretary	Member-at-Large
Robert Choma	Water Division IV
Leonard A. "Lee" Craig	Water Division III
Clinton W. Glick	Wind River Indian Reservation
John Lawson	Water Division I
Sheridan Little	Water Division II
Larry Suchor	Water Division II
Vacant	Water Division III

STAFF

Jason Mead	Interim Director
David Ray	Administrative/Fiscal Manager
Janet Belmonte	Accountant
Nancy Casner	Office Support Specialist
Miranda Russell	Business Office Coordinator

Barry Lawrence	Deputy Director – Planning
Chace Tavelli	Technical Resource Coordinator
Keith Clarey	Project Manager
Julie Gondzar	Project Manager
Mabel Jones	Project Manager
George Moser	Project Manager
Jodie Pavlica	Project Manager
Mike Robertson	Project Manager
Jay Smith	Project Manager

Jason Mead	Deputy Director – Dams & Reservoirs
Andrew Linch	Project Manager
Vacant	Project Manager
Vacant	High Savery Dam Technician

Bill Brewer	Deputy Director – Construction
Sol Brich	Project Manager
Wade Verplancke	Project Manager
Jennifer Russell	Project Manager
Ken Mitchell	Project Manager
Larry Mallo	Project Manager
Jeffrey Kaiser	Project Manager

ADVISORS

Darren Cook	Attorney General's Office
Brandon Gebhart	State Engineer
Greg Kerr	University of Wyoming
Josh Dorrell	Wyoming Business Council

**SELECT WATER COMMITTEE
REVISED 05/07/21**

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WYOMING WATER DEVELOPMENT COMMISSION

WWDO Workshop: Large Conference Room

Water Development Office, 6920 Yellowtail Road, Cheyenne, WY

March 15, 2022

Workshop Minutes

1. Chairman Clinton Glick called the meeting to order at 1:30 p.m.
2. **Roll Call** – Secretary Ron Kailey, Jr.

Commission Attendance:

Clinton W. Glick, Chairman
Bill Yankee, Vice-Chairman
Ron Kailey, Jr., Secretary
Liisa Anselmi-Dalton
Robert Choma
Leonard A. “Lee” Craig
Mark Kot
John Lawson
Sheridan Little – Virtual
Larry Suchor – Excused

Following the roll call and recognition of members present to establish a quorum, a motion was made and seconded to swap the order of items #4 Project Updates and #5 Construction Contingency Funds on the agenda. Motion passed unanimously.

3. **Legislative Update**

Interim Director Jason Mead provided a legislative update for the following:

- HB 0001/SF 0001: General Government Appropriations
- HB 0006: ARPA Funds for Water and Wastewater Projects
- HB 0036: Severance Tax Distribution Revision
- HB 0073: Omnibus Water Bill – Planning
- HB 0107: Water State Revolving Funds Amendments
- SF 0066: American Rescue Plan Act Recovery Funds Appropriations
- SF 0080: Omnibus Water Bill – Construction
- SF 0082: Supplemental Water Development Funding

The Omnibus Water Bill – Planning and Omnibus Water Bill – Construction were specifically highlighted to include the removal by the Select Water Committee of the Willwood project as part of the UW Research Program slate of projects in the Planning Bill; and discussion of the

three amendments to the Construction Bill dealing with the potential of 4 projects, if eligible, utilizing ARPA funding before Water Development funding; an additional \$5 million in Account III sponsor contingency funds; and a change in loan terms for the GID Tunnel Rehabilitation 2022 project. Lastly, passage of Senate File 82, the Supplemental Water Development Funding Bill was discussed in depth which included funding for Goshen Irrigation District tunnels, Fontenelle Reservoir and the LaPrele Dam Rehabilitation. It was noted that funding for these projects was coming from LSRA funds and not general funds.

4. Construction Contingency Funds

Bill Brewer, Deputy Director – Construction, explained the proposed change in construction length of two Eden Valley Irrigation and Drainage District projects. He elaborated on funding percentage details to explain the phases to the Commission. The Commission approved of the proposed changes and to allow bidding to move forward on the two projects. Mr. Brewer also updated the commission on the current status of the Shell Valley Watershed Improvement District – Leavitt Reservoir Expansion Project. Discussion ensued.

Representative Evan Simpson voiced his concern about the Leavitt Reservoir Expansion receiving Sponsor Contingency funds. He encouraged the Commission to offer a project amendment through the Omnibus water bill – construction during the 2023 Legislative session and re-bid the project at a later time.

Chairman Clinton Glick called for a 10-minute break at 2:25pm to allow for the preparation of Project Update presentations. Workshop resumed at 2:35pm.

5. Project Updates

LaPrele Irrigation District Rehabilitation

Pete Rausch, Water Resources Engineer, RESPEC introduced himself, his colleagues (Verena Winter, HDR), and the project sponsor (Anna McClure and Colt Rodeman, LaPrele Irrigation District). He proceeded with a slideshow presentation to explain in detail the status of the LaPrele Irrigation District Rehabilitation project and their plan in moving the project forward.

Goshen ID Tunnel Rehabilitation

Kevin Strecker, Manager - Goshen Irrigation District and Cory Foreman, Associate Vice President - HDR introduced themselves. A slideshow presentation ensued to explain the status of the Goshen Irrigation Tunnel Rehabilitation project.

6. New Level I and II Project Applications (Received by March 1)

Barry Lawrence, Deputy Director – Planning, briefly summarized the Level I and Level II planning project applications received by the application deadline and the entirety of the Consultant Selection process. He then provided an overview of how the 17 applications were assigned to WWDO Project Managers and further assigned amongst the Commission for project shadowing throughout the life of the project(s) from application site visit, proposal reviews, interviews, project kickoff, all the way to the draft report presentation upon the completion of the project(s).

7. 2022 Summer Tour/Meeting – Afton, WY – August 17-19, 2022

Jason Mead confirmed Afton as the location for the Summer Tour and Workshop. The Workshop will begin the morning of the 17th; the tour will take place on the 18th; and the Meeting will commence on the 19th.

8. Discussion

Interim Director Jason Mead reminded the Commission of the need to appoint a new Chair, Vice-Chair, and Secretary on March 16. He then invited State Engineer Brandon Gebhart, former WWDO Director to make a few remarks. Mr. Gebhart explained his gratitude for his time with the Water Development Office; the Commission recognized Mr. Gebhart's ability to lead the agency and the Commission with immediate adaptability, courage, and leadership.

9. Adjournment

Commissioner Anselmi-Dalton moved to adjourn the meeting at 3:22pm. Seconded by Commissioner Ron Kailey, Jr; Motion carried unanimously.

Respectfully submitted,

Ron Kailey, Jr., Secretary



WYOMING WATER DEVELOPMENT COMMISSION

WWDO Regular Meeting: Large Conference Room
Water Development Office, 6920 Yellowtail Road, Cheyenne, WY
March 16, 2022

Meeting Minutes

1. Chairman Clinton W. Glick called the meeting to order at 8:30 a.m.
2. The pledge of allegiance was recited.
3. **Recognition of Members Present to Establish Quorum** – Secretary Ron Kailey, Jr.

Commission Attendance:

Clinton W. Glick, Chairman
Bill Yankee, Vice-Chairman
Ron Kailey, Jr., Secretary
Liisa Anselmi-Dalton
Robert Choma
Leonard A. “Lee” Craig
Mark Kot
John Lawson
Sheridan Little – Virtual
Larry Suchor – Virtual

Advisor Attendance:

Darren Cook, Attorney General’s Office

4. **Election of Officers**

A motion was made by Commissioner Robert Choma to nominate Commissioner Mark Kot as Chairman; seconded by Commissioner Liisa Anselmi Dalton. Motion carried unanimously. A motion was then made by Commissioner Lee Craig to nominate Commissioner Ron Kailey, Jr. as Vice-Chairman; seconded by Commissioner Liisa Anselmi-Dalton. Motion carried unanimously. A final motion was made by Commissioner Bill Yankee to nominate Commissioner Liisa Anselmi-Dalton as Secretary; seconded by Commissioner Ron Kailey, Jr. Motion carried unanimously. All elections were effective immediately.

5. **Approval of Minutes**

WYOMING WATER DEVELOPMENT COMMISSION

- January 25, 2022 Workshop Minutes: Chairman Mark Kot moved to approve. Commissioner Bill Yankee seconded; Motion carried unanimously.
- January 26, 2022 Meeting Minutes: Vice-Chairman Ron Kailey, Jr. moved to approve. Commissioner Robert Choma seconded; Motion carried unanimously.

6. 2022 Level I and II Planning Project Contracts

Level I Projects – New Development

- Clarks Fork/Upper Shoshone Watershed Study
- Dayton Water Master Plan
- Riverton Regional Water Master Plan

Level II Projects – New Development

- LaGrange Groundwater Supply & Improvements
- Pavillion Groundwater Supply

Level I Projects – Rehabilitation

- West Afton/Nield String Master Plan

Level II Projects – Rehabilitation

- Dowlin Diversion Rehabilitation

Jason Mead, WWDO Interim Director walked through each of the 2022 planning project contracts. A brief discussion ensued. Commissioner Bill Yankee moved to approve all Level I and Level II planning project contracts as presented. Seconded by Secretary Liisa Anselmi-Dalton. Motion carried unanimously.

7. Small Water Project Program – Funding Applications

Program Manager Jodie Pavlica reviewed the Account I and Account II 2022 Small Water Project Program Funding Applications (74 projects) submitted by the Sponsors.

Secretary Liisa Anselmi-Dalton moved to approve the total funding request of \$1,655,200.00 for all 59 Account I Small Water projects, contingent upon Senate File 80 becoming law. Seconded by Commissioner Bill Yankee; Motion carried unanimously.

Vice-Chairman Ron Kailey, Jr. moved to approve the total funding request of \$394,150.00 for all 15 Account II Small Water projects, also contingent upon Senate File 80 becoming law. Seconded by Commissioner Lee Craig; Motion carried unanimously.

Commissioner Yankee noted as to the wide spread nature of the projects statewide and thanked the WWDO staff for all of their efforts.

8. 2022 Construction Project Agreements – Account I

Interim Director Jason Mead explained the Account I, Level III construction project agreements:

- Crystal Bypass Pipeline 2022
- Evanston Transmission Pipeline 2022
- Gillette Regional Extensions Phase VI 2022
- Northwest Rural Water System Improvements 2022

Secretary Liisa Anselmi-Dalton moved approval of \$5,591,150 for Account I construction projects as presented with the caveat that if the projects are eligible for ARPA funding, it shall be used first; also contingent upon Senate File 80 becoming law and upon the Attorney General's approval. Seconded by Vice-Chairman Ron Kailey, Jr.. Motion carried unanimously.

9. 2022 Construction Project Agreements – Account II

Interim Director Jason Mead explained the Account II, Level III construction project agreements:

- Big Horn Canal Adobe Check Structure 2022
- Cottonwood Irrigation District Pipeline Replacement 2022
- Deaver ID Rehabilitation 2022
- Dry Creek Irrigation District Pipeline Replacement 2022
- Goshen ID 29.4 Pipeline Project Phase II 2022
- Goshen ID Tunnel Rehabilitation 2022
- Highland Hanover ID System Improvements 2022
- Lovell Moncur Lateral Phase II Rehabilitation
- Owl Creek Irrigation District System Improvements

Chairman Mark Kot motioned to approve funding for Level III project rehabilitation agreements in the amount of \$17,702,910.00 contingent upon Senate File 80 becoming law and subject to the obtainment of AG approval. Seconded by Commissioner John Lawson. Motion carried unanimously.

10. 2022 Construction Project Amendments

Interim Director Jason Mead explained the Level III construction project amendments:

- GR/RS/SC Raw Water Reservoir
 - i. One-year time extension
- Laramie North Side Tank
 - i. Two-year time extension
- Broken Wheel Ranch Water Supply 2017
 - i. One-year time extension
- Gillette Regional Extensions 2017
 - i. Two-year time extension

- Laramie Valley Diversion Structure 2020
 - i. Added \$700,000 to contract: split funds - 67% grant, 33% loan

Chairman Mark Kot moved to approve amendments for the Level III projects, contingent upon Senate File 80 becoming law and the Attorney General's office contract approval. Seconded by Vice-Chairman Ron Kailey Jr.. Motion carried unanimously.

11. Construction Contingency Funds

Interim Director Jason Mead explained the construction contingency funds:

Eden Valley Irrigation & Drainage District – 2 Projects

Commissioner Bill Yankee moved to accept the Water Development Office's recommendation to allow the Eden Valley Irrigation and Drainage District to bid the project with the portion of the canal's bid as "add alternate" to allow the main portion of the project to be completed with the funds appropriated and add additional canal length if funding allows for both the Farson Lateral 2020 and the System Improvements Projects. Seconded by Commissioner Robert Choma. Motion carried unanimously.

Shell Valley Watershed Improvement District – Leavitt Reservoir Expansion Project

Commissioner Lee Craig moved to accept the Water Development Office's recommendation of foregoing additional Account III Sponsor's Contingency funding for the Leavitt Reservoir Expansion project at this time, and to re-evaluate the project, bringing an amendment forward for the Commission's consideration in November. Seconded by Secretary Liisa Anselmi-Dalton. Motion carried unanimously.

12. Future Meetings Schedule

Conversation of future meetings ensued regarding the May Commission Meeting and Workshop; the summer tour in Afton and lodging arrangements were also discussed. The tour is confirmed to take place in conjunction with the August 17-19 Commission Meeting and Workshop.

13. Discussion

An office-specific informational meeting to discuss accounts and other office procedures ("Water Development 101") was offered by Interim Director Jason Mead. This discussion will be held in lieu of the Commission Workshop in May.

Clinton Glick, Bill Yankee, and Ron Kailey, Jr. were thanked by the Commission for the time served in their roles. Newly-elected Chairman Mark Kot, Vice-Chairman Ron Kailey, Jr., and Secretary Liisa Anselmi-Dalton were congratulated on their elections.

14. Adjournment

WYOMING WATER DEVELOPMENT COMMISSION

Vice-Chairman Ron Kailey, Jr. made a motion to adjourn the meeting at 9:45a.m. Secretary Liisa Anselmi-Dalton seconded the motion. Motion carried unanimously.

Respectfully submitted,

Liisa Anselmi-Dalton, Secretary



**FINAL PROJECT CLOSEOUT SUMMARY
FOR GROUND WATER EXPLORATION GRANT
PROJECTS
WYOMING WATER DEVELOPMENT OFFICE
PLANNING DIVISION**



The Planning Project listed below is complete and scheduled for closeout. This memo serves to summarize the findings of the final report and to document the final contract amount.

PROJECT: **Torrington Groundwater Well #16**
SPONSOR: City of Torrington
LOCATION: Torrington, Wyoming
PROGRAM: New Development – Ground Water Exploration Grant
PROJECT MGR: George Moser, P.G.
WWDC MTG DATE: May 12, 2022

<u>Account</u>	<u>Grant (75%)</u>	<u>Date WWDC Approved</u>
I – Ground Water Exploration Grant	\$120,000.00	March 20, 2020

CURRENT CONTRACT

Between WWDC and City of Torrington

Consultants

AVI Professional Corporation
Cheyenne, WY

Contractor

Sargent Drilling
Broken Bow, NE

Hinckley Consulting
Laramie, WY

<u>Original Contract Amount</u>	<u>Final Contract Amount (75%)</u>	<u>Contract Savings Amount</u>	<u>Sponsor Share of Expense (25%)</u>
\$120,000.00	111,049.13	8,950.87	37,016.37

PROJECT DESCRIPTION:

The grant funds were for drilling, completion and testing of a new municipal water supply well to supplement the existing supply. The City of Torrington relies heavily on a wellfield west of town with one well in town. This new (No. 16) well is intended to augment the in-town well in the event the main wellfield is compromised for reasons such as lightning strike, flooding, or pipeline breakage.

PROJECT FINDINGS/RECOMMENDATIONS:

A small-diameter hole was drilled from ground surface, through the North Platte River “Valley Fill Aquifer”. At the project location, the alluvial aquifer consisted of poorly sorted, unconsolidated, sand, gravel, and cobbles up to 8-inches in diameter. Beneath the alluvial aquifer, the siltstone “Brule Member” of the White River Formation was encountered at 197 feet below ground surface (bgs). The well was screened from 170- to 120-feet bgs with 18-inch, 0.090-inch slot, stainless steel well screen. Solid (or “blank”) casing extended from the top of the screen to ground surface. The well was completed with gravel pack from 175- to 90-feet bgs.

Following drilling and construction, the well was test pumped at rates up to 2,400 gallons per minute. The test pumping demonstrated that the well and aquifer are very productive, with a calculated specific capacity of 159 gallons per minute per foot of drawdown. The static water level varies between 20 and 25 feet below ground surface and, at the planned production capacity of 1,500 gallons per minute, the drawdown is anticipated to be about 10 feet.

Uranium and nitrates are of special concern in the area based on results from other local wells. The uranium concentration from Well No. 16 is stable and below the Environmental Protection Agency (EPA) Maximum Contaminant Level (MCL). Unfortunately, the nitrate levels in Well No. 16 are near, and sometimes above the EPA MCL. In addition, Well No. 16 produces measurable sediment despite several targeted well-development methods. Finally, Well No. 16 produces silica at a concentration varying between 47 and 52 milligrams per liter. There are no drinking-water standards for silica; however, this could cause concerns for Torrington's reverse-osmosis treatment system at the water treatment plant.

The AVI Consultant Team recommended that Torrington move forward with a WWDC Level III Project to outfit the well, construct a well house, and install piping to tie the well into Torrington's water-supply system. Due to water-quality concerns, the system will need to accommodate some blending. Torrington will need to decide what blending method provides them the most flexibility.

WELL LOCATION MAP:

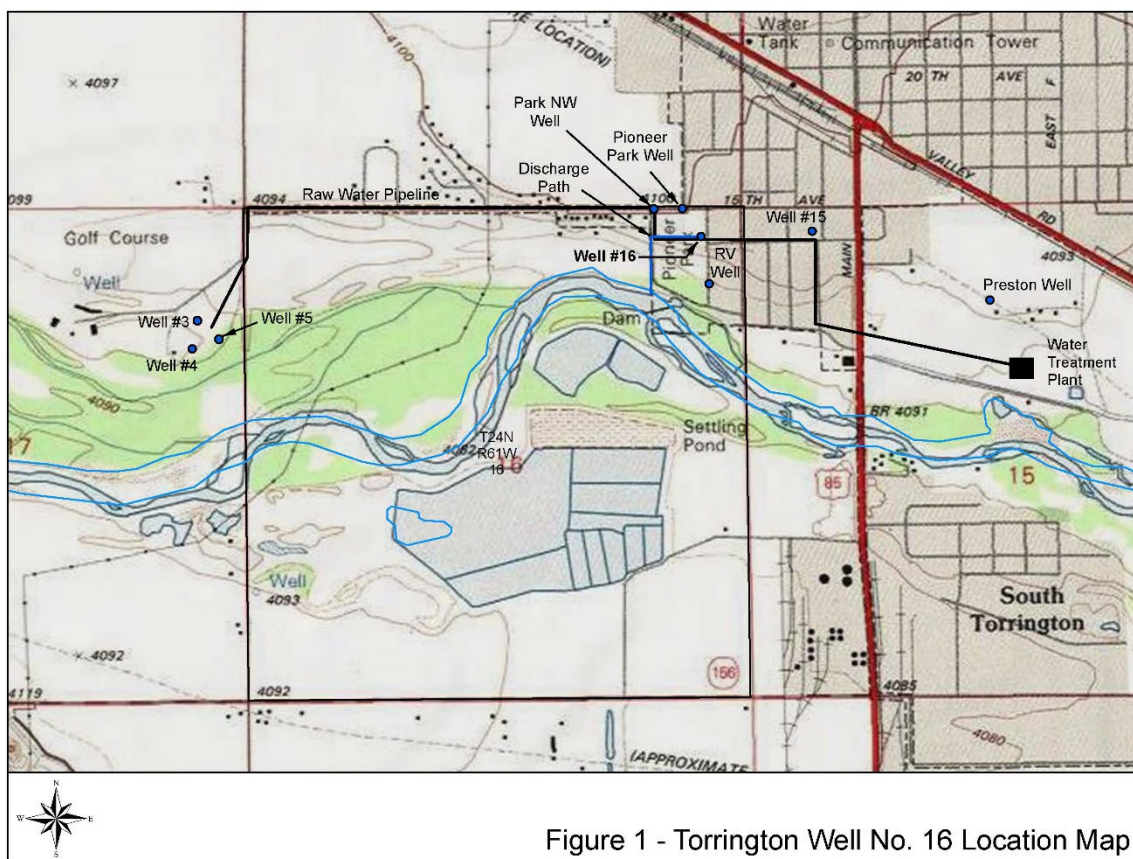
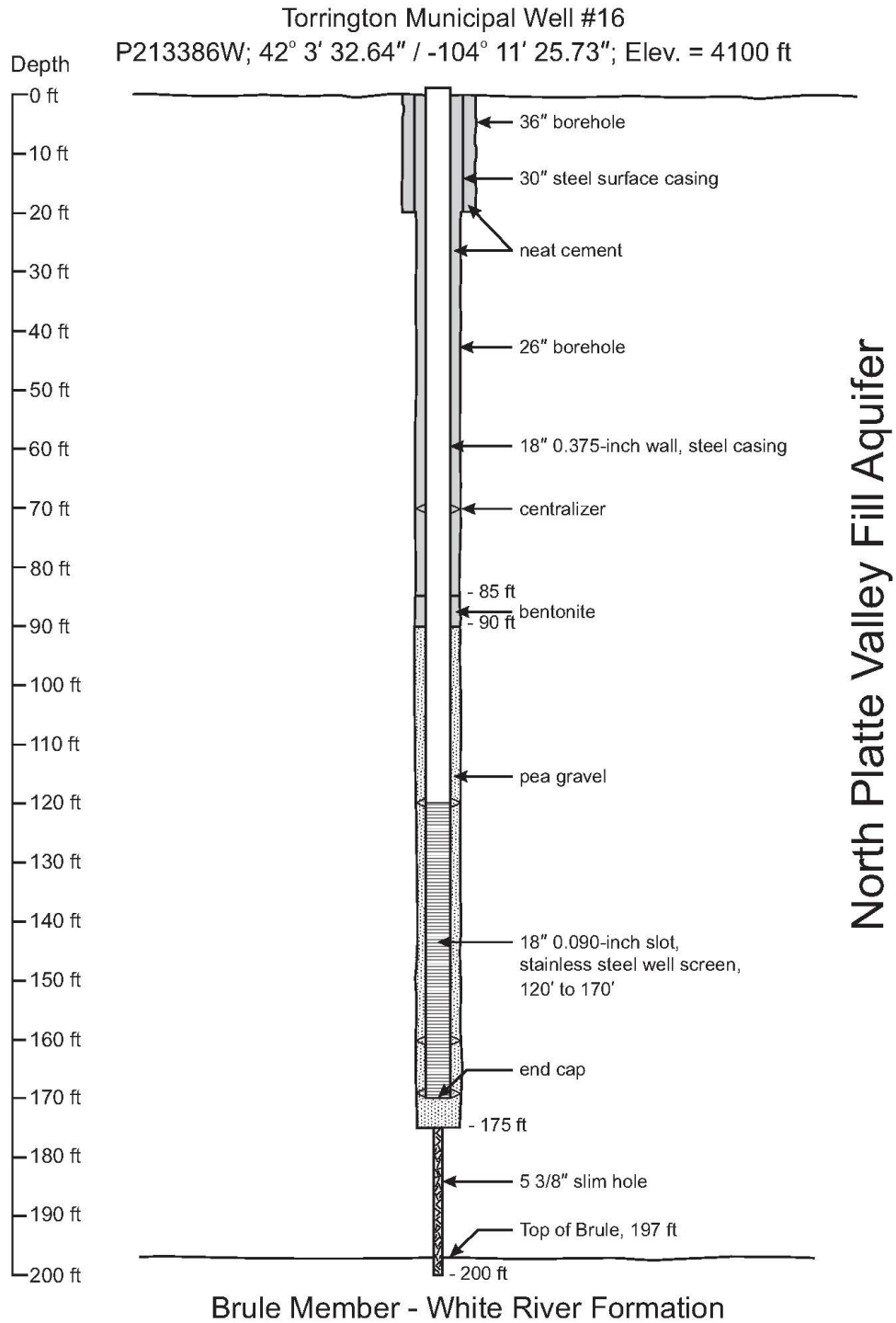


Figure 1 - Torrington Well No. 16 Location Map

AS-BUILT DIAGRAM:



FINAL REPORT ONLINE:

http://library.wrds.uwyo.edu/wwdcrept/Torrington/Torrington-Groundwater_Well_No_16-Final_Report-2021.html

WWDO RECOMMENDATION

The WWDO advises that final completion of the project is achieved and recommends acceptance of final report submittals.

WWDC PROPOSED MOTION:

I move acceptance of the Torrington Groundwater Well #16 Ground Water Exploration Grant project as being complete.



**FINAL PROJECT CLOSEOUT MEMO
FOR LEVEL I AND II PLANNING PROJECTS
WYOMING WATER DEVELOPMENT OFFICE
PLANNING DIVISION**



The Planning Project listed below is complete and scheduled for closeout. This memo serves to summarize the findings of the final report and to document the final contract amount.

PROJECT: Lower Shoshone Watershed Study
LEVEL: I
SPONSOR: Shoshone Conservation District
LOCATION: Big Horn and Park Counties, Wyoming
PROGRAM: New Development
PROJECT MGR: Mike Robertson
WWDC MTG DATE: May 12, 2022

AUTHORIZING LEGISLATION:

<u>Purpose</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Due Date</u>
Level I	150	2020	I	\$231,000	2023

CURRENT CONTRACT:

Consultant

Biota Research and Consulting, Inc.

<u>Contract Number</u>	<u>Executed</u>	<u>Original Contract Amount</u>	<u>Final Contract Amount</u>	<u>Contract Savings Amount</u>	<u>Expiration Date</u>
05SC0298344	4-8-2020	\$ 230,690	\$ 230,690	\$ 0	6-30-22

PROJECT DESCRIPTION:

The Shoshone Conservation District requested funding from the WWDC for the completion of a watershed management plan for the Lower Shoshone River watershed with a primary goal to evaluate ways to reduce problems with high sediment loads in their reservoirs and irrigation diversion and conveyance systems. The Lower Shoshone watershed drains a large portion of the Big Horn Basin in NW Wyoming and encompasses over 400,000 acres in total and approximately 80,000 irrigated acres. The study area is primarily in Big Horn County included the towns of Lovell, Byron, Cowley, Deaver, and Frannie; the main tributaries to the Lower Shoshone River include Big Wash, Coon Creek, Sage Creek, Dry Creek, Whistle Creek, and Crooked Creek.

PROJECT FINDINGS/RECOMMENDATIONS:

The watershed study included a GIS inventory of hydrography, soils, climate, fish and wildlife habitat, and water and energy infrastructure. It also provided an analysis of land use, surface and groundwater availability, rangeland conditions, and water infrastructure. Working with the community and individual landowners, the consultant identified 81 potential water projects, including: irrigation and drainage system improvements and rehabilitation, water storage opportunities, stream channel restoration, and upland livestock/wildlife water projects.

There are eight irrigation districts and water user's associations drawing water from the Lower Shoshone River supplying water to over 53,000 acres of irrigated land through over 630 miles of conveyance. Irrigation

efficiency was reviewed as part of this study and recommendations to reduce high flow losses were to convert open laterals to pipelines, ditch lining, ditch realignment, and other improvements to address evaporation and seepage losses. A total of 47 projects resulted from evaluation of irrigation systems and most fit into the categories of water conveyance efficiency, operational efficiency, reduction in erosion, reducing seepage, and expanding operations.

A detailed geomorphic evaluation of stream-bed stability was conducted through this study the watershed management plan includes recommended stream mitigation measures to address channel incision and erosion within the Shoshone River and its tributaries. Four specific projects were identified that could help contribute to reducing sediment contributions and BMPs (best management practices) were recommended to address issues on a larger scale.

Channel migration of the Shoshone River is common and the report provides an example of this process with historical images of a substantial change in the channel location about 2 miles upstream of the highway 37 bridge between 1994 and 2011. As the channel migrates and erodes new channels over time, the river picks up substantial amounts of sediment that contribute to the persistent problems for irrigation infrastructure. The only option is to account for this natural sediment contribution in designs of infrastructure. One specific structure that was identified as having problems related to the high sediment loads is the Big Fork Diversion which supplies irrigation water to 800 acres and eight constructed wetlands on the Yellowtail WHMA. A detailed conceptual design plan was presented for this diversion to facilitate passing the high sediment loads and reduce maintenance efforts. This design could be modified to work on similar headgates throughout the watershed.

One idea that was suggested during the scoping process was the potential for hydroelectric power generation opportunities. This study evaluated this potential in a few locations but found that conditions were not suitable in any existing locations and the potential to develop a new off channel reservoir that may enable necessary elevation differential were not economically feasible.

Remote analysis identified 511 functional lakes, ponds and stock tanks in the watershed; an additional 81 non-functional features were identified that appeared breached, sediment filled, or in need of a site visit to determine issues. Conceptual plans and cost estimates were prepared for five livestock/wildlife water supply projects that were proposed by landowners, but additional opportunities may exist to improve range and riparian conditions. Comprehensive maps were prepared for the report that identify those areas that have limited water sources; the lower Coon Creek drainage was specifically identified as one that could benefit from additional water sources. The study also evaluated four small reservoir or settling pond projects.

PUBLIC REPORT PRESENTATION HEARING: N

<u>Date</u>	<u>Location</u>	<u>City/Town</u>
2-24-22	Big Horn County Fire Protection District, 314 Nevada Ave	Lovell

FINAL REPORT/EXECUTIVE SUMMARIES ONLINE:

Final Report: http://library.wrds.uwyo.edu/wwdcrept/Shoshone_River/Shoshone_River-Watershed_Study_Level_I-Final_Report-2022.html

Executive Summary: http://library.wrds.uwyo.edu/wwdcrept/Shoshone_River/Shoshone_River-Watershed_Study_Level_I-Executive_Summary-2022.html

WWDO RECOMMENDATION:

Projects described in the Watershed Study are intended to incrementally rehabilitate watershed functions, improving riparian areas, stream stability, rangeland management, fish passage, water quality, and

attenuating flood flows. This Watershed Study provides analysis of watershed conditions, and through the projects identified in the rehabilitation plan, demonstrate how these types of projects provide public benefit.

The Office recommends acceptance of the final report submittals and supporting the funding of the Small Water Program projects on a case by case basis and the continued planning of the conventional projects.

WWDC PROPOSED MOTION:

I move acceptance of the Lower Shoshone Watershed Study, Level I project report as being complete and further, the WWDC makes the following findings relative to this project:

1. That the Commission recommend:
 - Proceeding to the next Level of project development upon the submittal of an appropriate funding application by the sponsor.



**FINAL PROJECT CLOSEOUT MEMO
FOR LEVEL I AND II PLANNING PROJECTS
WYOMING WATER DEVELOPMENT OFFICE
PLANNING DIVISION**



The Planning Project listed below is complete and scheduled for closeout. This memo serves to summarize the findings of the final report and to document the final contract amount.

PROJECT: South End Water Users ISD Transmission
LEVEL: II
SPONSOR: South End Water Users Improvement and Service District (SEWU-ISD)
LOCATION: Cowley, Wyoming
PROGRAM: New Development
PROJECT MGR: Keith Clarey/Chace Tavelli (early)
WWDC MTG DATE: May 12, 2022

AUTHORIZING LEGISLATION:

<u>Purpose</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Due Date</u>
Level II	150	2020	I	\$142,000	2023

CURRENT CONTRACT:

Consultant: Pryor Mountain Engineering, Inc.

<u>Contract Number</u>	<u>Executed</u>	<u>Original Contract Amount</u>	<u>Final Contract Amount</u>	<u>Contract Savings Amount</u>	<u>Expiration Date</u>
05SC0298325	3-30-20	\$141,163.00	\$141,096.94	\$ 66.06	6-30-22

PROJECT DESCRIPTION:

The South End Water Users Improvement and Service District (SEWU-ISD) is a small rural water system located in Big Horn County, Wyoming, adjacent to, and south of, the Town of Cowley. The District formed in 1985 and serves 57 taps and approximately 155 county residents. The District is supplied from the Town of Cowley water system and their artesian Madison #1 well (~2,200-foot, 1983), which is located approximately 6.5 miles northeast of Town. The SEWU system currently operates ~39,100 feet of 6-inch PVC line and ~13,500 feet of 4-inch PVC line.

The Town of Cowley, West End Zone, and Transmission Zone were a part of the 2016 Cowley Master Plan, Level I Study. The Cowley Master Plan did not recommend a Level II feasibility study of the rural area, but included a discussion that the WWDC is a proponent of system regionalization.

The SEWU-ISD submitted a Level II application in 2019 and the Level II study was subsequently funded by the Legislature a 2020 appropriation of \$142,000. The study commenced in April 2020. The final report was submitted electronically in February 2022 and the final contract deliverables/final invoice/affidavit were received in April 2022.

PROJECT FINDINGS/RECOMMENDATIONS:

The following items were recommended for the South End Water Users (SEWU) ISD water system:

- Cost Estimate ~\$2,275,000; Northwest Loop: The top priority is the replacement of the existing West End Bublitz-Hoffman Loop with a new 6-inch PVC pipeline.
- Cost Estimate ~\$3,425,000; Lane 9 Extension; which includes ~\$460,000 for the Road 7 replacement of an under-sized portion: Constructing approximately 6 miles of new 6-inch PVC pipeline for the SEWU Lane 9 Extension to increase West End system capacity.
- Cost Estimate ~\$990,000; Lane 8 Extension: Constructing a new 6-inch PVC pipeline along SEWU Lane 8 and connecting to the Town of Cowley system.
- Cost Estimate ~\$900,000; West End Tie-In: Connecting the groundwater SEWU system to the surface-water supplied, Shoshone Municipal Pipeline (SMP) along Highway 14A to utilize this system as a backup supply to provide water to the Town of Deaver from Lovell or vice-versa.
- Increase the water-level elevation in the Town of Cowley water tank by 10 feet, thereby increasing the water pressure throughout the tank pressure zone.
- Increase the pressure settings on the pressure reducing valve (PRV) at the Cannery Control Building (CCB) from 70/85 psi to 80/95 psi to allow for increased system pressure.
- Follow the Town of Cowley flushing and general maintenance to reduce the ‘old age’ water in parts of the system.

The total of all Level II recommended SEWU-ISD system improvements would be approximately \$7.6 million over time.

PUBLIC REPORT PRESENTATION

HEARING: Y

<u>Date</u>	<u>Location</u>	<u>City/Town</u>
2-3-22	Cowley Town Hall, 20 South Division Street	Cowley

FINAL REPORT/EXECUTIVE SUMMARIES ONLINE:

Final Report: http://library.wrds.uwyo.edu/wwdcrept/Cowley/Cowley-South_End_Water_Users_ISD_Transmission_Feasibility_Study_Level_II-Final_Report-2022.html

Executive Summary: http://library.wrds.uwyo.edu/wwdcrept/Cowley/Cowley-South_End_Water_Users_ISD_Transmission_Feasibility_Study_Level_II-Executive_Summary-2022.html

WWDO RECOMMENDATION:

The SEWU-ISD relies entirely on their system of transmission pipelines to supply water from the Town of Cowley to their district. The WWDO recommends proceeding to the next Level of project development upon submittal of an appropriate funding application by the Sponsor.

WWDC PROPOSED MOTION:

I move acceptance of the South End Water Users Improvement & Service District (SEWU-ISD) Transmission Level II project report as being complete and further, the WWDC makes the following findings relative to this project:

1. That the Commission recommend:
 - Proceeding to Level III of project development upon the submittal of an appropriate funding application by the sponsor.
2. Based on the findings in the final report, the project is determined to be in the public interest.
3. The project functions and services cannot realistically be provided by any person, association or corporation engaged in private enterprise.



THE STATE OF WYOMING
Water Development Office

6920 YELLOWTAIL ROAD TELEPHONE: (307) 777-7626 CHEYENNE, WY 82002



MEMORANDUM

DATE: March 7, 2022
TO: Wyoming Water Development Commission
FROM: Jason Mead, P.E., Dam and Reservoir Division
SUBJECT: Amendment Two to Big Wind River Storage, Level II, Phase II Study

This memo is to serve as an explanation for Amendment Two to the Big Wind River Storage, Level II, Phase II Study. The amendment is with HDR Engineering, Inc. (HDR) and serves to extend the term of the Contract through December 31, 2023.

The WWDO's recommendation to amend HDR's Contract is based on results of the hydrologic modeling and reservoir storage site alternatives analysis. The majority of irrigation shortages are associated with lands within downstream irrigation districts, off the Wind River Indian Reservation. However, the location of the preferred storage alternative is located on the Wind River Indian Reservation. Discussion will need to take place with the Sponsor and potential beneficiaries to determine if there is interest in moving forward with the project, and if so, what agreements would need to be put in place, as well as how the project would potentially be funded.

**AMENDMENT TWO TO
CONSULTANT CONTRACT FOR SERVICES NO. 05SC0296982
BIG WIND RIVER STORAGE, LEVEL II, PHASE II STUDY BETWEEN
WYOMING WATER DEVELOPMENT COMMISSION
AND
HDR ENGINEERING, INC.**

1. **Parties.** This Amendment is made and entered into by and between the Wyoming Water Development Commission [Commission], whose address is: 6920 Yellowtail Road, Cheyenne, Wyoming 82002; and HDR Engineering, Inc. [Consultant], whose address is: 8404 Indian Hills Dr., Omaha, NE 68114.
2. **Purpose of Amendment.** This Amendment shall constitute the second amendment to the Contract between the Commission and the Consultant. The purpose of this Amendment is to extend the term of the Contract through December 31, 2023.

The original Contract, dated June 13, 2017 required the Consultant to render certain technical or professional services for a total Contract amount of four hundred seventy-one thousand, nine hundred thirty-one dollars, and ninety-two cents (\$471,931.92) with an expiration date of June 30, 2020.

Amendment One, dated June 1, 2020, amended the original Contract to extend the term of the Contract through May 31, 2022.

3. **Term of the Amendment.** This Amendment shall commence upon the date the last required signature is affixed hereto (Effective Date), and shall remain in full force and effect through the term of the Contract, as amended, unless terminated at an earlier date pursuant to the provisions of the Contract, or pursuant to federal or state statute, rule or regulation.
4. **Amendments.**
 - A. The second sentence of Section 3 of the original Contract is hereby amended to read as follows:

“The term of this Contract is from June 13, 2017 through December 31, 2023.”

5. **Amended Responsibilities of the Consultant.**

Responsibilities of the Consultant have not changed.

6. **Amended Responsibilities of the Commission.**

Responsibilities of the Commission have not changed.

7. **Special Provisions.**

- A. **Same Terms and Conditions.** With the exception of items explicitly delineated in this Amendment, all terms and conditions of the original Contract, and any previous amendments, between the Commission and the Consultant, including but not limited to sovereign immunity, shall remain unchanged and in full force and effect.
- B. **Counterparts.** This Amendment may be executed in counterparts. Each counterpart, when executed and delivered, shall be deemed an original and all counterparts together shall constitute one and the same Amendment. Delivery by the Consultant of an originally signed counterpart of this Amendment by PDF shall be followed up immediately by delivery of the originally signed counterpart to the Commission.

8. **General Provisions.**

- A. **Entirety of Contract.** The Original Contract, consisting of thirteen (13) pages; Attachment A, Scope of Services, consisting of nineteen (19) pages; Attachment B, consisting of two (2) pages; Attachment C, consisting of three (3) pages; Amendment One, consisting of three (3) pages; and this Amendment Two, consisting of three (3) pages, represent the entire and integrated Contract between the parties and supersede all prior negotiations, representations, and agreements whether written or oral.

THE REMAINDER OF THIS PAGE WAS INTENTIONALLY LEFT BLANK

9. **Signatures.** The parties to this Amendment, through their duly authorized representatives, have executed this Amendment on the dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this Amendment.

This Amendment is not binding on either party until approved by A&I Procurement and the Governor of the State of Wyoming or his designee, if required by Wyo. Stat. § 9-2-1016(b)(iv).

WYOMING WATER DEVELOPMENT COMMISSION:

Mark Kot, Chairman

Date

Liisa Anselmi-Dalton, Secretary

Date

HDR ENGINEERING, INC.:

J. Mike Coleman, PE & LS, Sr. Vice President
Employer Identification Number: 47-0680568

Date

ATTORNEY GENERAL'S OFFICE: APPROVAL AS TO FORM

Megan Pope, Senior Assistant Attorney General

Date



THE STATE OF WYOMING
Water Development Office

6920 YELLOWTAIL ROAD TELEPHONE: (307) 777-7626 CHEYENNE, WY 82002



MEMORANDUM

DATE: March 7, 2022

TO: Wyoming Water Development Commission

FROM: Jason Mead, P.E., Dam and Reservoir Division

SUBJECT: Amendment Two to Little Wind River Storage, Level II, Phase II Study

This memo is to serve as an explanation for Amendment Two to the Little Wind River Storage, Level II, Phase II Study. The amendment is with HDR Engineering, Inc. (HDR) and serves to: a) increase the total Contract dollar amount by one hundred fifty thousand dollars (\$150,000.00) to six hundred twenty-two thousand, six hundred one dollars, and ninety-two cents (\$622,601.92); and b) extend the term of the Contract through December 31, 2023.

Amendment Two to HDR's Contract is a result of the 2022 Little Wind River Storage Study, Phase II recommendation which the Commission and Select Water Committee approved for inclusion in the 2022 Omnibus Water Bill – Planning. To summarize, the Tribes have requested additional funding and time to complete Level II, Phase II field work on the preferred reservoir site. The current Phase II analysis being conducted originally included the following key components:

- Hydrologic Model Refinement
- Alternatives Analysis Refinement
- Geological/Geotechnical Analysis and Site Visits
- Environmental and Aquatic Resources Investigation
- Cultural Resource Analysis
- Economic Analysis Refinement

However, much greater effort than anticipated was put into the hydrologic model refinement, as it is the foundation for the purpose and need for storage. As a result, field work associated with geological/geotechnical analysis, environmental and aquatic resources, and cultural resources had to be postponed until additional funding could be appropriated.

The overarching objective of the Phase II analysis is to continue to develop project knowledge by leveraging past and current work to develop a preferred alternative for recommendation for a Level II, Phase III (permitting and final design) funding request.

**AMENDMENT TWO TO
CONSULTANT CONTRACT FOR SERVICES NO. 05SC0296983
LITTLE WIND RIVER STORAGE, LEVEL II, PHASE II STUDY BETWEEN
WYOMING WATER DEVELOPMENT COMMISSION
AND
HDR ENGINEERING, INC.**

1. **Parties.** This Amendment is made and entered into by and between the Wyoming Water Development Commission [Commission], whose address is: 6920 Yellowtail Road, Cheyenne, Wyoming 82002; and HDR Engineering, Inc. [Consultant], whose address is: 8404 Indian Hills Dr., Omaha, NE 68114.
2. **Purpose of Amendment.** This Amendment shall constitute the second amendment to the Contract between the Commission and the Consultant. The purpose of this Amendment is to: a) increase the total Contract dollar amount by one hundred fifty thousand dollars (\$150,000.00) to six hundred twenty-two thousand, six hundred one dollars, and ninety-two cents (\$622,601.92); and b) extend the term of the Contract through December 31, 2023.

The original Contract, dated June 13, 2017 required the Consultant to render certain technical or professional services for a total Contract amount of four hundred seventy-two thousand, six hundred one dollars, and ninety-two cents (\$472,601.92) with an expiration date of June 30, 2020.

Amendment One, dated June 1, 2020, amended the original Contract to extend the term of the Contract through May 31, 2022.

3. **Term of the Amendment.** This Amendment shall commence upon the date the last required signature is affixed hereto (Effective Date), and shall remain in full force and effect through the term of the Contract, as amended, unless terminated at an earlier date pursuant to the provisions of the Contract, or pursuant to federal or state statute, rule or regulation.
4. **Amendments.**
 - A. The second sentence of Section 4.A. of the original Contract is hereby amended to read as follows:

“The total payment under this Contract shall not exceed six hundred twenty-two thousand, six hundred one dollars, and ninety-two cents (\$622,601.92).”
 - B. Section 4.B. of the original Contract is hereby amended in its entirety to read as follows:

“B. Project Budget. The Project budget for each task included in Attachment A2 is as follows:

<u>Task</u>	<u>Estimated Cost</u>
1. Review of Background Information	\$ 19,934.79
2. Meetings and Project Management	\$ 45,338.38
3. Hydrologic Model Refinement	\$ 176,097.72
4. Environmental Assessment and Permitting	\$ 207,493.53
5. Geotechnical Investigation	\$ 50,285.00
6. Surveying	\$ 27,260.00
7. Conceptual Designs and Cost Estimates	\$ 47,890.00
8. Economic Analyses	\$ 5,500.00
9. Discretionary Task	\$ 10,000.00
10. Public Interest	\$ 1,950.00
11. Creation of a Geographic Information System	\$ 10,672.50
12. Draft Report	\$ 10,040.00
13. Report Presentations	\$ 4,695.00
14. Final Report and Deliverables	\$ 5,445.00
TOTAL PROJECT COST	\$ 622,601.92

The amounts for each task are estimates only, but are not to be exceeded unless authorized in writing by the Commission. The Contract total amount is controlling. Payment shall be made directly to the Consultant. The Consultant shall maintain hourly records of time worked by its personnel to support any audits the state or the Commission may require. Billing reports shall be submitted no more often than monthly for activities and costs accrued since the last billing report and shall be made on forms provided by the Office. The Consultant may use alternate billing forms if approved in advance by the Office project manager. A brief project progress report summarizing project activities in the billing period must be submitted with each billing.”

C. The second sentence of Section 3 of the original Contract is hereby amended to read as follows:

“The term of this Contract is from June 13, 2017 through December 31, 2023.”

5. Amended Responsibilities of the Consultant.

Responsibilities of the Consultant are hereby amended as follows:

A. As of the Effective Date of this Amendment, Attachment A, Scope of Services, which was attached to the original Contract, is superseded and replaced by Attachment A2, Revised Scope of Services, which is attached to this Amendment and incorporated into the original Contract by this reference. All references to

“Attachment A” in the original Contract, and in any amendments thereto, are amended to read: “Attachment A2”. Attachment C, Scope of Services Assumptions, which was attached to the original Contract, is superseded and replaced by Attachment C2, Revised Scope of Services Assumptions, which is attached to this Amendment and incorporated into the original Contract by this reference. All references to “Attachment C” in the original Contract, and in any amendments thereto, are amended to read: “Attachment C2”.

6. Amended Responsibilities of the Commission.

Responsibilities of the Commission have not changed.

7. Special Provisions.

- A. Same Terms and Conditions.** With the exception of items explicitly delineated in this Amendment, all terms and conditions of the original Contract, and any previous amendments, between the Commission and the Consultant, including but not limited to sovereign immunity, shall remain unchanged and in full force and effect.
- B. Counterparts.** This Amendment may be executed in counterparts. Each counterpart, when executed and delivered, shall be deemed an original and all counterparts together shall constitute one and the same Amendment. Delivery by the Consultant of an originally signed counterpart of this Amendment by PDF shall be followed up immediately by delivery of the originally signed counterpart to the Commission.

8. General Provisions.

- A. Entirety of Contract.** The Original Contract, consisting of thirteen (13) pages; Attachment A, Scope of Services, consisting of nineteen (19) pages; Attachment B, consisting of two (2) pages; Attachment C, consisting of three (3) pages; Amendment One, consisting of three (3) pages; Amendment Two, consisting of four (4) pages; Attachment A2, Revised Scope of Services, consisting of seventeen (17) pages; and Attachment C2, Revised Scope of Services Assumptions, consisting of four (4) pages, represent the entire and integrated Contract between the parties and supersede all prior negotiations, representations, and agreements whether written or oral.

THE REMAINDER OF THIS PAGE WAS INTENTIONALLY LEFT BLANK

9. **Signatures.** The parties to this Amendment, through their duly authorized representatives, have executed this Amendment on the dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this Amendment.

This Amendment is not binding on either party until approved by A&I Procurement and the Governor of the State of Wyoming or his designee, if required by Wyo. Stat. § 9-2-1016(b)(iv).

WYOMING WATER DEVELOPMENT COMMISSION:

Mark Kot, Chairman

Date

Liisa Anselmi-Dalton, Secretary

Date

HDR ENGINEERING, INC.:

J. Mike Coleman, PE & LS, Sr. Vice President
Employer Identification Number: 47-0680568

Date

ATTORNEY GENERAL'S OFFICE: APPROVAL AS TO FORM

Megan Pope, Senior Assistant Attorney General

Date

ATTACHMENT A2 REVISED SCOPE OF SERVICES

A. AUTHORIZATION

The Wyoming Legislature has authorized the Commission to conduct the study described herein. The Consultant will complete the tasks and requirements outlined in D. Scope of Services. The Commission, at its sole discretion and through duly authorized contract amendments, may request the Consultant to complete additional work phases beyond the following scope of services.

B. PROJECT DESCRIPTION

1. Location. Little Wind River Basin, Fremont County, Wyoming
2. Purpose. To perform a Level II, Phase II study for the Little Wind River Storage Project.
3. History. The Eastern Shoshone and Northern Arapaho Tribes are requesting continued study of the Big and Little Wind River Storage Projects. Phase I corroborated the need for additional storage in the drainage to help offset seasonal irrigation water shortages. The StateMod hydrologic model created under Phase I also revealed additional water availability with a current day priority water right in the basin under the terms and conditions of the Big Horn Adjudication.

A long list of potential storage sites that have been documented throughout various previous work was screened down to a short list of alternatives that appear to be able to supply supplemental water to offset the documented shortages. Further Phase II analysis is recommended to refine project knowledge.

Additional information may be found at the Wyoming Water Library supported by the Water Resources Data System, located at the University of Wyoming.

C. PROJECT REQUIREMENTS

1. Monthly Progress Reports and Billing Statements

The Consultant shall submit a brief monthly progress report outlining the study status, progress, and results to date, regardless of whether or not a billing statement is submitted, on or before the last working day of the month.

Each billing statement must include a task-by-task report justifying the cost items contained in the billing statement. The monthly progress report may be used as the justification for the billing statement as long as all cost items covered in the billing statement are addressed in the progress report.

2. Computer Models, Statement of Assumptions, Project Work File

a. If the Consultant writes or uses a computer program or spreadsheet as a part of this project, the Consultant shall submit to the Commission for approval all proposed program names and data formats prior to beginning work on that task. All data shall be submitted to the Commission in written and digital forms with the final report. Digital media shall be labeled by the Consultant to provide sufficient detail to access the information on the media. User manuals shall be submitted by the Consultant to the Commission providing complete documentation of computer programs developed under this project. The user manuals shall also contain the source code language and the type of computer equipment necessary to operate the program(s). The computer programs and spreadsheets (written and digital forms) are due on the same date as the final report, which contains the information generated by the programs.

b. To facilitate the Commission's accurate evaluation of the Consultant's work product, computations, conclusions and recommendations, the Consultant shall:

(i) Include in the final report a section describing the assumptions and methodology used by the Consultant in generating the data and conclusions contained in that chapter.

(ii) Maintain a project work file containing the materials used in project analysis. This file will be available for review by the Commission and should be organized in such a way as to allow replication of the steps and procedures used by the Consultant to reach the conclusions described in the study.

(iii) Prepare a project notebook containing a description of the assumptions and methodologies used in the project analysis. The notebook shall be organized in such a way as to allow replication of the steps, calculations, and procedures used by the Consultant to reach conclusions, described in the draft final report. The project notebook shall be submitted with the draft final report.

3. Cost Estimates

The Consultant shall use the following guidelines in calculating project cost estimates.

Preparation of Final Designs and Specifications	\$ _____
Permitting and Mitigation	\$ _____
Legal Fees (Title of Opinion Only)	\$ _____
Acquisition of Access and Rights of Way	\$ _____
Pre-Construction Costs (Subtotal # 1)	\$ _____

Cost of Project Components	\$ _____
	\$ _____
	\$ _____
Total Component Cost (Subtotal #2)	\$ _____
Construction Engineering Cost (Subtotal #2 x 10%)	\$ _____
Components and Engineering Costs (Subtotal #3)	\$ _____
Contingency (Subtotal #3 x 15%)	\$ _____
Construction Cost Total (Subtotal #4)	\$ _____
Total Project Cost (Subtotal #1 + Subtotal #4)	\$ _____

Note: Any inflation costs, as determined by the consultant and Office project manager, will be applied to the Total Project Cost.

4. Final Report

The Consultant shall use the Contract Scope of Services as the outline for draft and final reports so that Consultant compliance with Contract provisions can be verified. If the final report contains information of an engineering nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by a Professional Engineer licensed in the State of Wyoming. If the final report contains information of a geologic nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by a Professional Geologist licensed in the State of Wyoming. If the final report contains information of both an engineering and geologic nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by both a Professional Engineer and a Professional Geologist licensed in the State of Wyoming.

5. Final Report - Digital Format

In addition to the paper submittal described in Section C.4 above, the Consultant shall also provide the final documents and related materials in a digital format. This digital report shall be contained on CD/DVD(s), and shall be in Searchable Image Adobe Acrobat format.

6. Anticipated Project Funding Assistance

The Consultant shall clearly identify project components eligible for Commission funding, both in cost estimates and in project mapping. The Consultant shall verify project component funding eligibility with the Office project manager prior to commencing any economic analysis. Unless otherwise directed by the Office project manager, the Consultant shall assume that projects will be funded with a sixty-seven percent (67%) grant and a thirty-three percent (33%) loan. The Commission loan will be financed at an interest rate of four percent (4%) with a term to be specified by the Office project manager. If funding is anticipated from another agency, such as the Office of State Lands and Investments or the Rural Utilities Service (RUS), the Consultant shall prepare cost

estimates for system components not eligible for Commission assistance in a format and level of detail acceptable to the potential funding agency.

If required in the Contract Scope of Services, the Consultant shall provide the information necessary to complete applications to RUS, the Office of State Lands and Investments, and any other identified funding sources.

7. Project Access

The Consultant shall be responsible for obtaining access as required for project tasks.

8. Stand-By Time

The Commission will not reimburse the Consultant for stand-by time charges for the Consultant's supervisory personnel.

9. Well Permitting

All wells developed under this program shall list the State of Wyoming, Water Development Office as the permittee. The Consultant shall be responsible for obtaining the permit.

10. Verification Log

After all casing has been installed in the well, the Office may require that a geophysical log be performed on the well to verify casing placement. A copy of this log shall be included in the final report.

D. SCOPE OF SERVICES

The Consultant will complete the following set of tasks for the Little Wind River Storage, Level II, Phase II Study:

Task 1. Review of Background Information

The Consultant shall gather and review any existing background information related to storage studies and the enlargement of existing reservoirs, hydrologic modeling, environmental conditions, cultural resources, geology, and other relevant subject matter available through and provided by the Office, Water Resources Data System, the United States Department of the Interior, Bureau of Indian Affairs, or any other agency with jurisdiction that may affect the construction of a project. Of particular importance is the review of the following literature available through the Wyoming Water Development Office: (1) the Little Wind River Drainage Level II, Phase I Storage Feasibility Study by Tetra Tech, Inc., December 2016; (2) the "Ray Lake Enlargement – Level II Study" by Gannett Fleming, July 2005; (3) the "Upper Wind River Storage Project – Level 1 Study"

by SEH, November 2001; (4) the “Riverton East Irrigation Project” by Nelson Engineering, November 2001; and (5) the “Wind/Big Horn Basin Plan Update,” by MWH Americas Inc, May 2010.

There has been a significant amount of work completed on water storage in the Wind River Basin, and it is the Consultant’s responsibility to review this, and any other applicable material, to ensure that no duplication of effort occurs. Review of background information should be completed prior to any meetings being held.

Upon the completion of the review of background information, the Consultant shall budget for one (1) meeting with the Office project manager and Sponsor to present recommendations as to the direction of the Phase II scope of work and preferred storage site alternative with particular emphasis placed on the review of the StateMod modeling and Alternatives Analysis completed under the Phase I analysis. This shall take place at the onset of the Phase II Contract.

Task 2. Meetings and Project Management

Project meetings shall be conducted as approved by the Office project manager for the coordination of project activities and for keeping the Sponsor informed of project progress. Informal project meetings with the Office project manager and Sponsor may be necessary during the course of the study to provide project direction. In addition, project progress meetings will be conducted monthly by teleconference with the Sponsor and Office.

The Consultant should assume a minimum of two (2) formal public project meetings in the study area with the Sponsor and local stakeholders. The Consultant shall be responsible for setting and conducting these meetings in coordination with the Office project manager and the Sponsor. The Consultant shall prepare all notices and needed materials for the meetings. The Consultant shall prepare meeting minutes for all meetings. In the interest of economy, meetings shall be scheduled to coincide with fieldwork, if possible.

No meeting shall be conducted without approval in advance by the Office project manager.

Should additional meetings be required, these meetings, schedule, agenda and additional costs will be approved by the Office project manager prior to conducting said meetings.

Project management activities include administrative project set-up, subcontractor management, project tracking, invoicing, and project closeout. Written progress reports shall be developed and submitted monthly.

Task 3. Hydrologic Model Refinement

StateMod Model

If after completing Task 1, it is determined the StateMod model, developed during Phase I of the Little Wind River Storage, Level II Study (Phase I), requires additional modification to reflect hydrology, water management, and regulation in the basin and/or the complexities of the Big Horn River Adjudication, the Consultant shall coordinate with the Office project manager and Sponsor to complete such modifications.

Once the effectiveness of the model is validated, the Consultant shall continue to collect and incorporate available streamflow data, diversion records, reservoir data, and climate data into the StateMod model with the purpose of further refining water availability and needs estimates. Input data and model runs incorporating new reservoir operations shall be refined based on updated designs and information to determine the ability of the preferred alternative to address shortages. To develop reasonable assumptions, historical records and previous studies will be consulted and local experts will be interviewed. The Consultant shall budget for two (2) meetings with the Office to review assumptions pertaining to irrigation parameters and hydrologic system demands and should corroborate the analysis with the pertinent State Engineer's Office representative(s). The assumptions must be approved by the Office project manager. Complete documentation shall be developed for all work performed.

It is anticipated that the previously developed StateMod model results will need to be summarized at various locations within the watershed to quantify streamflow changes to aid in evaluating impacts to the aquatic resources as presented in Task 4. The StateMod model will be revised to include the proposed preferred reservoir alternative and other operational constraints identified during discussions with the Sponsor and regulatory agencies. The Consultant shall develop a draft operating plan for the reservoir reflecting considerations and constraints developed as part of this task.

The Consultant shall prepare a hydrologic analysis memorandum suitable for inclusion as an appendix in the final report. The memorandum shall summarize the findings from this task and all models and accompanying data shall be packaged and delivered with the final report.

The Consultant shall coordinate with the Office project manager and the consultant conducting the Big Wind River Storage, Level II, Phase II study on any modifications and/or recommendations to the existing StateMod model.

All proposed work and expenditures of funds under this task must be reviewed and approved by the Office project manager prior to initiating the effort.

Task 4. Environmental Assessment and Permitting

The Consultant shall review and refine requirements of applicable state and federal permits and clearances necessary to construct the top candidate reservoir site as identified during Phase I and verified in this Phase II work or as potentially modified by this Phase II work. Permits and clearances shall include, but not be limited to, those that fall within the

jurisdiction of the Clean Water Act, Endangered Species Act, Historic Preservation Act, 1964 Wilderness Act, the Fish and Wildlife Coordination Act, the Wyoming State Engineer's Office, the Wyoming Department of Environmental Quality, the US Forest Service, the State Lands and Investments Board, the Bureau of Indian Affairs, the Tribal Historic Preservation Office, United States Fish and Wildlife Service, and the Bureau of Land Management or any other agency with jurisdiction that may affect the construction of a project. Work shall include providing timelines and levels of effort.

The Consultant shall coordinate as necessary with permitting agencies to complete the task. Environmental and cultural field surveys include resource inventories, habitat assessment, and the inclusion of THPOs involvement as described in the following subtasks as outlined herein.

Meetings

The Consultant project manager and one additional project team member will attend up to six (6) meetings to discuss permitting related issues with the Bureau of Indian Affairs (BIA), Tribal Historic Preservation Office (THPO), Wyoming Game and Fish Department (WGFD), United States Fish and Wildlife Service (USFWS), United States Army Corps of Engineers (USACE), or others as requested by the Office project manager. The purpose of these meetings is to corroborate analysis and any assumptions developed through the progression of this project. As part of this coordination effort, the Consultant shall prepare for a wetlands and aquatic resources delineation and a functional assessment of the wetlands by scheduling a work plan review meeting with the USACE Cheyenne, WY office to identify specific data to be collected during the site visit and review the survey plan. The Consultant shall incorporate revisions to the survey plan as mutually agreed to between the Consultant, the Office project manager, and the USACE. When the work for this subtask is substantially complete, the Consultant shall schedule a follow up meeting with the USACE to discuss the results and obtain input.

Aquatic Resources Inventory/Functional Assessment

A field aquatic resources inventory will be completed to confirm the presence and boundaries of wetlands and other waters of the U.S (OWUS) within the study area. A field analysis building on the results of the desktop screening and initial site visits will be performed for the preferred reservoir site location. Potential preliminary mitigation site identification is also included within the task.

The following items are included with the preparation of the Aquatic Resources Inventory report:

- Field Visit. Aquatic resources inventory will be conducted utilizing the US Army Corps of Engineers (USACE) current methodology in order to determine wetlands and OWUS boundaries within the designated study area. The study area will also be reviewed for potential habitat for threatened or endangered species. The survey area will consist of the proposed reservoir inundation area, proposed dam footprint,

and a 50-foot buffer around those areas. The Consultant will complete a functional assessment of the wetlands delineated using the Montana Wetland Assessment Method (2008) and summarize the results within the Aquatic Resources Inventory Report.

- Aquatic Resources Inventory Report. The delineation report will consist of a narrative discussing the Aquatic Resources Inventory methodology and information regarding the findings of the field investigation. Figures will be developed that utilize the electronic file of the wetland area boundaries collected in the field. An Aquatic Resource Inventory (ARI) report will be prepared to document field findings with the intent of submitting it to the USACE for a preliminary jurisdictional determination and feedback. The ARI will include descriptions of any wetland or aquatic resources identified within the survey area, wetland data sheets, photographs, and feature positions plotted on aerial backgrounds, as described in the U.S. Army Corps of Engineers Wyoming Regulatory Office Documentation for an Aquatic Resources Inventory and personal coordination with the Wyoming Regulatory Office.
- Mitigation Site Assessment. The desktop analysis will be conducted prior to field investigation for potential mitigation areas. Potential mitigation sites will be selected to meet the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (40 CFR Part 230). Desktop analyses will include, but not be limited to, desktop review of the project area, examining existing data from the U.S. Geological Survey topographic quadrangle maps, the National Wetlands Inventory (NWI) dataset, the National Hydrography Dataset (NHD), color infrared imagery, and historic and current aerial photographs of the project area. Up to three mitigation sites will be evaluated during the field effort to complete a windshield field review to confirm wetlands are not already present, to verify the potential size of individual sites, and to confirm the ecological conditions are such that a properly designed and constructed wetland mitigation site could be supported. A Mitigation Site Feasibility Memorandum will be completed, that will compare each of the potential mitigation site locations.

Cultural and Paleontological Resources

The Consultant, in partnership with the Eastern Shoshone Tribal Historic Preservation Office (THPO) and the Northern Arapaho THPO, will conduct a Class III cultural resource survey of the project area in support of the requirements of Section 106 and the 36 Code of Federal Regulations § 800.5(b) of the National Historic Preservation Act. Background research will be completed to identify previously recorded sites and previous cultural resource surveys within one mile of the project Area of Potential Effect (APE). Site file review will be requested through the THPOs and the Wyoming State Historic Preservation Office (SHPO) WyoTrack database. Additional research will include a review of General Land Office (GLO) records, county records, and historical maps. Prior to field work, a workplan will be completed and submitted to each THPO. The Consultant and two

archaeological technicians, one from the Northern Arapahoe and one from the Eastern Shoshone tribes will complete a Class III survey of the proposed APE. Cultural resources older than 50 years within the surveyed areas will be recorded according to the currently accepted standards of the anticipated lead federal agency and the State of Wyoming. The Consultant will complete the Class III survey results report and Wyoming Cultural Properties Forms.

Aquatic Habitat Assessment

The Consultant shall evaluate the general condition and quality of the aquatic instream habitat while in the field conducting other surveys. The focus of this effort will be to identify aquatic biological resources and fisheries within the defined study area. This will include the reservoir site and stream segments downstream from the reservoir. Biological resources will be reviewed including vegetative and benthic communities, hydrologic regime, species presence, geomorphology, and other characteristics that will help describe existing conditions and qualify potential impacts from the preferred alternative. Potential impacts to the aquatic biological resources will be described based on the literature review, site visit, and discussions with agency specialist.

Terrestrial Habitat Assessment

The Consultant will complete a field review of habitat for terrestrial species. A Technical memorandum will be prepared to document the overall habitat assessment. The field effort will occur concurrently with Aquatic Resources Inventory and no species specific surveys are included in this task.

Wyoming Stream Quantification Tool

The Consultant will complete a Rapid Assessment of the preferred reservoir site in accordance with the Wyoming Stream Quantification Tool (WSQT).

Dam Hazard Classification

The Consultant shall determine the potential hazard classification of the preferred alternative. The Consultant shall identify potential hydrologic consequences downstream and seek council from the Wyoming State Engineer's Office to make the determination.

Purpose and Need

Based on information gathered in other tasks within this study, and the previous work conducted, the Consultant shall draft a "purpose and need" statement written from the State of Wyoming and the beneficiaries' perspective. The Consultant shall also identify any secondary benefits that would mitigate adverse impacts. This shall include, but not be limited to, recreation, flood control, and wildlife and fisheries habitat enhancement.

No work will be initiated or funds spent for this task without prior written authorization from the Office project manager.

Task 5. Geotechnical Investigation

The primary objectives of the geotechnical reconnaissance are to: 1) supplement existing archival information to support layout and preliminary analyses of the proposed reservoir alternative; and 2) identify any potential fatal flaw or challenging geologic or geotechnical conditions that may significantly impact the technical feasibility and/or construction cost of the proposed reservoir alternative.

This task consists of the following subtasks described in detail. The Consultant shall be responsible for obtaining any permits necessary to carry out the geotechnical reconnaissance task.

Data Review

The Consultant shall review the site geology using data produced by previous Commission studies, as well as published USGS information to gain an understanding of the regional geology and the potential site conditions. Potential borrow sources will be identified for field confirmation. The location of significant faults throughout the general area shall be determined and evaluated for activity and dam design impacts. The seismicity of the site will also be evaluated utilizing available USGS on-line data and tools. The seismicity evaluation will be for general knowledge only at this phase and will not constitute a design standard. The Consultant assumes that two days are required to gather and evaluate existing geologic and seismic information.

Geologic Mapping

Geologic mapping will, at a minimum, include the area that encompasses the dam foundation, spillway, and limits of the reservoir as well as other major project features such as access routes. The geologic field mapping will consist of site reconnaissance and data collection performed by a field team of geologists. The goals of the mapping will be to characterize the foundation bedrock, identify potential hazards that would present fatal flaws to the project or create design challenges, characterize and identify the geologic formations throughout the reservoir for the potential of fossil bearing formations that would require further study, and identify potential borrow sources for construction materials. Bedrock descriptions and bedding orientations using a Brunton compass will be gathered where safely accessible by foot and located using handheld GPS. Field strength evaluations will be made using a Schmidt Rebound Hammer to identify the bedrock strength where accessible. Hand samples will be collected for laboratory testing that could include any or all of the following tests:

- Point Load Testing (ASTM D5731)
- Petrographic Analysis (ASTM C295)

- Calcium Carbonate Content (ASTM D4371)
- X-ray Diffraction

Samples will be collected in the field and transported to a geotechnical lab for testing. The site reconnaissance effort and data gathering will be limited to bedrock outcrops that are visible at the surface and able to be safely accessed. This may limit the amount of information that can be gathered at this stage.

Geotechnical Data Reporting

A Geotechnical Data Memorandum will be prepared that summarizes the results of the data review, survey data and field mapping effort as well as the laboratory testing results. The potential impacts the geologic setting has on the design of the dam and recommendations for future investigations will be included as well as a preliminary borrow source evaluation. The report will be compiled by the field team and reviewed by a senior geologist that is familiar with the regional geology. The Consultant assumes that results of laboratory testing will be completed not less than 8 weeks after submitting the samples to the laboratory and will submit the draft report to the Office project manager for review and comments after the results of the laboratory testing can be included.

Dam Type Alternatives Analysis

The consultant will evaluate the potential for various dam types to meet the reservoir height requirements identified as part of this task. Several preliminary design assumptions will need to be made based on dam design experience and the known site conditions in order to evaluate the feasibility of various dam types. The Consultant will assemble a team of dam design professionals with considerable experience to develop the configuration and potential cost impacts of several potential dam types for comparison. A multi-attribute pairwise comparison of dam types for the selected site will be performed and a recommendation will be made to the Office project manager for feedback and approval before moving on to following tasks. If a dam type is not selected prior to conceptual design tasks then the effort will be increased by creating designs of multiple dam types.

No work will be initiated or funds spent for this task without prior written authorization from the Office project manager.

Task 6. Surveying

The consultant will complete a drone survey of the site that will provide LiDAR topographic data as well as high resolution imagery of the dam site and reservoir. This will aid in the development of a topographic survey of the preferred reservoir alternative site, including all potential project features, to support the development of the conceptual design and cost estimates. The survey will be of the accuracy to produce 1 foot contours. A scalable topographic map will be prepared, along with an electronic version prepared in AutoCAD showing all features.

No work will be initiated or funds spent for this task without prior written authorization from the Office project manager.

Task 7. Conceptual Designs and Cost Estimates

For the preferred alternative, the Consultant shall complete the following analysis and actions using new information to build upon and refine Phase I data as appropriate.

The Probable Maximum Precipitation (PMP) and corresponding Probable Maximum Flood (PMF) will be developed to determine conceptual spillway layouts for the preferred alternative.

PMP/PMF

A flood hydrology study for the watershed will be performed in accordance with current Wyoming Dam Safety and/or Bureau of Indian Affairs guidelines as deemed appropriate. The flood hydrology shall be developed using the USACE computer program HEC-HMS, version 4.1 or newer. The Consultant shall coordinate with the Office project manager and the State Engineer's Office Safety of Dams Division to incorporate the utilization of the State of Wyoming PMP Evaluation GIS Tool to develop the PMP analysis or other as deemed appropriate by the permitting agency. The basin wide infiltration rates and unit hydrograph will be developed using the methodologies presented in the Flood Hydrology Manual (Cudworth). A technical memorandum will be developed to summarize the development of the PMP and corresponding PMF.

Structural Analyses

A static stability analysis will be performed using two-dimensional limit-equilibrium procedures on the maximum section of the proposed configuration. The steady state (normal maximum pool) loading condition and the rapid drawdown loading condition will be analyzed.

Geotechnical Analyses

If the preferred dam type from Task 5 is an embankment dam then available data will be reviewed to determine the liquefaction potential at the preferred reservoir alternative site.

Conceptual Design Drawings

Conceptual design drawings will be prepared to aid in the evaluation of project feasibility at the preferred reservoir location. The conceptual design drawings shall include development of all anticipated project components including, but not limited to, existing site conditions, a plan view, section and details for the main dam embankment, dike and spillway, wetland mitigation plans from Task 4, and construction details (e.g. – limits of construction, staging areas, etc.). Additional design drawings may include details related

to foundation treatment or modifications to the outlet works on an existing facility. A draft set of conceptual design drawings will be provided to the Office project manager for review and comment prior to inclusion in the draft report. A final set of conceptual design drawings will be delivered with the final report.

The Consultant shall develop a draft of the construction sequencing and activities necessary to complete the preferred reservoir alternative (Gantt Chart) for the Office project manager to review which will later be refined and delivered with the final report.

Construction Cost Estimate

The Consultant shall revise preliminary construction cost estimates prepared during Phase I and life cycle cost analyses based on the conceptual design drawings for the preferred alternative. This task will involve calculating material quantities and estimating equipment, material, and labor costs for the proposed construction and preparing an engineer's Opinion of Probable Project Costs (OPPC) based on local material supplier price data, data from R.S. Means' Heavy Construction Cost Data, other industry standard sources, and price data developed by the Consultant for previous final design/construction projects.

The Consultant shall prepare an itemized project budget that includes costs for design engineering, permitting, mitigation, land acquisition, legal, access, right of ways, construction, construction engineering, operation, maintenance and replacement, and a financing plan. In addition, the Consultant shall estimate costs for water management during and after construction. The estimate will include unit and lump sum prices of the required construction items. The cost estimate will include estimated overhead, profit, taxes, and fees for cost allowances.

The Consultant shall prepare the OPPC in tabular form. The table will be broken down into both Commission eligible and non-eligible costs. Cost estimates for each infrastructure improvement will be prepared as outlined in Attachment "A" Scope of Services, Subsection C. 3. of the original Contract.

The OPPC should be based on the year when this work is performed. The Consultant will work with the Office project manager to select an appropriate inflation factor that will be applied to the project's current year total cost and projected into the future per the schedule of activities and time-lines developed herein.

Task 8. Economic Analyses

The Consultant shall prepare an economic analysis of the costs and benefits of the preferred reservoir alternative site using new information to build upon and refine Phase I data as appropriate. The purpose of this analysis is to assist in determining a fair and equitable financing plan for the preferred reservoir alternative and provide information on the beneficiaries' ability to pay for a portion of the project and all of the operation,

maintenance, and replacement costs. The analysis should include an estimate of direct and indirect benefits which can be used to justify a recommended increased level of State funding assistance. The Consultant shall work with the beneficiaries to determine anticipated system revenues and expenses that will accrue once the project is constructed. The Consultant shall generate recommendations relative to the annual financial commitments that the beneficiaries could make to retire the construction debt and make the project financially self-supporting.

The Consultant shall also consider any potential alternative funding sources available to the area.

Task 9. Discretionary Task

The Consultant will place \$10,000.00 of the project budget in this discretionary task. The task is to allow changes in the scope as the project develops or as new issues are discovered.

No work will be initiated or funds spent for this task without prior written authorization from the Office project manager.

Task 10. Public Interest

The Consultant shall evaluate whether the project is in the public interest stipulating if the proposed project functions and services can be served by any person, association, or corporation engaged in private enterprise. The Consultant shall also determine if private enterprise has refused to provide the functions and services identified as being required by the proposed project. This information shall be included in the draft and final reports for the project.

Task 11. Creation of a Geographic Information System

The Consultant shall complete the following tasks for any GIS created as part of the project.

- a. **DATA PLAN.** The Consultant will create a GIS using certain specified data collected during this study. A plan will be developed for the GIS system which will include but may not be limited to data collection methods, features mapped, attributes collected, projections, documentation, and software version. Metadata shall be included in the plan consistent with the standards set by the Bear River Data Model Steering Committee. **No work shall proceed until this plan is approved in writing by the Office project manager.**
- b. **FEATURE MAPPING.** The Consultant will request a data template for feature mapping from the Office project manager prior to any GIS work. As a minimum, this data will include location of system components, information related to those components, digital photographs, and other pertinent information. Mapped features will be attributed according to attribution standards developed through the Bear

River Data Model Steering Committee. Digital photos collected in the field will be hyperlinked to the mapped features. The Consultant shall use the most recent/or accurate USGS topographic maps, DOQQs, and/or aerial photos for data creation or backgrounds as discussed with the Office project manager in the data plan. Project GIS deliverables shall be organized in such a way as to allow easy replication of the maps in the final project report.

- c. **FORMATS and STANDARDS.** The Consultant will provide GIS vector data in an ESRI geodatabase or as shapefiles. GIS data shall be saved in the Decimal Degree Coordinate system with a NAD83 datum and stored in feet for all mapped features. Project GIS deliverables may also include linked non-spatial data/databases (.accdb, .xlsx), rasters (various formats), photographs (.jpg), maps (.pdf), and file integrated metadata references (.xml, .txt). As a minimum, collection of geographic information should be accomplished utilizing a portable GPS unit capable of containing a “data dictionary” with post processing to sub-meter accuracy. Attributes collected in support of the project shall be described in the metadata. Data shall be delivered within the Office geodata template if provided by the Office project manager.
- d. **PROJECT AREA.** Included in the GIS deliverables shall be a single shapefile with the project area boundaries. Metadata, projection, datum, and general attribute data related to the project area boundaries should be included as ancillary files.

Task 12. Draft Report

The Consultant shall submit to the Office up to five (5) hard copies of a draft report describing the results of all work completed in this study no later than March 1, 2023. Five (5) CD/DVD copies containing the draft report in a Searchable Image Adobe Acrobat (pdf) format will also be provided, and two (2) CD/DVD copies of the draft ArcGIS coverages (if applicable). The digital report will be completely assembled into one standalone Acrobat file and will be the same version as the hard copy.

The project Sponsor shall be provided a copy of this draft report for their review. The Office project manager shall also provide the Water Resources Data System (WRDS) with both a hard copy and PDF copy of the draft report for comparison purposes. Issues discovered by WRDS during this comparison are the responsibility of the Consultant to correct. Upon completion of the rectification process, WRDS will assign an URL for the online posting of the final report.

Task 13. Report Presentations

Upon completion of the draft report, the Consultant shall present the findings of the study at a public meeting near the project area. Information and materials to be presented at the public meeting shall be developed by the Consultant after consultation with the Office project manager. The Consultant shall be responsible for developing a record of the

meeting which shall become an appendix in the final report. The record will include: any formal and/or informal notices; an affidavit of publication from the legal notice (public hearings only); any materials presented or handed out at the meeting; a record of attendance; any written comments, statements, or exhibits received; recorded testimony, or a memorandum summarizing the views and comments presented at the meeting; and any other pertinent data. The Consultant will also budget for a meeting in Casper or Cheyenne to present the results to the Commission. These presentations are independent of the meetings included under Task 2.

The Consultant shall coordinate with the Office project manager in planning for the presentations to ensure adherence to Office established policies and guidelines.

The report presentation for this Phase II Study shall also serve as a public hearing with WWDC Office personnel serving as the hearing officer. The script for the hearing will be developed by the Office project manager and shall include the question as to whether there is a private entity interested in providing the proposed project functions and services in lieu of the sponsor. The Office is responsible for publishing a legal notice of the meeting in a statewide newspaper once each week for three (3) weeks prior to the hearing and in the local publication up to three (3) times prior to the hearing.

Task 14. Final Report and Deliverables

After receipt and incorporation of the Office and the Sponsor's review comments, the Consultant shall submit all final documents and materials to the Office on or before July 1, 2023. These final documents and materials shall include: 1) Twelve (12) [MIN] hard copies of the final report and 2) Twelve (12) [MIN] hard copies of the executive summary. The summary shall outline the purpose, findings, recommendations, and configuration of the project and shall include detailed cost estimates. The summary should not exceed ten (10) pages. Any final reports which have been submitted in three-ring notebook format shall have spine labels clearly identifying the project, Consultant, and date.

Four (4) [MIN] CD/DVD copies containing the final report and executive summary in a Searchable Image Adobe Acrobat (pdf) format will be provided. The digital report will be completely assembled into one standalone Acrobat file for each report, and will be the same version as the hard copy.

Five (5) [MIN] CD/DVD copies containing the final report and executive summary in their original formats (Word, Excel, etc.), and Searchable Image Adobe Acrobat (pdf) format will be provided. The Acrobat version will be completely assembled and contained in one pdf file. These files will be the same version as the hard copies.

Five (5) [MIN] CD/DVD/Flash Drive/Portable Hard Drive copies of the hydrologic/hydraulic model project files, and all associated files, shall be provided if applicable. The files shall create a working model that is fully functional and can be modified. One of these copies will be included in the project notebook.

Five (5) [MIN] CD/DVD/Flash Drive/Portable Hard Drive copies of the Arcview GIS project file, and all associated files, will be provided. The GIS project files should be provided as ESRI ArcGIS .mxd files saved with relative path names to data sources, and shapefiles shall be saved in the decimal degree coordinate system with a NAD83 datum, and stored in feet, for all mapped features.

One (1) project notebook containing the working files used in this project will be provided. The project notebook files shall include descriptions of the assumptions and methodologies used in the project analysis. The notebook shall be organized in such a way as to allow replication of the steps, calculations, and procedures used by the Consultant to reach the conclusions described in the final report. The preferred format for the project notebook is digital. Any project notebooks which have been submitted in three-ring notebook format shall have spine labels clearly identifying the project, consultant, and date.

ATTACHMENT C2 REVISED SCOPE OF SERVICES ASSUMPTIONS

Task 1. Review of Background Information

- The Data Review meeting is to be conducted in Cheyenne, Wyoming and attended by the Consultant's Project Manager, Assistant Project Manager, StateMOD task lead, and one additional team member.

Task 3. Hydrologic Model Refinement

- All files developed for the Phase I model including the Project Notebook will be provided. This data includes:
 - The Hydrobase Database and all files used to develop the data incorporated in the Hydrobase database – Including files of raw data (streamflows, diversions, and reservoir end-of-month contents, etc.) and synthesized data. All documentation (memos, etc.) of approaches that were used to fill missing data or model specific structures or operations in the basin including literature, meeting notes, etc. used to support development of model input.
 - StateMod input files developed under Phase I for all modeled scenarios and a full model data set including all command files (StateDMI and TSTool) and time series files.
 - StateCU files used to generate the irrigation demands for the Current Demand and Total Water Righted Acreage Scenarios.
 - GIS Coverages and associated databases – All the coverages used to assign acreages to ditch systems and water rights including:
 - Ditches and their service areas
 - Irrigated Acreage
 - Background aerial photos and other base maps

Task 4. Environmental Assessment and Permitting

Meetings

- For each agency meeting, the Consultant shall prepare an agenda that will be sent to the meeting participants prior to the meeting, and a summary of the meeting focusing on key discussion topics and action items will be provided following the meeting.
- Agency meetings will be documented through agendas, attendance logs and meeting notes to provide a record of the agency interface process conducted to help determine the preferred alternative.

Aquatic Resources Inventory/Functional Assessment

- Aquatic Resources Inventory would be completed by two (2) Environmental Scientists during the growing season (typically May – September), over a total of 6 days, dependent on weather. Assumes no more than 250 acres total.
- Aquatic Resources Inventory and mitigation site assessment will be completed for the preferred alternative only. One mobilization will be required for the wetland delineations.
- Right-of-entry to all survey areas will be acquired prior to the start of fieldwork.
- Species specific surveys are not included in this scope of work. Communication with the WGFD and literature review will preliminarily inform probability of species presence.
- The study area will be defined and agreed upon by the Tribes, WWDO, and the USACE.
- GIS based map(s) cross-referenced to narratives describing the prescribed treatments within the three potential mitigation sites will be sufficient for site selection.
- Mitigation Site Feasibility Memorandum will include: landowner considerations, ROW needs, construction effort, access, proposed hydrology source, and general cost estimates. Mitigation design would be completed in a future task after the mitigation needs are identified and a preferred site has been chosen.

Cultural and Paleontological Resources

- The survey area for the project will be no more than 350 acres.
- Field crew will consist of four people: including two Consultant staff, one Eastern Shoshone Representative, and one Northern Arapaho representative.
- Pedestrian survey transect interval will be 30 meters.
- Paleontological resources will be documented during the field survey. Brief field observations including resource descriptions, photographs, and mapping will be compiled in a technical memorandum.
- Completion of the survey will take no longer than three field days.
- All project elements requiring cultural resource survey will be identified prior to fieldwork.
- Right-of-entry to all survey areas will be acquired prior to the start of fieldwork.
- Up to 10 archaeological sites are anticipated to require documentation within the project APE. Sites will be evaluated for National Register of Historic Places (NRHP) criteria.
- One review each of the draft and final cultural resource reports and site forms will be conducted by the THPOs prior to submittal to the lead federal agency.
- If requested, additional consultation regarding effects to historic properties will be covered under a separate scope and cost.
- If requested, any mitigation of adverse effect to historic properties will be covered under a separate scope and cost.

- The survey GIS shapefiles and Wyoming Cultural Property Forms will be submitted to both THPOs and will upload data to the Wyoming SHPO WyoTrack database upon permission from the THPOs.

Aquatic Habitat Assessment

- The Aquatic Biological Resources and Fisheries Assessment will be conducted only for the area of preferred reservoir site location.
- No additional mobilization will be required, as this will be done in conjunction with other surveys.
- Species specific surveys are not included with this task.
- The study area will be defined and agreed upon by the Tribes, BIA, WGFD, and WWDO.
- Field surveys can be completed with a one-day site visit.

Terrestrial Habitat Assessment and Wyoming Stream Quantification Tool

- Two reaches (Saint Lawrence Creek, North Fork Little Wind River) will need to be evaluated. Combined total reach length is assumed to be less than 6,050 ft.
- Field effort will occur concurrently with the Aquatic Resources Inventory.
- Longitudinal profile data will not be collected, and therefore survey equipment beyond a hand-held sub-meter GPS unit will not be required.
- Physicochemical (temperature, nutrients) and biological (macroinvertebrates, fish) parameters would not be collected.

Dam Hazard Classification

- Available topographic data, generally 1:24,000, 40 foot contour, will be used for hydraulic modeling.
- Dam breach analysis will be completed using HEC-RAS with simplifying assumptions for structures, culverts, and bridge crossings.
- Model resolution will be limited to major features impacting overall flow patterns.
- Hazard Potential classification will be completed based on evaluation of average flow depth and velocity at impacted structures. Flood timing, loss of life, and flood risk analyses are not included.

Task 5. Geotechnical Investigation

- For safety, the field team will consist of 2 geologists
- The duration of the mapping effort will take up to 3 days
- Travel to the site will require a rental vehicle
- Lodging and expenses for up to 4 nights will be needed in Lander, WY
- Right-of-entry to all survey areas will be provided prior to the start of fieldwork

Task 7. Conceptual Designs and Cost Estimates

- Additional seismic or deformation analysis may be required in future phases or projects to develop final designs.
- Preliminary reservoir routing will be performed to determine a reasonable combination of dam crest elevation and spillway capacity but no hydraulic modeling will be performed to simulate spillway flow characteristics.



THE STATE OF WYOMING
Water Development Office

6920 YELLOWTAIL ROAD TELEPHONE: (307) 777-7626 CHEYENNE, WY 82002



MEMORANDUM

DATE: May 12, 2022

TO: Wyoming Water Development Commission

FROM: George Moser, P.G., Project Manager

SUBJECT: Contract Amendment Three
Douglas Test Well, Level II Study

For WWDC consideration today is a planning study Contract amendment to extend the consultant services contract expiration date an additional 6 months.

The Douglas Test Well Level II Study involves a municipal water supply test well siting and drilling program for the City of Douglas. Douglas has current municipal public water source supply (permitted) from the following:

<u>North Platte River:</u>	Permit 6101, 0.85 cfs (seasonal), priority 7/7/1904 Permit 9903, 4.5 cfs , 6/15/1910
<u>Little Boxelder Spring:</u>	Territorials, 3.93 cfs total, 1879 & 1885 Permit 2335 Enl., 0.2 cfs , 4/20/1910
<u>Sheep Mountain Well No.1:</u>	Permit No. U.W. 97415, 1,200 gpm , 4/17/1990

An additional municipal supply well was recommended in the 2010 WWDC Douglas Master Water Plan, Level I Study. The City has since been staging water projects, including the replacement of the 16-mile Little Boxelder Pipeline (WWDC 2011 & 2016 Level III), and submitted application for this WWDC Level II in September 2016. The intent of the Level II project is to develop a second Paleozoic-age aquifer (Casper Formation-Madison Formation) well in association with the Sheep Mountain No. 1 Well that was successfully developed in 1990.

The study began in July 2017 with an intensive research and well siting exercise that culminated in a ranked "short-list" of potential locations to test. Seeking adequate access became an unusually protracted process with landowners. The Easement and Access Agreement involves temporary and permanent commitment that assures future acquisition for the well site and pipeline, power, and maintenance ROW should a successful test well be constructed. The Agreement terms have been negotiated, approved as to form by the Attorney General's Office, and presented to the landowners. As of the beginning of May, the landowners have verbally committed to signing the Agreement.

The current Contract expires on December 31, 2022. The Contract originally expired on December 31, 2019, and has been extended twice previously. This extension is necessary to accommodate additional time for drilling the test well, evaluating aquifer performance, and preparing the draft and final reports required under the Contract.

**AMENDMENT THREE TO
CONSULTANT CONTRACT FOR SERVICES NO. 05SC0296967
DOUGLAS TEST WELL, LEVEL II STUDY BETWEEN
WYOMING WATER DEVELOPMENT COMMISSION
AND
WESTON ENGINEERING, INC.**

1. **Parties.** This Amendment is made and entered into by and between the Wyoming Water Development Commission [Commission], whose address is: 6920 Yellowtail Road, Cheyenne, Wyoming 82002; and Weston Engineering, Inc. [Consultant], whose address is: 1050 North 3rd Street, Suite E, Laramie, Wyoming 82072.
2. **Purpose of Amendment.** This Amendment shall constitute the third amendment to the Contract between the Commission and the Consultant. The purpose of this Amendment is to extend the term of the Contract through June 30, 2023.

The original Contract, dated June 13, 2017, required the Consultant to render certain technical or professional services therein described in connection with an undertaking to be financed by the Commission and administered by the Wyoming Water Development Office [Office] through its director or his designee for a total Contract amount of one million, one hundred sixty-nine thousand, five hundred dollars (\$1,169,500.00) with an expiration date of December 31, 2019.

Amendment One, dated October 9, 2019 extended the term of the Contract through June 30, 2021.

Amendment Two, dated March 22, 2021 extended the term of the Contract through December 31, 2022.

3. **Term of the Amendment.** This Amendment shall commence upon the date the last required signature is affixed hereto (Effective Date), and shall remain in full force and effect through the term of the Contract, as amended, unless terminated at an earlier date pursuant to the provisions of the Contract, or pursuant to federal or state statute, rule or regulation.
4. **Amendments.**
 - A. The second sentence of Section 3 of the original Contract is hereby amended to read as follows:

“The term of this Contract is from the Effective Date through June 30, 2023.”
5. **Amended Responsibilities of the Consultant.**

Responsibilities of the Consultant have not changed.

6. **Amended Responsibilities of the Commission.**

Responsibilities of the Commission have not changed.

7. **Special Provisions.**

- A. **Same Terms and Conditions.** With the exception of items explicitly delineated in this Amendment, all terms and conditions of the original Contract, and any previous amendments, between the Commission and the Consultant, including but not limited to sovereign immunity, shall remain unchanged and in full force and effect.
- B. **Counterparts.** This Amendment may be executed in counterparts. Each counterpart, when executed and delivered, shall be deemed an original and all counterparts together shall constitute one and the same Amendment. Delivery by the Consultant of an originally signed counterpart of this Amendment by PDF shall be followed up immediately by delivery of the originally signed counterpart to the Commission.

8. **General Provisions.**

- A. **Entirety of Contract.** The Original Contract, consisting of fourteen (14) pages; Attachment A, consisting of twenty-two (22) pages; Attachment B, consisting of one (1) page; Amendment One, consisting of three (3) pages; Amendment Two, consisting of three (3) pages; and this Amendment Three, consisting of three (3) pages, represent the entire and integrated Contract between the parties and supersede all prior negotiations, representations, and agreements whether written or oral.

THE REMAINDER OF THIS PAGE WAS INTENTIONALLY LEFT BLANK

9. **Signatures.** The parties to this Amendment, through their duly authorized representatives, have executed this Amendment on the dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this Amendment.

This Amendment is not binding on either party until approved by A&I Procurement and the Governor of the State of Wyoming or his designee, if required by Wyo. Stat. § 9-2-1016(b)(iv).

WYOMING WATER DEVELOPMENT COMMISSION:

Mark Kot, Chairman

Date

Liisa Anselmi-Dalton, Secretary

Date

WESTON ENGINEERING, INC.:

Ben Jordan, P.G., Laramie Office Manager
Employer Identification Number: 83-0240969

Date

ATTORNEY GENERAL'S OFFICE: APPROVAL AS TO FORM

Megan Pope, Senior Assistant Attorney General

Date



THE STATE OF WYOMING
Water Development Office

6920 YELLOWTAIL ROAD TELEPHONE: (307) 777-7626 CHEYENNE, WY 82002



MEMORANDUM

DATE: May 12, 2022

TO: Wyoming Water Development Commission

FROM: Chace Tavelli, Planning Division

SUBJECT: Amendment Five to LaPrele Irrigation District Rehabilitation, Level II Study Contract

This memo serves as an explanation for Amendment Five to the LaPrele Irrigation District Rehabilitation, Level II Study. Amendment Five adds a Phase III scope of work; increases the total Contract dollar amount by \$2,395,600; accepts the Consultant's new rate sheet for subsequent billings; and extends the term of the Contract through June, 30, 2024.

Phase III includes scope language to:

1. Continue project management duties.
2. Advance site characterization through additional geophysical surveys; drilling of boreholes to further characterize the abutments, foundation, plunge pool, and aggregate sources.
3. Advance the design through the use of a structural model to evaluate earthquake loadings on the dam and identify conditions that may cause cracking.
4. Develop a physical scale model of the dam. The model will include the proposed dam and its hydraulic features, a portion of the surrounding topography, the reservoir upstream and the stream channel downstream. The scale model will facilitate accurate analysis of the dam's performance under a range of flood conditions.
5. Begin Environmental investigations such as biological resources surveys, aquatic resources delineation, and cultural resources surveys.
6. Provide discretionary and Phase III reporting tasks.

The increase in budget of \$2,395,600 expends the remaining funds from the \$4.3 million dollars that were allocated to the project in 2021.

**AMENDMENT FIVE TO
CONSULTANT CONTRACT FOR SERVICES NO. 05SC0297839
LAPRELE IRRIGATION DISTRICT REHABILITATION LEVEL II STUDY
BETWEEN WYOMING WATER DEVELOPMENT COMMISSION
AND RESPEC COMPANY, LLC**

1. **Parties.** This Amendment is made and entered into by and between the Wyoming Water Development Commission [Commission], whose address is: 6920 Yellowtail Road, Cheyenne, Wyoming 82002; and RESPEC COMPANY, LLC, formerly Re/Spec Inc. [Consultant], whose address is: 3824 Jet Drive, Rapid City, SD 57703.
2. **Purpose of Amendment.** This Amendment shall constitute the fifth amendment to the Contract between the Commission and the Consultant. The purpose of this Amendment is to: a) replace Attachment A5 with a new Attachment A6; b) amend the responsibilities of the Consultant; c) increase the total Contract dollar amount by two million, three hundred ninety-five thousand, six hundred dollars (\$2,395,600.00) to five million, two hundred ninety-eight thousand, two hundred dollars (\$5,298,200.00); d) extend the term of the Contract through June 30, 2024; e) replace Attachment B with a new Attachment B2; and f) accept the Consultant's new rate sheet for subsequent billings.

The original Contract, dated March 22, 2019, required the Consultant to perform a Level II rehabilitation study for the LaPrele Irrigation District for a total Contract amount of two hundred ninety thousand dollars (\$290,000.00) with an expiration date of June 30, 2021.

Amendment One, dated November 19, 2019, amended the original Contract to: a) replace Attachment A with Attachment A2; and b) amend the responsibilities of the Consultant.

Amendment Two, dated June 19, 2020, amended the original Contract to: a) replace Attachment A2 with a new Attachment A3; b) amend the responsibilities of the Consultant; c) increase the total Contract dollar amount by seven hundred eight thousand, two hundred dollars (\$708,200.00) to nine hundred ninety-eight thousand, two hundred dollars (\$998,200.00); and d) extend the term of the Contract through June 30, 2022.

Amendment Three, dated April 2, 2021, amended the original Contract to: a) replace Attachment A3 with a new Attachment A4; b) amend the responsibilities of the Consultant; c) increase the total Contract dollar amount by one hundred ninety-four thousand, four hundred dollars (\$194,400.00) to one million, one hundred ninety-two thousand, six hundred dollars (\$1,192,600.00); and d) to acknowledge the restructuring of Re/Spec Inc. to its corporate organization with RESPEC COMPANY, LLC as the new and surviving entity.

Amendment Four, dated May 18, 2021, amended the Contract to: a) replace Attachment A4 with a new Attachment A5; b) amend the responsibilities of the Consultant; c) increase the total Contract dollar amount by one million, seven hundred ten thousand dollars

(\$1,710,000.00) to two million, nine hundred two thousand, six hundred dollars (\$2,902,600.00); and d) extend the term of the Contract through June 30, 2023.

3. **Term of the Amendment.** This Amendment shall commence upon the date the last required signature is affixed hereto (Effective Date), and shall remain in full force and effect through the term of the Contract, as amended, unless terminated at an earlier date pursuant to the provisions of the Contract, or pursuant to federal or state statute, rule or regulation.

4. **Amendments.**

- A. Section 4.A. of the original Contract is hereby amended to read as follows:

“A. **Reimbursement of Expenses.** The Commission agrees to pay the Consultant an amount based on the approved hourly rate and reimbursable expenses price schedules depicted in Attachment B2 (2022 rate sheet), attached to this Contract and incorporated by reference as part of this Contract, for the services described in Attachment A6, attached to this Contract and incorporated by reference as part of this Contract. The total payment under this Contract shall not exceed five million, two hundred ninety-eight thousand, two hundred dollars (\$5,298,200.00).”

- B. Section 4.B. of the original Contract is hereby amended in its entirety to read as follows:

“B. **Project Budget.** The Project budget for each task included in Attachment A6 is as follows:

<u>Task</u>	<u>Estimated Cost</u>
Phase I	
1. Project Meetings	\$ 28,100.00
2. Information Review	\$ 10,300.00
3. Rockfall Hazard Analysis, Dam Structural Assessment	\$ 299,533.00
4. Economic Analysis and Project Financing	\$ 1,064.00
5. Discretionary Task	\$ 8,000.00
6. Draft Report	\$ 1,203.00
Phase I Total	\$ 348,200.00
Phase II	
1. Project Management, Meetings, Quality Assurance	\$ 381,900.00
2. Information Review and Supporting Analysis	\$ 33,650.76
3. Alternatives Development	\$ 511,665.54
4. Alternative Cost and Constructability	\$ 73,683.70
5. Site Characterization	\$ 871,000.00

6.	Design Advancement	\$ 505,000.00
7.	Discretionary Task	\$ 150,000.00
8.	Conceptual Design Report	<u>\$ 27,500.00</u>

Phase II Total \$ 2,554,400.00

Phase III

1.	Project Management	\$ 200,000.00
2.	Site Characterization	\$1,250,000.00
3.	Design Analysis	\$ 665,000.00
4.	Environmental Investigations	\$ 200,000.00
5.	Discretionary Task	\$ 50,600.00
6.	Phase III Report	<u>\$ 30,000.00</u>

Phase III Total \$2,395,600.00

PROJECT TOTAL COST \$5,298,200.00

The amounts for each task are estimates only, but are not to be exceeded unless authorized in writing by the Commission. The Contract total amount is controlling. Payment shall be made directly to the Consultant. The Consultant shall maintain hourly records of time worked by its personnel to support any audits the state or the Commission may require. Billing reports shall be submitted no more often than monthly for activities and costs accrued since the last billing report and shall be made on forms provided by the Office. The Consultant may use alternate billing forms if approved in advance by the Office project manager. A brief project progress report summarizing project activities in the billing period must be submitted with each billing.”

- C. The second sentence of Section 3 of the original Contract is hereby amended to read as follows:

“The term of this Contract is from the Effective Date through June 30, 2024.”

5. Amended Responsibilities of the Consultant.

Responsibilities of the Consultant are hereby amended as follows:

- A. As of the Effective Date of this Amendment, Attachment A5, Fourth Revised Scope of Services, which was attached to the original Contract, is superseded and replaced by Attachment A6, Fifth Revised Scope of Services, which is attached to this Amendment and incorporated into the original Contract by this reference. All references to “Attachment A5” in the original Contract, and in any amendments thereto, are amended to read: “Attachment A6”.

6. **Amended Responsibilities of the Commission.**

Responsibilities of the Commission have not changed.

7. **Special Provisions.**

- A. **Same Terms and Conditions.** With the exception of items explicitly delineated in this Amendment, all terms and conditions of the original Contract, and any previous amendments, between the Commission and the Consultant, including but not limited to sovereign immunity, shall remain unchanged and in full force and effect.
- B. **Counterparts.** This Amendment may be executed in counterparts. Each counterpart, when executed and delivered, shall be deemed an original and all counterparts together shall constitute one and the same Amendment. Delivery by the Consultant of an originally signed counterpart of this Amendment by PDF shall be followed up immediately by delivery of the originally signed counterpart to the Commission.

8. **General Provisions.**

- A. **Entirety of Contract.** The Original Contract, consisting of fourteen (14) pages; Attachment A, Scope of Services, consisting of thirteen (13) pages; Attachment B, consisting of two (2) pages; Amendment One, consisting of four (4) pages; Attachment A2, Revised Scope of Services, consisting of eleven (11) pages; Amendment Two, consisting of four (4) pages; Attachment A3, Second Revised Scope of Services, consisting of twenty-two (22) pages; Amendment Three, consisting of four (4) pages; Attachment A4, Third Revised Scope of Services, consisting of twenty-three (23) pages; Amendment Four, consisting of five (5) pages; Attachment A5, Fourth Revised Scope of Services, consisting of twenty-nine (29) pages; and Amendment Five, consisting of five (5) pages; Attachment A6, Fifth Revised Scope of Services, consisting of thirty four (34) pages; and Attachment B2, consisting of two (2) pages represent the entire and integrated Contract between the parties and supersede all prior negotiations, representations, and agreements whether written or oral.

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9. **Signatures.** The parties to this Amendment, through their duly authorized representatives, have executed this Amendment on the dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this Amendment.

This Amendment is not binding on either party until approved by A&I Procurement and the Governor of the State of Wyoming or his designee, if required by Wyo. Stat. § 9-2-1016(b)(iv).

WYOMING WATER DEVELOPMENT COMMISSION:

Mark Kot, Chairman

Date

Liisa Anselmi-Dalton, Secretary

Date

RESPEC COMPANY, LLC:

Russell Persyn, Senior Vice President of WNR
Employer Identification Number: 83-2898293

Date

ATTORNEY GENERAL'S OFFICE: APPROVAL AS TO FORM

Megan Pope, Senior Assistant Attorney General

Date

**ATTACHMENT A6
FIFTH REVISED SCOPE OF SERVICES**

A. AUTHORIZATION

The Wyoming Legislature has authorized the Commission to conduct the study described herein. The Consultant will complete the tasks and requirements outlined in Section D. Scope of Services in this Attachment. The Commission, at its sole discretion and through duly authorized contract amendments, may request the Consultant to complete additional work phases beyond the following scope of services.

B. PROJECT DESCRIPTION

1. Location: The LaPrele Irrigation District is located west and south of Douglas, Wyoming, along Interstate 25 in Converse County, and lies within the North Platte River Basin.
2. Purpose: To perform a Level II rehabilitation study for the LaPrele Irrigation District to include looking at design and permitting for LaPrele Dam rehabilitation and/or replacement options.
3. History: The LaPrele Irrigation District supply system is made up of 3 reservoirs, siphons, tunnels, and open ditch canals. The District requested a Level II study to analyze the potential for rock falling from the canyon and striking the dam. During the study, some cracking in buttress number 17 was identified which led to further analysis of the entire structure. The analysis concluded that there is significant cracking throughout the dam, concrete strengths are less than ideal, and the dam has reached its life expectancy. Following this assessment, an alternatives analysis was conducted to consider options for infilling the existing dam or replacement with downstream alternatives. Five alternatives were identified, including infilling the existing structure. A preferred alternative, roller compacted concrete, was identified. Initial geotechnical work was conducted as well as appraisal level design and cost estimates. Further geotechnical, design, and permitting work is expected.

Previous Reports:

- LaPrele Irrigation Project: Section I, Soils and Drainage, Section II, Seepage and Water Loss Study, Section III, Hydrologic study
- LaPrele Level III Development Plan, Interim Report
- Priority Improvements of the LaPrele Irrigation Project: Estimates of Increased Returns to Irrigators
- LaPrele Irrigation District Master Plan, Level I Study

Additional information may be found at the Water Resources Data System, located at the University of Wyoming.

C. **PROJECT REQUIREMENTS**

1. Monthly Progress Reports and Billing Statements

The Consultant shall submit a brief monthly progress report outlining the study status, progress, and results to date, regardless of whether or not a billing statement is submitted, on or before the last working day of the month.

Each billing statement must include a task-by-task report justifying the cost items contained in the billing statement. The monthly progress report may be used as the justification for the billing statement as long as all cost items covered in the billing statement are addressed in the progress report.

2. Computer Models, Geographic Information System (GIS), Statement of Assumptions, Project Work File

- a. If the Consultant writes or uses a computer program or spreadsheet as a part of this project, the Consultant shall submit to the Commission for approval all proposed program names and data formats prior to beginning work on that task. All data shall be submitted to the Commission in written and digital forms with the final report. Digital media shall be labeled by the Consultant to provide sufficient detail to access the information on the media. User manuals shall be submitted by the Consultant to the Commission providing complete documentation of computer programs developed under this project. The user manuals shall also contain the source code language and the type of computer equipment necessary to operate the program(s). The computer programs and spreadsheets (written and digital forms) are due on the same date as the final report, which contains the information generated by the programs.
- b. If the Consultant develops, collects, and/or uses GIS data as a part of this project, the Consultant shall do so in accordance with the WWDC GIS Standards Technical Memorandum utilizing provided Geodatabase Templates. Links to GIS Standards Technical Memorandum are available at <http://water.geospatialhub.org/pages/wwdc-gis-standards>. A webinar on required GIS Standards, hosted by WWDC and WRDS, will be available following consultant selection and is strongly recommended.

The Consultant shall adhere to the following GIS standards:

- (i) **FEATURE MAPPING.** The Consultant shall acquire the appropriate Geodatabase Template for feature mapping from <http://water.geospatialhub.org/search?groupIds=3e77928b1d0d49858b8916ca63ca5ca4> prior to any GIS work. Five Geodatabase Templates are available and are specific to project type. These templates define the organization and naming requirements for

feature classes, tables, and the required attributes within the feature classes. Data needed for the project and described in this contract may include core data or auxiliary data. Core data includes features which fit within one of the feature classes in the Geodatabase Template, whether newly created or acquired from another source. All core data shall be loaded into the Geodatabase Template and attributed according to the GIS data schema described in the GIS Standards Technical Memorandum. This shall include field attributes that indicate contract number, primary consultant, date modified, and accuracy. Auxiliary data sets, include features which do not fit within one of the feature classes in the Geodatabase Templates, whether newly created or acquired from another source. The auxiliary data can be linked to the templates or managed separately as needed for project completion.

- (ii) FORMATS and STANDARDS. Metadata are required for the geodatabase file, each included feature class (including those obtained from another source) and for each newly created feature. Metadata shall be completed in accordance with the GIS Standards Technical Memorandum. A detailed example for feature class metadata is provided in the GIS Standards Technical Memorandum and included in the Geodatabase Templates. This includes required information and default language, where appropriate, for each of the five metadata sections. Feature-level metadata requirements are also described in the Memorandum. Codes or values used in attribute fields, which are not included as part of the core data templates, shall be defined in the metadata. GIS data shall be saved in a Decimal Degree Coordinate system with a NAD83 datum, specifically “GCS_North_American_1983,” as indicated in the GIS Standards Technical Memorandum. In addition to the Project geodatabase(s) and map file(s), GIS deliverables may also include linked nonspatial data/databases (.accdb, .xlsx), rasters (various formats), photographs (.jpg), maps (.pdf), and file integrated metadata references (.xml, .txt). Core data shall be delivered within the Geodatabase Template. Auxiliary data can be provided as .shp files and metadata are required.
- (iii) MAPS. Project GIS deliverables shall be organized in such a way as to allow easy replication of the maps found in the final project report. The GIS project files should be provided as ESRI ArcGIS mxd files saved with relative path names to data sources.

- c. To facilitate the Commission’s accurate evaluation of the Consultant's work product, computations, conclusions and recommendations, the Consultant shall:

ATTACHMENT A6

- (i) Include in the final report a section describing the assumptions and methodology used by the Consultant in generating the data and conclusions contained in that chapter.
- (ii) Maintain a project work file containing the materials used in project analysis. This file will be available for review by the Commission and should be organized in such a way as to allow replication of the steps and procedures used by the Consultant to reach the conclusions described in the study.
- (iii) Prepare a project notebook containing a description of the assumptions and methodologies used in the project analysis. The notebook shall be organized in such a way as to allow replication of the steps, calculations, and procedures used by the Consultant to reach conclusions, described in the draft final report. The project notebook shall be submitted with the draft final report.

3. Cost Estimates

WWDC ELIGIBLE PROJECT COSTS

CONSTRUCTION COSTS

Itemized Cost of Each Project Component	\$ _____
	\$ _____
	\$ _____
	\$ _____
Cost of Project Components TOTAL (subtotal #1)	\$ _____
Construction Engineering Cost (subtotal #1 x 10%)	\$ _____
Components + Construction Engineering Costs (subtotal #2)	\$ _____
Contingency (subtotal #2 x 15%)	\$ _____
Construction Cost Total (subtotal #2 + Contingency) (subtotal #3)	\$ _____

PRE-CONSTRUCTION COSTS

Preparation of Final Designs & Specifications (subtotal #1 x 10%)	\$ _____
Permitting and Mitigation	\$ _____
Legal Fees (Title of Opinion Only)	\$ _____
Acquisition of Access and Rights of Way	\$ _____
Pre-construction Costs Total (subtotal #4)	\$ _____

TOTAL WWDC Eligible PROJECT COST

Total WWDC Eligible Project Cost (subtotal #3 + subtotal #4) \$ _____
 (subtotal #5)

WWDC INELIGIBLE PROJECT COSTS

Itemized Costs of Ineligible Project Components \$ _____
 \$ _____
 \$ _____
 \$ _____
 Additional Cost for Construction Engineering \$ _____
 Additional Cost for Preparation of Final Designs & Specifications \$ _____
 Total WWDC Ineligible Project Costs Total \$ _____
 (subtotal #6)

TOTAL PROJECT COST

Total Project Cost (subtotal #5 + subtotal #6) \$ _____

MATERIALS ONLY TOTAL

Materials Only Total Project Cost ((Subtotal #1 + (Subtotal #1 x 10%))
 \$ _____

Note: Any inflation costs, as determined by the Consultant and the Office project manager, will be applied to the Total Project Cost.

4. Final Report

The Consultant shall use the Contract Scope of Services as the outline for draft and final reports so that Consultant compliance with Contract provisions can be verified. If the final report contains information of an engineering nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by a Professional Engineer licensed in the State of Wyoming. If the final report contains information of a geologic nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by a Professional Geologist licensed in the State of Wyoming. If the final report contains information of both an engineering and geologic nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by both a Professional Engineer and a Professional Geologist licensed in the State of Wyoming.

5. Final Report - Digital Format

In addition to the paper submittal described in Section C.4 above, the Consultant shall also provide the final documents and related materials in a digital format. This

digital report shall be contained on CD/DVD(s), USB drive(s), or other media as approved by the Office project manager, and shall be in Searchable Image Adobe Acrobat format.

6. Anticipated Project Funding Assistance

The Consultant shall clearly identify project components eligible for Commission funding, both in cost estimates and in project mapping. The Consultant shall verify project component funding eligibility with the Office project manager prior to commencing any economic analysis. Unless otherwise directed by the Office project manager, the Consultant shall assume that projects will be funded with a 67% grant. The remaining 33% shall be acquired from external sources (for municipal projects); or from external sources and/or a loan from the WWDC (for agricultural projects). The Commission loan will be financed at an interest rate of four percent (4%) with a term to be specified by the Office project manager. If funding is anticipated from another agency, such as the Office of State Lands and Investments or the USDA Rural Utilities Service (RUS), the Consultant shall prepare cost estimates for system components not eligible for Commission assistance in a format and level of detail acceptable to the potential funding agency.

If required in the Contract Scope of Services, the Consultant shall provide the information necessary to complete applications to RUS, the Office of State Lands and Investments, and any other identified funding sources.

7. Project Access

The Consultant shall be responsible for obtaining access as required for project tasks.

8. Stand-By Time

The Commission will not reimburse the Consultant for stand-by time charges for the Consultant's supervisory personnel.

9. Well Permitting

All wells developed under this program shall list the State of Wyoming, Water Development Office as the permittee. The Consultant shall be responsible for obtaining the permit.

10. Verification Log

After all casing has been installed in the well, the Office may require that a geophysical log be performed on the well to verify casing placement. A copy of this log shall be included in the final report.

D. SCOPE OF SERVICES

PHASE I

Task 1. Project Meetings

A scoping meeting shall be held as early in the project schedule as possible in the project area to familiarize the Sponsor with the scope of the project as well as obtain and provide input and information to and from all affected parties. The Consultant shall prepare all presentation material, including maps and other visual aids as necessary, to explain the project. The scoping meeting location and time shall be coordinated with the Sponsor and Office project manager and should be held after the Consultant has reviewed all background information as described in Task 2.

Additional public project meetings shall be conducted to facilitate project activity coordination and to keep the Sponsor and all affected parties informed of progress. The Consultant should assume a minimum of three (3) public project meetings in the study area. One (1) of these meetings will be held at the discretion of the Office project manager. The Consultant shall be responsible for setting and conducting these meetings in coordination with the Office project manager and the Sponsor. The Consultant shall prepare all notices, needed materials, and the meeting record. In addition to the public project meetings, several informal meetings with the Sponsor or Office project manager may be necessary during the course of the study. In the interest of economy, meetings will be scheduled to coincide with fieldwork. The Consultant shall notify the WWDO project manager in advance of meetings with the project sponsor.

Task 2. Information Review

The Consultant shall gather and review all existing information related to the project. This includes information available through the Sponsor, WWDO, Water Resources Data System (WRDS), Wyoming State Engineer's Office, Wyoming Department of Environmental Quality Water Quality Division (DEQ), and any other sources as appropriate. The Consultant will coordinate with the Sponsor and Office project manager to obtain all past relevant studies that need to be reviewed. The Consultant shall provide a summary of existing information in the final report.

Task 3. Rockfall Hazard Analysis, Dam Structural Assessment

The Consultant will perform a rockfall hazard analysis and shall perform the following bulleted task list:

A. Study Area Establishment

Based on cursory review, the study area shall include the dam, spillway, and tunnel and have the following extents: approximately 500 feet upstream and approximately 500 feet downstream from the dam crest along the reservoir bottom/canyon floor centerline; horizontally from this centerline perpendicular to slope direction to the canyon ridgeline on either side; vertically from observed reservoir water surface elevation to canyon ridgeline upstream from the dam; and

vertically from canyon floor to canyon ridgeline downstream from the dam. Establishment of the final study area extents shall include close coordination with the Office project manager and the LaPrele Irrigation District.

B. 3D Survey of the Study Area

Data collected with this survey shall be of sufficient resolution to aid in identifying rockblocks of significant size and fall potential, and to aid identification of rockblock movement over time when compared to future surveys. Appropriate survey technologies could include ground-based LiDAR, unmanned drone with LiDAR, or other technologies that produce a 3D point cloud such as photogrammetry. The survey shall include sufficient data for estimating volume of the debris pile below the emergency spillway discharge zone as a potential borrow source for mitigation or remediation projects. This data shall be post-processed into a format compatible with typical GIS software.

C. Hazard Inspection of the Study Area

Assisted by data from the 3D survey, a visual inspection of the study area shall be performed to identify and characterize rockfall hazards. The objective of this inspection is to prioritize rockblocks of significant size and fall potential with reasonable probability of impacting the dam. The inspection shall define the location, size, and profile of priority rockblocks and shall be performed by an experienced rock mechanics engineer.

D. Rockfall Energy Estimate and Risk of Impact to the Dam

For each priority rockblock identified within the 3D survey and hazard inspection, a probabilistic analysis shall be performed to estimate the impact energy from rockfall and likelihood of impacting the dam. This analysis shall provide quantification of dam impact risk and a range of impact energy for each priority rockblock using rockfall analysis software such as Rocscience RocFall.

E. Structural Analysis of the Dam

A structural analysis of the dam shall be performed to understand overall integrity of the dam, and to understand the potential consequence of each predicted rockfall impact. The analysis shall consider as-built dam drawings, structural updates, and concrete integrity (e.g., possibly including core strength or similar test results as applicable). Structural calculations will be used to find the potential impact of rock fall loading on the buttresses closest to the abutments. Estimated rock fall loads will be compared to the capacities calculated using American Concrete Institute code as a measure against performance. The objective is to identify the potential consequence to the dam from each predicted rockfall impact.

F. Structural Buttress Inspection

The Consultant will perform a structural inspection of the remaining buttresses, not previously inspected by the Consultant in Task 3.E., utilizing a rope access team and a drone team.

- a. **Inspection Plan:** To prepare for the inspection, the Consultant will review background information on the dam and prepare a Rope Access Job Hazard Analysis. Typical Personal Protective Equipment (PPE) will be used in addition to the industrial rope access gear. A site-specific Safety Action Plan must be completed, kept with the work group, and given to the LaPrele Irrigation District (LID) Representative upon request. Job briefings will be completed each morning before the work begins. Structural Inspection diagrams and rope inspection templates will be created as part of the Inspection Plan.
- b. **Inspection:** The drone will document exposed surface of buttresses 2-17 (16 buttresses total of varying height) while the industrial rope access team will focus on documenting the downstream edge of the buttresses within arms-reach looking for similar vertical cracks as found in buttress 17. The industrial rope access team will also perform several ascents on buttresses identified in the inspection plan by ascending Kevlar ropes rigged to the struts on the dam interior. This will help validate data collected by the drone while also developing the machine learning for crack image recognition. The drone images will then be run through a crack detection algorithm to look for additional cracks.
- c. **Core Samples:** Four core samples will be collected in various locations on the buttresses to determine concrete strength. The inspection team will utilize a Schmidt hammer to correlate additional readings to the core sample cylinders. The core holes will be patched with dry pack mortar as directed by the Consultant. **The Consultant shall not begin work on this Task unless specifically authorized in writing by the Office project manager and the LaPrele Irrigation District.**
- d. **Laboratory Testing:** The Consultant will determine concrete core strengths per ASTM C42. The Schmidt hammer readings on the cores will be compared to the additional Schmidt hammer readings once strength data is available.

The inspection team will consist of 4 SPRAT certified engineers one of which will be the industrial rope access supervisor (SPRAT III). The team will also consist of 1 drone pilot. The inspection team will be qualified for self-rigging, safety, and rescue support.

For visual inspections the inspection team is not responsible for defects that are not readily discernible by external visual inspection through reasonable efforts. This scope does not include any follow-up site visits for visual monitoring of the dam or installing gauges.

The Consultant will provide the following deliverables:

1. Structural Inspection and Safety Plan (Hard and Digital Copy)

G. Develop Probable Failure Mode Calculations for Buttress Cracking

The Consultant will perform additional potential failure mode calculations specifically looking at stresses associated with the crack locations. The goal is to both verify the finite element model of Buttress 17 previously created, and to determine if the vertical crack is a viable failure mechanism. Strength data from core samples will be incorporated into the structural analysis. The following calculations will be produced to support the existing finite element model:

- a. Shear wall calculations estimating required end zone reinforcing.
- b. Buckling check of the wall between struts and unsupported edges using Euler-Buckling equations.
- c. Finite element model comparison with observed strain.
- d. Finite element model loading and validation estimates.

The Consultant will provide the following deliverables:

1. Draft Dam Inspection, Testing, and Analysis Technical Memo (Hard and Digital Copy)
2. Final Dam Inspection, Testing, and Analysis Technical Memo (Hard and Digital Copy)

All necessary permits and clearances shall be identified for hazard mitigation alternatives, monitoring alternatives, and access to the site.

Following substantial completion of Task 3.F. and 3.G. and in coordination with the Office project manager and the LaPrele Irrigation District, the Consultant will present their findings to the District at a public meeting. This meeting is in addition to the meetings described in Task 1.

Task 4. Economic Analysis and Project Financing

All Task 4 work, not completed by October 25th, 2019, will cease for the remainder of the project or until further Amendments to the Contract affecting this task are approved by the Commission.

The Consultant shall provide an ability to pay analysis and, if necessary, recommend adjustments to the District's revenues/rates. This analysis will be used to determine if the Sponsor has the ability to pay for recommended rehabilitation projects based on their current revenue structure or if the Sponsor will need to raise their rates. The Consultant shall generate recommendations for rate structures based on annual financial commitments of the sponsor needed to cover construction costs, operation and maintenance obligations, and a repair and replacement account. The Consultant shall consider all of the District's income and expenditures. The analysis will be based on the following three (3) scenarios:

Scenario 1: Assume there will be no state, federal, or outside funding assistance utilized, i.e.: the Consultant shall demonstrate the necessary adjustments in the District's system revenues under the assumption that the Sponsor independently finances the prioritized recommendations.

Scenario 2: Excluding the WWDC, assume there will be state, federal, or outside funding assistance utilized, i.e.: the Consultant shall identify additional funding sources, excluding the WWDC, that the Sponsor can pursue to help fund the prioritized recommendations and demonstrate the necessary adjustments in the District's system revenues under the assumption that the Sponsor independently finances the costs for completion of the prioritized recommendations that are not funded by state, federal, or other sources.

Scenario 3: Assume that funding for WWDC eligible components will be in the form of a 67% grant from WWDC and a 33% loan (4% interest / 30-year term) from the WWDC, and funding for WWDC non-eligible components will only be in the form of Sponsor contribution from current or proposed revenues.

The Consultant shall then identify additional funding sources outside of the WWDC that the Sponsor can pursue to obtain the 33% loan component (Scenario 3 above) and to fund potential WWDC non-eligible components that are necessary for the completion of a Level III construction project. The U.S. Department of Agriculture, U.S. Bureau of Reclamation, and other eligible state and federal funding sources shall be considered for loans, grants, and combinations thereof. For more information on project funding assistance see Section C.6, of Attachment A3.

The Consultant shall research and fully consider all eligibility requirements, application nuances, deadlines, and all logistical and timing challenges that may occur, document the amount of grant or loan funds that may be available through the additional funding sources, and analyze the probability of the Sponsor securing a grant or loan from one or more of the additional funding sources for the project(s) in question. The Consultant shall obtain and review the latest versions of relevant guidance documents, forms, bulletins, supplements, information, etc. from each agency, and contact these agencies early in the study should the possibility exist that the Sponsor may seek funding from them. The Consultant shall document all of this information in the final report including conversations held.

It should be noted that the Sponsor's ability to pay for the project in a timely manner is a key consideration in the WWDC's funding decisions. The annual requests for WWDC funding typically exceed the available funding. There are often uncertainties and delays in acquiring loans

and, particularly, grants from other funding agencies. Therefore, the WWDC may give priority in its Level III funding deliberations to the projects in which the Sponsor has been advancing on a specific financing plan and there is documented evidence that the financing will be in place within the calendar year in which the Level III project funding is approved by the Legislature. If the WWDC finds it necessary to delay Level III funding requests due to the schedule for the financing plan, the WWDC may provide assurance to the Sponsor that it will recommend Level III funding the following year if the project financing is completed. This assurance can be used to assist the Sponsors in securing financing from other entities.

Task 5. Discretionary Task

The Consultant shall place \$8,000 of the proposed project budget in this discretionary task. The task is to allow changes in the scope as the project develops or as new issues are discovered. The Consultant and Office project manager will agree on any work to be accomplished under this task and the cost of the work. No work will be initiated, or funds spent for this task, without direct approval from the Office project manager.

Task 6. Draft Report

All Task 6 work, not completed by October 25th, 2019, will cease for the remainder of the project or until further Amendments to the Contract affecting this task are approved by the Commission.

The Consultant shall submit to the Office five (5) hard copies of a draft report describing the results of all work completed in this study, no later than May 1, 2020. Five (5) CD, DVD, or USB drive copies containing the draft report in a text-recognized Adobe Acrobat (pdf) format will also be provided, along with two (2) CD, DVD, USB drive, or portable hard drive copies of the draft GIS (if applicable) which comply with the standards specified in Attachment “A3”, Section C Project Requirements, item #2. The PDF version will be completely assembled into one standalone file, and shall be exactly the same version as the hard copy. Each CD, DVD, or USB shall be labeled with the project name, contents of the media and date (month and year only). The project Sponsor shall be provided a copy of this draft report for their review.

PHASE II

Phase I of the LaPrele Irrigation District Rehabilitation Level II Study identified rockfall hazards at the LaPrele Dam under the original project scope and evaluated the structural integrity of the dam itself under Amendment One. Based on findings of the Phase I work, a water surface elevation restriction of 5475 feet was placed on the reservoir. The engineering conclusion determined that LaPrele Dam is reaching or has reached the end of its useful life in its current condition. Phase II of the Rehabilitation Level II Study will address the Phase I recommendation to investigate options for replacing or performing major rehabilitation to the LaPrele Dam. The Phase II work is intended to develop and rank conceptual design alternatives and determine a preferred concept.

Task 1. Project Management, Meetings, and Quality Assurance

Project management, meetings, and quality assurance of the project will be tracked under this task. This will include project progress meetings with the WWDO, the project sponsor, and the Consultant team conducted as necessary for the coordination of project activities and to keep the Sponsor and all affected parties informed of project progress. Informal meetings with the Office project manager, the Consultant and the Sponsor will be necessary over the course of the study. At a minimum, a monthly progress meeting or teleconference will occur between the Consultant and Office project manager.

Outside of daily project management, the Consultant shall provide quality control of all work, including subconsultant work. This type of review will be ongoing and include oversight by company principals or senior engineers knowledgeable of the project work and scope, but not associated with the project on a daily basis. Their review will include a check to see that all work scope items have been properly addressed and completed to the intent of the work scope and contract, and that the work products are technically sound.

Project Initiation Meeting/Teleconference

Pursuant to the execution of this contract, a project initiation teleconference and/or meeting will be scheduled between the WWDO, Sponsor, and Consultant project team management. The initial project meeting/teleconference will serve to identify roles and responsibilities, review schedule, and discuss immediate scope tasks. This project initiation meeting would be held in Douglas, Wyoming or online if necessary. A site visit, which will include the Office project manager, the Sponsor, and the Consultant, will be scheduled as soon as possible. The purpose of this meeting/teleconference and site visit would be to review the scope of services and to tour the site with the conceptual design technical leads, in order to have the firsthand knowledge of the site to evaluate conditions related to the alternatives developed in Task 3 and Task 4. The Consultant shall coordinate with the Office project manager to determine agencies, such as the SEO and USACE, invited to attend the site visit as needed and allowable.

Progress Meetings

Project progress meetings (in-person, teleconference, or online) will be conducted as necessary for the coordination of project activities and to keep the Sponsor and all affected parties informed of project progress. The Consultant should assume three (3) project progress meetings to be conducted in-person, via teleconference, or online. Project progress meeting agendas will be sent prior to the meetings.

Public Meetings

The Consultant should assume a minimum of two public project meetings, as allowable, within the study area. The first of these meetings will be a scoping meeting, held after the Notice to Proceed for this contract amendment, to provide a timely update to the Sponsor and stakeholders. The second public meeting will be the Report Presentation, held after the Consultant has received comments on the Draft Report from the Sponsor and Office and incorporated any necessary edits.

The second public meeting shall also serve as a public hearing, with WWDO personnel serving as the hearing officer. The script for the hearing will be developed by the Office project manager and shall include the question as to whether there is a private entity interested in providing the proposed project functions and services in lieu of the Sponsor. The WWDO is responsible for publishing a legal notice of the meeting in a statewide newspaper, once each week for three (3) weeks prior to the hearing; and in the local publication up to three (3) times prior to the hearing. The Consultant shall also plan to attend a meeting in Casper or Cheyenne to present the results to the Commission if requested by the Office project manager.

The Consultant shall be responsible for setting up and conducting these public meetings in coordination with the WWDO project manager and the Sponsor. The Consultant shall notify the WWDO Project Manager in advance of meetings with the Project Sponsor. No meetings shall be conducted without approval in advance by the Office project manager. Information and materials to be presented at the public meeting shall be developed by the Consultant after consultation with the Office project manager. The Consultant shall be responsible for developing a record of the meeting which shall become an appendix in the final report. The record will include: any formal and/or informal notices; an affidavit of publication from the legal notice (public hearings only) as obtained from the WWDO; any materials presented or handed out at the meeting; a record of attendance; any written comments, statements, or exhibits received; recorded testimony, or a memorandum summarizing the views and comments presented at the meeting; and other pertinent data. The Consultant shall coordinate with the Office project manager in planning for the presentations to ensure adherence to WWDO established policies and guidelines.

Project Management Plan

The Consultant shall develop a program management plan (Plan). The purpose of the Plan is to provide a single document with relevant project information including scope, budget, schedule, communication and quality control requirements, and other details required to manage the execution of the planning, permitting, and final level designs, cost estimates, constructability reviews, and schedule for the project. The Plan, once completed and approved, will be accessible to all project team members. The Plan will include a detailed scope of work and schedule through 30% Design and Permitting that are on the critical path. The Plan will also include basic scope and schedule along with other management requirements for communication, documentation, and quality control through 100% Design and Permitting. The Plan will be revised and maintained over the duration of the project, especially to accommodate scope adjustments or other changes related to funding sequence/sources.

Stakeholder Engagement

The consultant shall facilitate additional meetings and stakeholder engagement efforts as directed by, and in coordination with, the Office project manager. These efforts are intended to keep stakeholders informed of project progress and to increase project awareness and understanding. Support from stakeholders will be a key component for any federal funding programs and the environmental permitting process. Stakeholder engagement activities may include the following:

- LID Board Meetings,
- Public/Stakeholder workshops,
- Site tour with Commissioners and Legislators,
- Commission Meetings,
- Other activities as requested by the Office project manager.

The Consultant shall be responsible for setting and conducting these meetings in coordination with the Office project manager and the Sponsor. The Consultant shall prepare all notices, materials, and the meeting record as needed. The Consultant shall notify the Office project manager in advance of any meetings with the Sponsor.

Agency Coordination

It is anticipated that significant coordination with other agencies will be required for this project going forward. Components of the overall LaPrele Dam project may be funded and/or led by agencies other than the Water Development Program in parallel with this Scope of Work. It will be necessary for the Consultant, in coordination with the Office project Manager, to communicate with any other agencies that get involved to develop Cooperating Agreements and/or Memorandums of Understanding, share project information, and coordinate different project tasks.

This coordination will be especially important regarding the environmental compliance process. The Consultant will develop an agency communication plan which summarizes the input needed for each regulatory agency, proposed contact point, and records documentation of decisions or direction. The communication plan will include major state and federal agencies as part of the environmental compliance efforts.

Task 2. Information Review and Supporting Analysis

Background information was reviewed in the initial stages of this project, including available bedrock and surface geology, and past reports on the dam and reservoir. This information has been summarized in previous technical memos which will be included in the final project notebook for this project. For this task the Consultant shall review, analyze, and summarize additional information not previously summarized for this project. The Consultant will also work with the Sponsor and the Office project manager to review pertinent data and information from the Level I Study and update as necessary.

Water Rights

The Consultant will review and summarize the status of the Sponsor's source and storage water rights associated with the LaPrele Dam and Reservoir. Adjudicated water rights information from the Level I Study will be reviewed, updated, and compiled using the SEO's e-Permit database and/or Tabulation of Adjudicated Water Rights book (TAB book). The Consultant will account for water rights during estimation of the basin runoff volume production included in Task 3.4.

The Consultant will coordinate with the Office project manager and SEO to determine any necessary changes to existing water rights resulting from the preliminary alternatives such as suspended use, rehabilitation, and/or relocation under Wyoming water law. The Consultant will identify requirements of the Modified North Platte River Decree, 2001 and the Platte River Recovery Implementation Program pertaining to the identified preliminary alternatives and consult with the SEO regarding compliance.

Permitting

The Consultant shall review and describe requirements of applicable state and federal permits and clearances that may be necessary for the preliminary alternatives. Permits and clearances to review shall include, but not be limited to, those that fall within the jurisdiction of the National Environmental Policy Act (NEPA), Clean Water Act, Endangered Species Act, Historic Preservation Act, 1964 Wilderness Act, the Fish and Wildlife Coordination Act, the Wyoming State Engineer's Office, the Wyoming Department of Environmental Quality, the State Lands and Investments Board, United States Fish and Wildlife Service, and the Bureau of Land Management or any other agency with jurisdiction that may affect the construction of a project. The Consultant shall identify agency consultations, approximate timelines, and estimate the levels of effort needed to secure the permits for preliminary alternatives and future phases of this project; however, this does not include the permit preparation for any preferred alternative selected by the WWDC and the Sponsor.

Economic Analysis

The Consultant shall conduct an economic and financial analysis for the identified preliminary alternatives developed for this study. This analysis is intended to provide preliminary economic information regarding the cost and benefits to Wyoming and the Sponsor. A benefit-cost analysis would measure benefits and costs of the preliminary alternatives in terms of its equivalent money value to determine if an alternative will be economical for the Sponsor and beneficial to the public. The analysis should include an estimate of direct and indirect benefits as well as benefits to the State, the Sponsor, and to the public interest.

The Consultant will also provide an ability to pay analysis which shall determine conditions and level of funding necessary for the preliminary alternatives. The Consultant shall estimate the economic impacts to water users for preliminary alternatives identified during this study, which may include but are not limited to planning, construction, operation, maintenance, and replacement costs and other pertinent information that could be used to develop a financing plan. The Consultant shall coordinate with the Sponsor to determine anticipated revenues and expenses once an alternative is constructed. The Consultant will work with the Sponsor and the Office project manager to review the Level I Study economic data, acquire relevant data, and update as necessary. The consultant shall also evaluate the impact of financing the priority rehabilitation projects identified in the Level I Study along with the preferred dam rehabilitation alternative.

The Consultant shall identify any potential funding sources available to the Sponsor and the specific information needed to make application to local, state, and Federal agencies including application timelines, eligibility criteria, and program requirements. The Consultant shall also identify any specific NEPA and design criteria required by potential funding partners. Potential sources to be evaluated should include, but are not limited to the WWDC, U.S. Department of Agriculture, U.S. Department of the Interior, U.S. Department of Homeland Security, U.S. Army Corps of Engineers, Wyoming DEQ-WQD Clean Water Act Section 319 and other potential state and federal funding sources. The Consultant will provide this information to the Sponsor and the Office for consideration.

The Consultant shall evaluate whether the project is in the public interest, stipulating if the proposed project functions and services can be served by any person, association or corporation engaged in private enterprise, or if private enterprise has refused to provide the functions and services identified as being required by the proposed project. This information shall be included in the draft and final reports for the project.

Task 3. Alternatives Development

The Consultant shall identify, evaluate, and rank alternative concepts in coordination with the WWDO and Sponsor to determine a preferred alternative which mitigates the risk presented by the LaPrele Dam in its current condition, protects the Sponsor's water rights, and maintains or improves operations. Early in the project, the Consultant shall coordinate with the Office project manager and the Sponsor to develop a list of reasonable alternatives with potential to meet the objectives, a set of comparative criteria, and a ranking system.

The Consultant shall perform four key technical evaluations, listed and described below, to understand the feasibility of alternatives and design options. These include:

- Geotechnical Investigation
- Foundation Evaluation
- Structural Analysis
- Hydrology and Hydraulics (H&H) Analysis

As information is gathered and analyzed, the Consultant shall eliminate infeasible or impractical alternatives from the original list to identify a maximum of two alternatives for further analysis in Task 4. Rankings and elimination of alternatives shall be documented in the Conceptual Design Report.

Geotechnical Investigation

The geotechnical investigation will include the following, each described below:

Geologic Mapping

The Consultant shall review existing data and identify gaps in geologic data pertinent to the project. Based on this information, the Consultant shall conduct an onsite investigation

at the existing dam site, potential new dam site, and in the project vicinity to map geologic features where needed.

Subsurface Site Investigation

The Consultant shall investigate subsurface conditions at the existing dam site and immediately downstream. This investigation may consist of borings and geophysical surveys. The purpose of the investigation is to collect the information necessary to determine properties of subsurface rock and soil (if soil is present), identify an excavation objective for alternative dam foundations, and evaluate potential subsurface seepage to a level of detail sufficient for developing conceptual designs.

The Consultant shall assume that one or more borings with drilling depths of 50-150 feet each may be needed. If soil is encountered, soil samples will be collected at the direction of the onsite Consultant geologist. Once bedrock is encountered, borings will use appropriate coring techniques and extend to a scheduled depth or as modified by the onsite Consultant geologist.

Borings will be logged by the Consultant geologist with adequate data to evaluate recovery, rock quality designation, lithological changes, discontinuity data for rock mass rating, weathering, and strength profiles.

The Consultant shall assume that water for drilling and boring activities, including abandonment, is available on site. The Consultant shall also assume that boring locations are accessible by a tracked or ATV-type drilling rig and pickup truck with minor earthwork using a rubber tire backhoe. The Consultant shall be responsible for permitting the drilling activities and shall assume that only standard drill permitting is required. All borings will be abandoned by the Consultant according to State of Wyoming regulations.

Laboratory Testing

The Consultant shall conduct tests to evaluate properties of rock encountered during drilling operations. These tests will include density, unconfined compressive strength, tensile strength, and direct shear. If significant depth of soil is encountered during drilling, the Consultant shall evaluate water content, Atterberg limits, and provide sieve analysis. Similar tests may also be needed on potential borrow materials identified during the Construction Materials Assessment field investigation. A testing plan will be developed by the Consultant based on boring observations and samples collected.

Geotechnical Investigation Planning

The Consultant shall advance the process for procuring services for the drilling plan identified in the site characterization program. The Consultant shall develop and advertise a procurement package for the drilling work, coordinate and conduct a pre-bid site visit, and collect proposals from qualified drilling contractors.

The Consultant shall conduct initial planning and coordination for geologic mapping of the canyon wall along the anticipated west abutment of the preferred design option; mapping and initial characterization of the fault along the anticipated east abutment; and the geophysical survey plan identified in the site characterization program. This work includes planning and coordination only, not the mapping and survey work itself.

Foundation Evaluation

If deemed feasible and necessary, the Consultant will conduct geophysical surveys to evaluate the depth to bedrock and strength profile using a seismic refraction survey. The geophysical survey would need to be correlated to borings for improved data accuracy.

Based on the data gathered under previous tasks and the geophysical survey, if conducted, the Consultant will evaluate the existing dam foundation condition and risks as well as the foundation conditions for alternative concepts. Evaluations of the foundation will be based on information collected in the Geotechnical Investigation task and will include:

- Kinematic analysis of moveable blocks in the abutments of both the existing dam and the potential new dam,
- Erodibility index of bedrock beneath the channel,
- Development of geotechnical foundation properties,
- Initial identification of a suitable excavation objective (excavation surface) on which the various alternative would be built,
- Seepage analysis through open joints in the foundation, and required foundation treatments including grouting.

Structural Analysis

The Consultant shall develop basic structural designs and dimensions for alternative concepts not eliminated through the Geotechnical Investigation and Foundation Evaluation tasks. The Consultant shall evaluate structural stability of these alternative concepts, including resistance to sliding and overturning and seismic stability. The Consultant will perform other evaluations and checks, or develop other design related information as needed for the Alternative Cost and Constructability task. These evaluations will follow applicable USACE standards, and will provide the basis to estimate the required strength and other engineering properties of the structures.

The Consultant shall develop preliminary sizing of ancillary structures such as outlet works, auxiliary spillway, and stilling basin/energy dissipation structures to inform the cost and schedule. Sizing of these structures will be guided by the Hydrology and Hydraulics Analysis task.

Hydrology and Hydraulics (H&H) Analysis

The Consultant shall characterize the catchment basin hydrology above the dam and develop design flood events. The Consultant shall use design flood events to evaluate performance of the existing dam relative to applicable requirements and to guide conceptual designs for alternatives.

This work shall be subject to review and approval by the Wyoming SEO, and the Consultant shall also consider analysis and design requirements of potential funding agencies.

Hydrologic Assessment

The Consultant shall review existing hydrologic data, including past reports and historic streamflow, and evaluate the basin runoff volume production above the reservoir. The Consultant shall perform a flood hydrology study for the watershed in accordance with current Wyoming Dam Safety guidelines as deemed appropriate to determine high-frequency (up to 100-year recurrent events) hydrology and develop design flood events. The Consultant shall incorporate the State of Wyoming PMP Evaluation GIS Tool to develop the PMF.

Spillway and Outlet Works Hydraulic Analysis and Conceptual Design

The Consultant shall evaluate the flood routing performance of the existing auxiliary spillway and outlet works in accordance with current Wyoming Dam Safety guidelines. The Consultant shall estimate the potential reduction to reservoir storage due to sedimentation and update bathymetry accordingly for reservoir routing modeling. The Consultant shall identify freeboard for design flood events, the threshold flood for which overtopping of the dam initiates, and the maximum depth and duration of overtopping flows during the PMF. The Consultant shall also evaluate performance of the existing dam for irrigation operations and meeting drawdown requirements for safety. The Consultant shall identify limitations to dam operations caused by features downstream. The Consultant shall identify deficiencies of the existing auxiliary spillway and outlet works that must be overcome by any potential alternatives to rehabilitate the dam in-place.

The Consultant shall perform evaluations of flood routing, irrigation operations, and drawdown to guide development of alternative concepts in accordance with current Wyoming Dam Safety guidelines, needs of the Sponsor, and requirements of potential funding agencies.

Analysis of Construction Floods

The Consultant shall coordinate with the Office project manager, the Sponsor, and the SEO to develop the likely conditions and limitations for the existing dam and reservoir during construction, including a maintained water surface elevation (WSE) and maximum WSE. The Consultant shall evaluate high frequency floods and seasonal flows through the reservoir during construction conditions to evaluate operational requirements. The analysis will consider construction flow diversion and bypass as well as sequencing, schedule and related construction cost and risk.

Reservoir Survey – Phase 1

The Consultant shall perform a bathymetric survey of the LaPrele Reservoir. The bathymetric survey shall be conducted using a Single Beam Echo Sounder sonar system

(or equivalent method) when the reservoir is at or near its maximum water surface elevation during 2021, anticipated to occur during the month of May.

Task 4. Alternative Cost and Constructability

The Consultant shall develop cost estimates and assess constructability for the conceptual design alternatives remaining after Task 3 is completed, which shall be no more than two. Results of the cost and constructability assessment and evaluation will be included in the Conceptual Design Report to be prepared under Task 5.

The Consultant shall identify potential borrow sites near the project area based on desktop review and existing data for construction materials such as RCC and conventional concrete aggregate, filter and drain materials, rip rap and bedding, or roadway materials. The Consultant shall evaluate potential borrow sites during the site visit through the assessment of exposed quarry or other colluvial/alluvial aggregate; no test pits are included in the field investigation. The Consultant may also identify commercial sources as needed, through the evaluation of regional commercial quarries or pits that may have been used in the past.

The Consultant shall prepare preliminary construction cost estimates and life cycle cost analyses based on the conceptual design drawings for each of the remaining alternatives. This task will involve calculating material and work quantities and estimating construction costs for the proposed construction and preparing an engineer's Opinion of Probable Project Costs (OPPC) based on local material supplier price data, experienced judgment, data from R.S. Means' Heavy Construction Cost Data, other industry standard sources, and price data developed by the Consultant for previous design/construction projects. The level of accuracy of the cost estimates is expected to be in the range of an AACE Class 5 and for screening purposes only.

In addition to construction costs, the Consultant shall prepare and include a draft set of itemized project "non-contract" costs such as studies, design engineering, permitting, mitigation, land acquisition, legal, access, right of ways, operation, maintenance and replacement, and financing. In addition, the Consultant shall estimate costs for water management during and after construction. The estimate will include unit and lump sum prices of the required construction items. The cost estimate will include estimated overhead, profit, taxes, and fees for cost allowances. The Consultant shall prepare the OPPC in the WWDC Level III format found in Attachment A3, C.3.

The OPPC should be based on an estimated mid-point of construction. The Consultant will propose and work with the Office project manager to select an appropriate inflation factor that will be applied to the project's current year total cost and projected into the future per the schedule of activities and time-lines developed herein.

The OPPC and related AACE Class 5 work will be refined for the preliminary preferred alternative by developing a Work Breakdown Structure (WBS) and taking some aspects of the estimate to a resource and productivity-based estimate. This WBS will be included in the final technical memo for this task.

Task 5. Site Characterization

In order to advance the design of the preferred design option for LaPrele Dam, a significant amount of site characterization is needed. This work is expected to be completed in multiple phases, such that the information from one may be used to inform the requirements of the next. The following subtasks identify the work to be completed for Phase 1.

A Geotechnical Data Report will be developed to present the results of this task and will include methodology, geologic cross sections, boring logs, figures, evaluation results and recommendations for subsequent phases.

Field Geologic Mapping

Geologic mapping will be completed in the field to further understand the west canyon wall downstream from LaPrele Dam, representing the potential left abutment of the preferred design option. The bedrock above the upper left abutment is not accessible by foot and will require rope access to achieve adequate detailed mapping, data collection and to scout possibilities for a needed Phase 2 boring location that would have extremely difficult access. This investigation will require a SPRAT level 3 certified person on site to complete the job hazard analysis, access plan, rescue plan and set rigging for the geologists.

There is an inactive fault running through the east canyon wall where the potential right abutment of the preferred design option would be located. Existing published maps do not provide adequate detail of this inactive fault and are incongruent with preliminary observations of the bedrock outcrops along the LaPrele Creek valley. The Consultant will investigate the fault to better locate and understand its characteristics.

The field mapping will also include investigation of potential construction material sources near the project site for use as aggregate and/or riprap. Samples will be collected for preliminary qualification and if deemed suitable, these sources may be further investigated in later phases of work.

Geophysical Survey

The consultant shall conduct geophysical surveys of the potential footprint of the preferred design option for LaPrele Dam to evaluate the depth to bedrock and strength profile using a seismic refraction survey. The geophysical survey shall be correlated to borings when possible for improved data accuracy. The geophysical surveys will enable development of an accurate geological model of the site and advancement of the preferred design option. Up to six seismic refraction lines may be required, including within the LaPrele Creek channel. The geophysical survey must be performed when irrigation releases from the dam have been shut off.

Drilling and Downhole Surveys

The Consultant shall procure services for drilling up to nine boreholes for this phase of site characterization, including up to 1,800 feet of drilling. Up to eight boreholes will be drilled to

characterize the potential foundation of the preferred design option for LaPrele Dam, and up to four of these will be located within the LaPrele Creek channel. One borehole will be drilled about a quarter mile downstream from the existing dam to evaluate the suitability of the Casper Formation sandstone as a potential aggregate material.

If soil is encountered, soil samples will be collected at the direction of the onsite Consultant geologist. Once bedrock is encountered, borings will use appropriate coring techniques and extend to a scheduled depth or as modified by the onsite Consultant geologist. Borings will be logged by the Consultant geologist with adequate data to evaluate recovery, rock quality designation, lithological changes, discontinuity data for rock mass rating, weathering, and strength profiles.

The Consultant shall assume that water for drilling and boring activities, including abandonment, is available on site. The Consultant shall also assume that boring locations are accessible by a tracked or ATV-type drilling rig, but access will require minor earthwork. The Consultant shall be responsible for permitting the drilling activities and shall assume that only standard drill permitting is required. All borings will be abandoned by the Consultant according to State of Wyoming regulations.

All of the boreholes shall be cored and logged. Up to eight of the boreholes used to characterize the potential foundation of the preferred design option will have water pressure testing conducted and will be surveyed by acoustic and/or optical televiewer, and up to seven will also be surveyed with sonic suspension logging.

Lab Testing

The Consultant shall conduct tests to evaluate properties of rock encountered during drilling operations. These tests will include density, unconfined compressive strength, tensile strength, and direct shear. If significant depth of soil is encountered during drilling, the Consultant shall evaluate water content, Atterberg limits, and provide sieve analysis. Similar tests will also be needed on potential borrow materials identified during the Field Geologic Mapping. A testing plan will be developed by the Consultant based on boring observations and samples collected.

Reservoir Survey – Phase 2

The Consultant shall perform a topographic survey around the LaPrele Reservoir to supplement the bathymetric survey identified in Task 3. Appropriate survey technologies could include ground-based topographic surveys, unmanned drone with LiDAR, or other technologies that produce a 3D point cloud such as photogrammetry. The survey shall include sufficient data for creating a shoreline surface to combine with the bathymetric survey for use in estimating volume of the reservoir below the emergency spillway elevation. This data shall be post-processed into a format compatible with typical GIS software. The survey shall be conducted when the reservoir is at or near its minimum water surface elevation during 2021, anticipated to occur during the month of August.

Task 6. Design Advancement

The Consultant shall advance the preferred design option for LaPrele Dam using information both existing and to be collected during the Site Characterization task. This work may require early design iterations; as work progresses, the Consultant shall communicate with the Office project manager and document decisions regarding design criteria. A number of design decisions are anticipated that will be documented in a decision log. Meeting note distribution and the decision log will be used to verify that the decisions are fully understood and agreed to by all parties. The decision log will be included in the final project notebook. The Consultant shall produce design information and plan set documents on the order of a 10 percent design.

Basis of Design and Design Standards

At this point in the project, it is uncertain which federal agency will lead the project and determine the standards for design. The Consultant shall identify the design requirements of agencies that are most likely to lead the project and note significant differences between agencies. Designs may advance where different agency requirements agree, but the Consultant shall coordinate with the Office project manager regarding significant discrepancies to potentially advance using the most stringent. It will be important to identify the appropriate design criteria as early as possible to prevent backtracking once the lead federal agency is determined. Design requirements will also be determined by site conditions, and shall be updated as needed using information developed in the Site Characterization task.

Hydrologic Routing Analysis and Hydraulic Design

The Consultant shall advance the hydraulic structure designs for the preferred option. The Consultant shall 1) incorporate updated site hazards, design criteria, and site characterization information, 2) confirm spillway and outlet works capacity by routing several design flood events and typical conservation storage release schedules through the reservoir, and 3) advance the configuration optimization in order to achieve the desired level of conceptual cost estimating accuracy, provide appropriate information into the environmental compliance process, and set the configuration of these structures in a manner that is suitable for initiation of final design. The following subtasks will be completed to support advancing the design of the hydraulic structures:

Spillway

The spillway design will be updated based on reservoir routing of a PMF inflow hydrograph, and at least two additional spillway outflow events that would occur more frequently. The more frequent spillway flow events provide design parameters for a structural energy dissipation structure, while the PMF event analysis evaluates overall dam stability and integrity in an extreme event. Alternative spillway locations will be considered based on site characterization results, constructability, and construction risk considerations. Energy dissipator design analysis will include more frequent events as well as extreme events in order to determine the most economical spillway terminal structure for the anticipated flow frequency and magnitude. Tailwater levels will be determined by means of simplified one-dimensional modeling of the downstream channel and floodplain.

Outlet Works

The outlet works system for the preferred design option will include provisions for construction diversion, flood operations, normal reservoir releases for water supply and environmental purposes. The location of the outlet works system will be evaluated based on the results of site characterization work and the terminal spillway structure configuration selected. If appropriate, configurations at the base of both the right and left abutments will be developed and evaluated to identify the preferred location from a cost, accessibility, constructability and construction risk standpoint.

The Consultant shall consider the LaPrele Irrigation District's needs and capabilities in the conceptual design configurations for the outlet system. These considerations shall include the potential for remote operation, and the likely need for simplicity and long-term operational reliability without manual intervention, given the remote location of the dam.

Construction Diversion

The Consultant shall consider construction diversion of normal reservoir releases from the existing dam, and flood flows from the existing reservoir in the conceptual design of the new dam. Routing effects through the existing reservoir provide an important risk management benefit to the new dam site and limit the required construction diversion. A construction diversion capacity will be developed to provide an estimated level of protection in excess of a 50-year event with consideration for the condition of the existing dam as part of the construction risk and avoid compromising the existing water level restrictions to the extent possible.

Under this task, construction diversion requirements will be developed to a conceptual level of design and the Consultant shall include input and discussions with appropriate Regulatory personnel (e.g. SEO) to verify that such floods would meet appropriate construction risk management requirements. Once the required diversion capacity is identified, the diversion and flood control outlet configuration will be developed.

Foundation Design

Using concepts from the Preliminary Alternatives Assessment along with results from the Site Characterization task, the Consultant shall perform conceptual level analyses and update design requirements for the following components of the preferred design option for LaPrele Dam:

- Excavation Objectives
- Foundation Treatment Requirements
- Dewatering Design
- Excavation Stability and Design
- Abutment Foundation Stability

Structural Analysis Model

The Consultant shall prepare a representative 2D structural analysis model that incorporates appropriate information from the Site Characterization task. The Consultant shall develop and evaluate the model, including engineering properties for the dam and foundation to be used in structural modeling. The Consultant shall incorporate allowance for modeling non-linear material properties at the foundation and dam contact. This task includes model development only; the structural analysis for feasibility design and optimization will be completed in future project phases.

Civil Site Works

The Consultant shall develop conceptual level designs for additional infrastructure focused on the civil site works for the project area. This will include road redesign/realignment near the dam site where not previously addressed by the Sponsor. Results of the Site Characterization task will be used to refine the alignment, if needed. The bridge requirements across LaPrele Creek will also be evaluated and suitable concepts will be identified.

Plan Set – 10 Percent

The Consultant shall produce a 10 percent level plan set presenting the site layout, dam plan view, sections of the dam, spillway and outlet works concepts, road alignments, construction staging areas and other appropriate conceptual design details. These drawings will be preliminary and will be updated in the next phase of design.

Construction Materials Evaluation

The Consultant shall use information collected and developed under the Site Characterization task to conduct a construction materials source evaluation. The Consultant shall develop recommendations and conceptual design guidance for the following materials:

- Roller Compacted Concrete (RCC) aggregate
- RCC cementitious materials and additives
- RCC mix evaluation program
- Conventional concrete
- Riprap
- Roadway materials

Cost and Constructability

The Consultant shall refine previously developed cost estimates and constructability assessment for the preferred design option for LaPrele Dam, based on design and analysis performed for each of the design components in this task

Task 7. Discretionary Task

The Consultant shall place \$150,000 in this discretionary task. The task is to allow for unforeseen changes in scope of work, or anticipated budget, or as new issues are discovered as the project develops. The Consultant and Office project manager will agree on any work to be accomplished under this task and the cost of the work. No work will be initiated, or funds spent for this task, without direct approval from the Office project manager.

Task 8. Conceptual Design Report

The Consultant shall prepare a draft Conceptual Design Report describing and summarizing project work. The Consultant shall include conceptual design figures to aid in describing the configuration, components of work, and the evaluation of alternative technical and financial viability. The conceptual design figures shall include development of all primary anticipated project components including existing site conditions, a plan view, section and details for the main dam, spillway, and outlet works along with other construction details (e.g. – limits of construction, staging areas, etc.). Design drawings may include details related to foundation excavation and treatment or modifications to existing facilities.

The Consultant shall submit to the Office seven (7) hard copies of a draft report describing the results of all work completed through Phase II, no later than June 1, 2022. Seven (7) CD, DVD, or USB drive copies containing the draft report in a text-recognized Adobe Acrobat (pdf) format will also be provided. The PDF version will be completely assembled into one standalone file, and shall be exactly the same version as the hard copy. Each CD, DVD, or USB shall be labeled with the project name, contents of the media and date (month and year only). The project Sponsor shall be provided a copy of this draft report for their review. Further requirements for deliverables shall be found in Phase III Task 6 and will apply to this Task.

PHASE III

Phase II of the LaPrele Irrigation District Rehabilitation, Level II Study addressed the Phase I recommendation to investigate options for replacing or performing major rehabilitation to the LaPrele Dam. After developing and ranking conceptual design options, it was determined that the preferred design option is a new roller compacted concrete (RCC) dam constructed immediately downstream of the existing dam. Phase II work then shifted to further characterizing site conditions and advancing the RCC dam design to appraisal level. Phase III of the Rehabilitation, Level II Study will continue the site characterization process and provide analysis of the appraisal level RCC dam design to facilitate design refinements in future work.

Task 1. Project Management

Project management activities include directing and managing project work and subconsultants, tracking project financials, maintaining the project schedule, and managing changes to scope, schedule, and budget as needed. The Consultant is responsible for reviewing subconsultant work to provide quality assurance and quality control. The Consultant shall continue advancing the

Project Management Plan, Stakeholder Engagement, and Agency Coordination efforts defined in Phase II as needed and directed by the Office Project Manager.

Project Meetings

Project planning and update meetings between the Consultant and WWDO staff (in-person, teleconference, or online) will be conducted as necessary for the coordination of project activities and to keep the Sponsor and all affected parties informed of project progress. At a minimum, a monthly progress meeting or teleconference will occur between the Consultant and Office project manager. The Consultant shall notify the Office project manager in advance of meetings with the Project Sponsor. No meetings shall be conducted without approval in advance by the Office project manager.

Public Meetings

The Consultant shall be prepared for a public meeting for the Report Presentation, held after the Consultant has received comments on the Draft Report from the Sponsor and Office and incorporated any necessary edits. This meeting shall also serve as a public hearing, with WWDO personnel serving as the hearing officer. The script for the hearing will be developed by the Office project manager and shall include the question as to whether there is a private entity interested in providing the proposed project functions and services in lieu of the Sponsor. The WWDO is responsible for publishing a legal notice of the meeting in a statewide newspaper, once each week for three (3) weeks prior to the hearing; and in the local publication up to three (3) times prior to the hearing. The Consultant shall also plan to attend a meeting in Casper or Cheyenne to present the results to the Commission if requested by the Office project manager.

The Consultant shall be responsible for setting up and conducting the public meetings in coordination with the Office project manager and the Sponsor. Information and materials to be presented at the public meeting shall be developed by the Consultant after consultation with the Office project manager to ensure adherence to WWDO established policies and guidelines. The Consultant shall be responsible for developing a record of the meeting which shall become an appendix in the final report. The record will include: any formal and/or informal notices; an affidavit of publication from the legal notice (public hearings only) as obtained from the WWDO; any materials presented or handed out at the meeting; a record of attendance; any written comments, statements, or exhibits received; recorded testimony, or a memorandum summarizing the views and comments presented at the meeting; and other pertinent data.

Task 2. Site Characterization

This task includes the next phase of site characterization activities, which will build on the data collected and developed in the previous phase. Additional phases of site characterization may be needed beyond this scope in order to finalize the preferred design option.

A Geotechnical Data Report will be developed to present the results of this task and will include methodology, geologic cross sections, boring logs, figures, evaluation results and recommendations for subsequent phases, as needed. The Geotechnical Data Report will not

include the Construction Material Testing and Mix Design work, which will be documented separately.

Geophysical Survey

The consultant shall conduct additional geophysical surveys of the potential footprint of the preferred design option for LaPrele Dam to evaluate the depth to bedrock and strength profile using a seismic refraction survey. The consultant shall also conduct geophysical surveys in the area of the proposed upper access road for the preferred design option. The geophysical survey lines shall be correlated to borings when possible for improved data accuracy. The geophysical surveys will enable refinement of the geological model developed in the previous phase and refinement of the preferred design option in future work. Multiple seismic refraction lines will be required, including within the LaPrele Creek channel.

Drilling and Downhole Surveys

The Consultant shall procure services for drilling up to thirteen boreholes for this phase of site characterization, including up to 2,350 feet of drilling. Up to eight boreholes will be focused at the dam site, including up to six boreholes to further characterize the abutments and foundation of the preferred design option for LaPrele Dam, and up to two boreholes to characterize the anticipated spillway plunge pool impact zone.

The other boreholes will be for evaluating potential aggregate material sources for construction. Up to three boreholes will be drilled about a quarter mile downstream from the existing dam to evaluate the suitability of limestone at that location, and up to two additional boreholes will be drilled at a location identified off site to evaluate the suitability of a potential gneiss aggregate source. The boreholes for potential aggregate materials will only be drilled if access permission and applicable permits can be secured. This will be coordinated with the Office project manager.

The Consultant shall assume that water for drilling and boring activities, including abandonment, is available for work at the dam site, but water will likely need to be hauled for the off-site gneiss borings. Two of the dam site boreholes will be located up on the west canyon wall and will require specialized access, likely with helicopter support. The Consultant may assume that all other borehole locations are accessible by a tracked or ATV-type drilling rig, but access up the creek channel will require minor earthwork. The Consultant shall be responsible for permitting the drilling activities and may assume that only standard drill permitting is required. All boreholes will be abandoned by the Consultant according to State of Wyoming regulations.

The Consultant shall core and log all boreholes, and all will have acoustic and/or optical televiewer surveys conducted, including the boreholes for evaluating potential aggregate materials. The six boreholes for characterizing the foundation and abutments will have sonic suspension logging conducted, and five of those, including the two on the west canyon wall, will have water pressure testing conducted.

Foundation Analysis Lab Testing

The Consultant shall conduct tests to evaluate properties of rock encountered during drilling operations for characterization of the foundation and abutments. These tests will include density, unconfined compressive strength, tensile strength, and direct shear. If significant depth of soil is encountered during drilling, the Consultant shall evaluate water content, Atterberg limits, and provide sieve analysis. A testing plan will be developed by the Consultant based on borehole observations and samples collected.

Construction Material Testing and Mix Design

A more rigorous testing program will be required for samples from the potential aggregate materials. The Consultant will qualify the aggregate material properties, then develop and test mixes with these materials to evaluate their suitability for construction, especially as roller compacted concrete aggregate. The testing data will support the Structural Modeling task and provide the basis for refining cost estimates under future work. Testing of mix designs using commercial aggregate sources will occur under future work. The construction material testing and mix design will be documented separately from the Geotechnical Data Report with a specific technical memorandum.

Task 3. Design Analysis

Work under this task includes analysis of the Appraisal Level design developed in Phase II and will provide the basis for refinements of the design under future work.

Structural Model

The Consultant shall update the structural model developed in Phase II, incorporating data from the Phase II seismic hazard evaluation for a series of initial structural analyses of the current appraisal level dam design. The updated model will be used to evaluate earthquake loadings on the dam and identify conditions that may cause cracking. These evaluations may indicate the need for design revisions, and specific attention will be paid to the potential need to curve the RCC dam alignment. Such a configuration, similar to an arch dam, would transfer seismic loads into the dam abutments. The impact of a curved configuration on the potential for cracking in the dam under earthquake loading will be qualitatively assessed. Curving the section alignment may not only improve dam performance during large earthquakes, but also offer the opportunity for a more efficient, optimized cross section design. Results of the analysis will be documented in a technical memorandum, and any recommended design modifications must be developed to a level sufficient for incorporating into the next task, the physical scale hydraulic model.

Physical Scale Hydraulic Model

The Consultant shall construct a scale model of the appraisal level dam design developed in Phase II, incorporating any necessary modifications identified in the structural model task. The model will include the proposed dam and its hydraulic features, a portion of the surrounding topography, the reservoir upstream, and the stream channel downstream. This scale model will facilitate

accurate analysis of the dam's performance under a range of flood conditions and provide a basis for refinements to the appraisal level design.

Initial testing of the physical scale model will include qualitative evaluation of the appraisal level design. If performance does not meet expectations, then the model geometry will be modified to improve performance, and testing will continue until qualitative observations are determined to be satisfactory. Analysis will then proceed with more detailed measurements made across a range of flows to document the plunge pool progression and characteristics and hydraulic loading on the structure. The physical scale hydraulic model will verify the proposed dam, spillway, and overtopping crest design and their flow characteristics; verify the plunge pool and scour limits and their effects; and accurately determine a flow rating curve for the spillway and overtopping shoulders.

The Consultant shall document the modeling results in a model study report, collated from model data and observations and documenting model performance. Intermediate deliverables may include meeting and witness testing notes, preliminary modeling results summaries, and other material as needed to coordinate the future design refinement work related to the physical modeling and hydraulics.

The Consultant shall also evaluate the need for collecting additional lidar covering the reservoir flood pool, in coordination with the Office project manager. This may be needed to supplement the lidar collected under previous work which was focused on bathymetry of the operating pool for quantifying sedimentation. Lidar covering the flood pool, up to the peak Probable Maximum Flood water surface elevation, would provide for refinement of reservoir routing modeling. If an increase in storage volume is to be considered, the additional flood pool area may need to be included with additional lidar.

Task 4. Environmental Investigations

The Consultant shall initiate environmental investigations and field surveys that will be needed for the future NEPA process, which is not included in this scope. Before planning new work for this task, the Consultant shall coordinate with the Office project manager and the Sponsor to determine the extent of applicable environmental investigations that have already taken place at or near the project site. The Consultant shall integrate and complement previous investigations with the new work, which shall be focused on the area potentially impacted directly by the preferred design option.

The Consultant shall also communicate with appropriate agencies as needed, in coordination with the Office project manager, for guidance on likely NEPA requirements that should be addressed with these investigations. As the design and project plan develop under future work, additional impacted areas such as construction materials source areas may be identified and require expanded environmental investigations.

Biological Resources Surveys

The Consultant shall conduct a field review for habitat for threatened, endangered and candidate species. During the field review, the Consultant shall also survey for any raptor nests within one half mile of the project area. The Consultant shall document the overall habitat assessment in a technical memorandum.

Aquatic Resources Delineation

The Consultant shall conduct a field aquatic resources inventory to confirm the presence and boundaries of wetlands and other waters of the U.S within the study area. The aquatic resources inventory shall conform to the US Army Corps of Engineers (USACE) current methodology. The Consultant shall also conduct a functional assessment of the delineated wetlands and a stream assessment. The results shall be summarized in an aquatic resources inventory report.

Cultural Resources Surveys

The Consultant shall delineate an area of potential effects (APE) based on project parameters and preliminary communications with applicable agencies, generally including areas where ground disturbance or new inundation is anticipated. The Consultant shall conduct an archaeological survey meeting standards of the Wyoming State Historic Preservation Office (WY SHPO) within the APE to identify buildings, structures, and archaeological sites that are listed in or eligible for listing in the National Register of Historic Places (NRHP).

Based on preliminary research, LaPrele Dam has not been previously evaluated for potential eligibility for NRHP listing. Therefore, the Consultant shall conduct fieldwork and reporting to document the LaPrele Dam and any associated features, and provide a recommendation of NRHP eligibility for the resource(s). Additional historic buildings, structures, and archaeological sites may be identified and also require documentation and recommendations of eligibility.

The Consultant shall summarize the results of historic and archaeological surveys in a cultural resources survey report that includes recommendations of NRHP eligibility for identified cultural resources. The report shall be suitable for submittal to the WY SHPO as an attachment to the federal agency Section 106 of the National Historic Preservation Act consultation correspondence at the appropriate time.

Task 5. Discretionary Task

The Consultant shall place \$50,600 in this discretionary task. The task is to allow for unforeseen changes in scope of work, or anticipated budget, or as new issues are discovered as the project develops. The Consultant and Office project manager will agree on any work to be accomplished under this task and the cost of the work. No work will be initiated, or funds spent for this task, without direct approval from the Office project manager.

Task 6. Phase III Report

The Consultant shall submit to the Office seven (7) hard copies of a draft report describing the results of all work completed through Phase III, no later than June 1, 2023. Seven (7) CD, DVD, or USB drive copies containing the draft report in a text-recognized Adobe Acrobat (pdf) format will also be provided. The PDF version will be completely assembled into one standalone file, and shall be exactly the same version as the hard copy. Each CD, DVD, or USB shall be labeled with the project name, contents of the media and date (month and year only). The project Sponsor shall be provided a copy of this draft report for their review.

After incorporation of the Office's and the Sponsor's review comments on the draft report, the Consultant shall submit one (1) final report and one (1) executive summary in hard copy along with one (1) CD or DVD or USB drive containing the final report and executive summary in a text-recognized Adobe Acrobat (pdf) format to the Office 1 to 2 weeks prior to the final deadline for final comparison purposes. The pdf version shall be completely assembled into one stand-alone file and shall be exactly the same version as the hard copies. Any discrepancies discovered by the Office project manager between the hard copy and electronic copy during this final comparison are the responsibility of the Consultant to correct.

Upon completion of the final quality assurance process by the Office project manager, WRDS will assign an URL for the online posting of the final report and the Consultant shall submit all final documents and materials, to the Office on or before September 1, 2023. These final documents and materials, shall include:

Twelve (12) hard copies of the final report and twelve (12) hard copies of the executive summary. The executive summary shall outline the purpose, findings, recommendations and configuration of the project, and shall include detailed cost estimates. The summary should not exceed ten (10) pages. Any final reports which have been submitted in three-ring notebook format shall have spine labels clearly identifying the project, Consultant and date.

Four (4) CD, DVD, or USB drive copies containing the final report and executive summary in a text-recognized Adobe Acrobat (pdf) format will be provided. The pdf version will be completely assembled into one stand-alone file and shall be exactly the same version as the hard copy. Each CD, DVD, or USB drive shall have a hard copy table of contents attached.

Two (2) CD, DVD, or USB drive copies containing the final report and executive summary in original formats (Word, Excel, etc.) and in a text-recognized Adobe Acrobat (pdf) format. The pdf version will be completely assembled into one stand-alone file. All electronic files shall be exactly the same version as the hard copies. Each CD, DVD, or USB shall be labeled with the project name, contents of the media and date (month and year only).

Three (3) CD, DVD, or USB drive copies of the hydrologic/hydraulic model(s) and all associated files shall be provided if applicable. The files shall create a working model that is fully functional and can be modified. In addition to the above, one (1) electronic copy of the hydraulic model project file and all associated files will be included in the project notebook. Each CD, DVD, or USB shall be labeled with the project name, contents of the media and date (month and year only).

One (1) project notebook containing the working files used in this project will be provided. The project notebook files shall include descriptions of the assumptions and methodologies used in the project analysis, and shall include the 2019 LaPrele Dam Buttress Inspection and Analysis, and any products from the LaPrele Irrigation District Rehabilitation Level II (Rockfall Hazard Analysis) that are completed and have not been documented previously in a technical memo or report. The notebook shall be organized in such a way as to allow replication of the steps, calculations, and procedures used by the Consultant to reach the conclusions described in the final report. The preferred format for the project notebook is digital, provided on a CD, DVD, or USB drive. Each CD, DVD, or USB shall be labeled with the project name, contents of the media and date (month and year only). Any project notebooks which have been submitted in three-ring notebook format shall have spine labels clearly identifying the project, Consultant and date.

If any wells are drilled, chip trays or vials of all washed well drilling cuttings shall be submitted along with their documentation.

ATTACHMENT B2
HOURLY RATE AND REIMBURSABLE EXPENSES
PRICE SCHEDULE 2022

RESPEC COMPANY, LLC

Hourly Labor Billing Rate

Labor Category	I	II	III	IV	V	VI
Principal Consultant	\$220.00	\$230.00	\$240.00	\$250.00	\$260.00	\$270.00
Resident Consultant	\$210.00	\$220.00	\$230.00	\$235.00	\$240.00	\$245.00
Senior Staff Scientist	\$190.00	\$195.00	\$200.00	\$205.00	\$210.00	\$215.00
Senior Staff Engineer	\$185.00	\$190.00	\$195.00	\$200.00	\$210.00	\$220.00
Senior Staff Geologist	\$185.00	\$190.00	\$195.00	\$200.00	\$210.00	\$220.00
Staff Consultant	\$170.00	\$175.00	\$180.00	\$190.00	\$195.00	\$200.00
Water Resource Scientist	\$150.00	\$155.00	\$160.00	\$165.00	\$170.00	\$175.00
Project Engineer	\$150.00	\$155.00	\$160.00	\$165.00	\$170.00	\$175.00
Project Analyst	\$145.00	\$150.00	\$155.00	\$160.00	\$165.00	\$170.00
Project GIS Analyst	\$145.00	\$150.00	\$155.00	\$160.00	\$165.00	\$170.00
Project Ecologist	\$145.00	\$150.00	\$155.00	\$160.00	\$165.00	\$170.00
Project Biologist	\$145.00	\$150.00	\$155.00	\$160.00	\$165.00	\$170.00
Project Geologist	\$145.00	\$150.00	\$155.00	\$160.00	\$165.00	\$170.00
Staff Engineer	\$130.00	\$135.00	\$140.00	\$145.00	\$150.00	\$155.00
GIS Developer	\$120.00	\$125.00	\$130.00	\$135.00	\$140.00	\$145.00
Staff Analyst	\$120.00	\$125.00	\$130.00	\$135.00	\$140.00	\$145.00
Staff Scientist	\$120.00	\$125.00	\$130.00	\$135.00	\$140.00	\$145.00
Staff Geologist	\$120.00	\$125.00	\$130.00	\$135.00	\$140.00	\$145.00
Watershed Scientist	\$115.00	\$120.00	\$125.00	\$130.00	\$135.00	\$140.00
GIS Analyst	\$115.00	\$120.00	\$125.00	\$130.00	\$135.00	\$140.00
Engineer	\$110.00	\$115.00	\$120.00	\$125.00	\$130.00	\$135.00
Ecologist	\$105.00	\$110.00	\$115.00	\$120.00	\$125.00	\$130.00
Biologist	\$105.00	\$110.00	\$115.00	\$120.00	\$125.00	\$130.00
Botanist	\$105.00	\$110.00	\$115.00	\$120.00	\$125.00	\$130.00
Analyst	\$105.00	\$110.00	\$115.00	\$120.00	\$125.00	\$130.00
Geologist	\$105.00	\$110.00	\$115.00	\$120.00	\$125.00	\$130.00
Rangeland Scientist	\$105.00	\$110.00	\$115.00	\$120.00	\$125.00	\$130.00
Scientist	\$95.00	\$100.00	\$105.00	\$110.00	\$115.00	\$120.00
Engineering Technician	\$90.00	\$95.00	\$105.00	\$115.00	\$120.00	\$125.00
AutoCAD Technician	\$95.00	\$105.00	\$105.00	\$110.00	\$120.00	\$130.00
GIS Technician	\$85.00	\$90.00	\$95.00	\$100.00	\$110.00	\$120.00
Support Staff	\$75.00	\$80.00	\$90.00	\$95.00	\$100.00	\$110.00
Technical Editor	\$75.00	\$80.00	\$90.00	\$95.00	\$100.00	\$105.00
Seasonal Technician	\$65.00	\$70.00	\$75.00	\$80.00	\$85.00	\$90.00
Engineering Intern	\$60.00	\$65.00	\$70.00	\$75.00	\$80.00	\$85.00

ATTACHMENT B2

Amendment Five to the LaPrele Irrigation District Rehabilitation, Level II Study Consultant Contract
between the Wyoming Water Development Commission and RESPEC COMPANY, LLC

Reimbursable Expenses

Airfare..... @ Cost	In-house B&W Copies..... \$0.10/copy
Mileage..... \$0.585/mile	In-house Color Copies..... \$1.00/copy
Meals..... \$59.00/day/person	In-house B&W Plotter..... \$5.00/plot
Lodging..... @ Cost	In-house Color Plotter..... \$10.00/plot

All other direct costs such as subconsultants, communications, equipment rental, materials, laboratory services, shipping, and reproduction will be charged at cost. A copy of receipts will be provided for all expenses billed “at cost”.

ATTACHMENT B2

Amendment Five to the LaPrele Irrigation District Rehabilitation, Level II Study Consultant Contract
between the Wyoming Water Development Commission and RESPEC COMPANY, LLC

Auth ID: BPY103703
Contact ID: 780917010602
Use Code: 922

**U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
AMENDMENT
FOR**

FS-2700-23 (v. 10/09)
OMB No. 0596-0082

SPECIAL-USE AUTHORIZATION

Amendment#: 1

This amendment is attached to and made a part of the **BPY103703** special use authorization for **DAM, RESERVOIR** issued to **WYOMING WATER DEVELOPMENT OFFICE** on 05/18/2018 which is hereby amended as follows:

- **Completion of dam construction will conclude, including removal of all crew camps and equipment by December 31, 2022.**
 - o No work will take place from **Saturday June 18th through Sunday June 19th** to allow for public access and use of the area. A representative from NW Construction, State of Wyoming, or Santec Corporation will be present during this closure to support Forest Service efforts.
 - o WWDC must conduct a safety review and check in with USFS By **July 20th** to determine if public access is achievable. If achievable, An access plan will be created for the remainder of the project. The plan must be submitted by the WWDC to the USFS permit administrator Kara Purser kara.purser@usda.gov by **August 1st**
 - o Backfilling operations are set to be completed within the month of August. Exact date to be determined during public access discussions
- **Crew camps will be limited to occupying a maximum of (3) three sites at the Sacajawea Campground on the Big Piney Ranger District.**
 - o The sites will be predetermined by district personnel.
 - o The current rate must be paid each night for each campsite occupied.
 - o Camps will be maintained in a neat and orderly appearance at all times.
 - o All campground rules must be followed including, limit of 2 vehicles (trailers count as a vehicle) per site and no ORV's in campground.
 - o A port-o-john must be furnished at the camp location by contractor to serve the crew. If a water trailer/water buffalo is desired, the contractor must furnish their own. (This will not count against vehicle #'s allowed in site)
 - o The Forest Service will inspect all campsites upon completion of the project.
- **Cleaning or washing of personal property, food, or animals in any live body of water is prohibited.**
- **A port-o-john is required at the dam construction site and must be located at least 200 feet away from any water source.**
- **The Motor Vehicle Use Map (MVUM) must be adhered to by all crew member except as provided by specifications of the contract in conducting official business.**

This Amendment is accepted subject to the conditions set forth herein.

ACCEPTED: WYOMING WATER DEVELOPMENT COMMISSION

MARK KOT, Chairman

DATE

LIISA ANSELM-DALTON, Secretary

DATE

ATTORNEY GENERAL'S OFFICE: APPROVED AS TO FORM:

MEGAN POPE, Senior Assistant Attorney General

DATE

APPROVED:

PATRICIA O'CONNOR, Forest Supervisor

DATE

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average one (1) hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW,

Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

To: Jason Mead PE, WWDC
Bill Brewer PE, WWDC
Jeff Kaiser PE, WWDC

From: Morgan Wardell PE, Stantec
Chris Lidstone PG, Chris Lidstone LLC

:

Date: May 12, 2022

Reference: Middle Piney Reservoir Cost and Budget Summary – Grouting Work

Jason, and Bill:

As requested, the following memo will outline the work done to date on the project, the anticipated 2022 schedule, and upcoming work as we move toward final completion of the embankment. As discussed in our August 3, 2021 memo, we addressed several change orders, and completed additional unanticipated work to satisfy dam safety comments due to changed geologic conditions of the embankment. We were able to design and complete an additional 24" seepage control drain along the outlet conduit, and installed 10 of the 15 proposed piezometers last fall. These instruments have been collecting data since October of 2021 and we completed an initial download of data in April of 2022. We are currently analyzing the data from that download. The remaining 5 piezometers will be installed the week of May 16th, with additional lugeon and packer testing scheduled for early June. Having all 15 piezometers in place prior to early season runoff (mid-June) will allow us to evaluate the subsurface water pressures during higher water conditions. These data, in conjunction with the results from the additional testing will help address the subsurface flow conditions and allow us to target areas within the embankment that may require further improvement grouting. We anticipate that a final grouting plan will be prepared by early July. Following its review by WWDC and USFS, we hope to initiate and complete the grouting work this 2022 construction season.

As we had noted in the funding request last August, the additional testing and monitoring of early season runoff will be critical to fully develop the final grouting program. We recognize that this task has not been completed, but given the schedule constraints of the site, Stantec would like to request a funding set-aside at this point to give the project the best chance for completion within the 2022 construction season. If funding requests are left to the August Select Water Committee meeting, we feel that timing of the grouting work will be impacted and that the 2022 grouting work will not take place. Specifically funding approval in August, will not allow sufficient time to secure and mobilize a contractor and complete the grouting work prior to the winter shutdown (generally early October). Grouting contractor availability requires 2 to 6 months lead time and generally require a commitment of funding. Previous grouting work has also taken four to 8 weeks to complete. If we could have a contractor on board to do grouting ahead of completion of the final grouting plan, we could accelerate the schedule and potentially complete work this season, and not require mobilization of a grouting contractor again in 2023. We have limited construction time due to weather, so process delays can cause huge impacts to overall schedule.

Given the timing of these items and our current data collection and analysis status, the final grouting plan will not be ready until early July. With that said we have prepared conservative estimates and will refine these estimates as we get additional information. In an effort to provide you an updated (2022) cost estimate, we have contacted suppliers and subcontractors with varying degrees of success. We will continue these efforts in advance of the Wyoming Water Development Select Water Committee meetings on May 12th. I will be available for these meetings remotely to assist in answering questions and discussing the costs.

May 12, 2022

WWDC

Page 2 of 2

Reference: Middle Piney Reservoir Cost and Budget Summary – Grouting Work

A 15% contingency has been included on all our estimates and projections. This contingency depended mainly on the availability of information to accurately price upcoming work items. We have reviewed project documents and correspondence, as well as looked ahead to remaining work items to try and anticipate what change orders may be presented to us as well. Again, this list is subject to change, and could vary depending upon the level of impact to the Contractor, which may not be readily known at this time.

This improvement grouting work will include the final round of grouting to ensure dam safety requirements are met within the embankment construction area. Data from the monitoring and piezometers will help guide and define areas of high seepage within the existing grout curtain. Knowing the higher seepage potential areas will allow us to be more efficient with the grouting program, and target areas that need additional improvement.

The assumed locations of grouting locations are only based on what we know at this time regarding grout performance. This is subject to change depending upon the data collected by this year's monitoring data collection.

The pricing provided includes the mobilization costs proposed by the current grouting subcontractor. This estimate also includes additional permeation improvement grouting work along the right abutment with the goal to improve subsurface embankment conditions along the right side. The practicality and potential meaningful impact of this work will again need to be evaluated vs. the data collected during the monitoring work. The work also includes grouting near the control tower structure, and along the left abutment as well. We have tried to be conservative in our estimates of areas needing additional improvement grouting, and the number of potential grout locations.

With the data we have available at this time, and based on previous grouting efforts at the site, we estimate an improvement grouting construction cost of **\$1,673,000**. This estimate includes the contractor mobilization, grouting work, engineering oversight, and contingency of 15%.

If you have any questions on this estimate, or regarding the content of the memo, please don't hesitate to contact me and I would be happy to discuss it with you.

Stantec Consulting Services Inc.



Morgan Wardell, PE

Project Manager/Associate

Phone: 307-675-1148 (office), 307-752-6686 (cell)

Fax: 307-675-1149

Morgan.wardell@stantec.com

2

3 **AGREEMENT BETWEEN THE**

4 **STATE OF WYOMING**

5 **WYOMING WATER DEVELOPMENT COMMISSION**

6 **AND THE**

7 **UNITED STATES DEPARTMENT OF THE INTERIOR**

8 **BUREAU OF RECLAMATION**

9 **FOR**

10 **ENGINEERING AND TECHNICAL SERVICES**

11

12 This technical services agreement (Agreement) is entered into as of the _____

13 day of _____ 2022, pursuant to the Reclamation Act of June 17, 1902 (32 Stat.

14 388), and acts amendatory thereof or supplementary thereto, particularly the Contributed

15 Funds Act of May 4, 1921 (43 U.S.C. § 395), by and between the UNITED STATES,

16 DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION (Reclamation or

17 Contracting Officer), and the WYOMING WATER DEVELOPMENT COMMISSION

18 (State or Contractor), an entity of the State of Wyoming, organized and existing under the

19 laws of the State of Wyoming.

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1 **RECITALS**

2 WHEREAS, under the authority of the Colorado River Storage Project Act of
3 1956 (70 Stat 105), Reclamation performed extensive studies and gathered substantial
4 information relating to the planning and design of the Seedskadee Project (Project), as
5 well as other federal Reclamation projects, and has performed extensive construction
6 services; and

7 WHEREAS, due to Reclamation's engineering and technical expertise, there are
8 certain functions that the State may wish Reclamation to perform with funds advanced by
9 the State to Reclamation under the authority granted by federal Reclamation laws,
10 particularly the Contributed Funds Act of March 4, 1921 (43 U.S.C. §395); and

11 WHEREAS, the parties are willing to perform their respective duties in a timely
12 and cost-effective manner. The parties are authorized to enter into this Agreement
13 consistent with federal Reclamation law, as specified above. Engineering and technical
14 services performed will be specified in future task orders issued and made a part of this
15 Agreement.

16 NOW THEREFORE, in consideration of the above it is mutually agreed by the
17 parties as follows:

18 **AGREEMENT**

19 1. Scope of Services.

20 a. Generally. At the State's request, Reclamation will provide
21 professional engineering and technical services in connection with the Seedskadee
22 Project, which services are not provided under existing contracts. These services may
23 include, but are not limited to: assistance with operation and maintenance; hydrological,

1 geological, geotechnical, design; technical review; preparation of engineering cost-
2 estimates; inspection; surveying; assistance with computer systems; administration of
3 water rights; facilitation of water sales; environmental and permitting services;
4 contracting services; technical meetings; and other services as requested. Particulars of
5 each task, such as personnel rates, costs, and schedules in which the parties to this
6 Agreement engage will be contained in scope change authorizations, hereafter called task
7 orders. Each task order will be attached to and made part of this Agreement. Reclamation
8 will prepare the task orders in consultation with the State. Both parties will review and
9 agree to the individual task orders if Reclamation deems it has adequate capability to
10 perform the work. No task order will become a part of this Agreement until it has been
11 signed by the State and Reclamation.

12 b. Key Personnel. Reclamation will:

13 (1) Designate experienced personnel, acceptable to the State, to
14 perform the work described above and coordinate the work with the State's contact
15 person.

16 (2) Make designated personnel available to perform the work
17 described. Such availability will be agreed upon in advance as part of the agreed work
18 schedule included in the various task orders.

19 (3) Maintain records of the cost for the performance of work
20 required by this Agreement and submit itemized statements to the State of such costs.

21 (4) Submit project progress reports to the State, quarterly or on
22 an as-needed basis, summarizing project activities associated with itemized cost

1 statements. These progress reports will contain the most accurate information available
2 at the time.

3 c. Modification. This Agreement may be modified through mutual
4 agreement among the parties. Any modification made to this Agreement will be
5 confirmed in writing prior to performance of the change.

6 2. Compensation.

7 a. Generally. The State will advance to Reclamation the estimated
8 total cost of actual services to be performed and anticipated out-of-pocket expenses as
9 determined by each task order. Such amount will be based upon Reclamation's estimated
10 hours, as detailed in task orders, to complete the assigned tasks, as approved in advance
11 by the State. Reclamation will establish a unique cost account to track and account for
12 the costs of services provided under the terms of the task orders associated with the
13 project. The total cost of actual services is not expected to exceed one million, six
14 hundred twenty-nine thousand dollars (\$1,629,000).

15 b. Advancement of Funds.

16 (1) Requests for Advancement of Funds. The State will
17 advance funds to Reclamation on a task order basis to cover estimated costs, timed with
18 Reclamation's actual cash requirements for carrying out the purposes of this Agreement.
19 All payments will reference Agreement No. 22-WC-40-927 and will be remitted to:
20 Bureau of Reclamation, Upper Colorado, P.O. Box 301504, Los Angeles, CA 90030-
21 1054. Reclamation will deliver a request for each such advance to the State, or as
22 specified in each task order, before initiating the work activities covered by the request to
23 allow adequate time for review and processing of the request. Each request for advance

1 will include an itemization of estimated services Reclamation will perform to complete
2 the assigned tasks. The State will approve or deny the request for advance, and if
3 approved, transfer funds at least seven (7) days prior to Reclamation commencing work.
4 The State will provide the required advance funding as specified on the individual task
5 orders issued pursuant to this Agreement. In the event that funds advanced are
6 insufficient to cover Reclamation's expenses, Reclamation will notify the State and
7 discontinue work activities until such time as a modification is made to the task order and
8 the additional funding is provided. In such event, Reclamation will provide a written
9 request for additional funding, along with explanation of the insufficiency. Upon
10 completion of the project or termination under the terms of this Agreement, Reclamation
11 will refund within sixty (60) days to the State any unexpended advanced funds remaining
12 which are in excess of the total actual costs associated with the project activities
13 described in the task order.

14 (2) Use of Funds Advanced. Immediately upon receiving
15 funds advanced from the State, Reclamation will credit the funds into Reclamation's
16 designated cost structure. Thereafter, Reclamation may charge to that cost structure to
17 finance the work authorized under the individual task order. Reclamation may use the
18 funds advanced under the task order only for costs and expenses incurred in performing
19 work authorized in the task order. In the event funds advanced by the State are
20 insufficient to complete anticipated work items during the time period corresponding to a
21 particular request for advance, the task order will be modified and Reclamation will
22 request and receive an additional advance of funds prior to work continuing under that
23 particular task order. In such event, Reclamation will provide a written request for

1 additional funding, along with explanation of the insufficiency. However, Reclamation
2 will not expend funds in excess of each request for advance or the cumulative amount
3 specified in each task order.

4 (3) Accounting of Services and Expenses. Reclamation will
5 submit to the State an itemization acceptable to the State of services performed which
6 were incurred under any advancement of funds prior to submitting requests for additional
7 advancement of funds. The itemization will describe the services performed by
8 Reclamation, billed to the nearest one-quarter hour, for actual costs, which approximate
9 the rates set forth for each task order, as well as all expenses incurred. A final accounting
10 of all services and costs will be provided to the State within 60 days of the completion of
11 each task order.

12 3. Independent Agency. Reclamation is a federal agency and nothing in this
13 Agreement will be construed as creating a principal/agent or employee/employer
14 relationship between Reclamation and the State.

15 4. Term. This Agreement will be effective as of the date of execution and
16 will remain in effect for five (5) years.

17 5. Termination. Any party may immediately terminate this Agreement upon
18 written notice to the other party. Reclamation will refund to the State all funds which are
19 unexpended as of the effective date of the termination.

20 6. Indemnification. To the extent authorized by state law, the State
21 agrees to indemnify Reclamation for, and hold Reclamation and all of
22 its representatives harmless from, all damages resulting from suits, actions, or
23 claims of any character brought on account of any injury to any person or

property arising out of any act, omission, neglect, or misconduct in the manner or method of performing any construction, care, operation, maintenance, supervision, examination, inspection, or other duties of the State or Reclamation required under this Agreement, regardless of who performs those duties, provided that nothing in this Agreement shall be construed as releasing Reclamation from liability for its own negligence. Nothing herein shall be deemed to increase the liability of Reclamation beyond the provisions of the Federal Tort Claims Act, Act of June 25, 1948, 62 Stat. 982 (28 U.S.C. § 1346(b), 2671 et seq.) or other applicable law. Further provided that nothing herein shall be deemed to increase the liability of the State beyond the provisions of the Wyoming Governmental Claims Act, Wyo. Stat. 1-39-101 et seq.

7. Authorized Representatives and Notice.

a. Generally. The parties respectively designate the following persons to act as their authorized representatives in matters and decisions pertaining to the timely performance of this Agreement:

For the State:

Jason Mead
Interim Director
Wyoming Water Development Commission
6920 Yellowtail Road
Cheyenne, WY 82002

For Reclamation:

Kent Kofford
Area Manager
Provo Area Office
Bureau of Reclamation
302 East 1860 South
Provo, UT 84606-7317
Phone: 801-379-1000

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2 Each party may designate a successor authorized representative upon written notice to the
3 other party, or as designated in each task order.

4 b. Notice. All written notices required to be given for this Agreement
5 or for task orders will be hand delivered, or sent via facsimile or United States mail,
6 postage prepaid, to the parties' respective authorized representatives identified above.
7 Notice will be deemed to be received upon actual receipt or three (3) days after mailing,
8 whichever occurs first.

9 8. Miscellaneous Provisions.

10 a. Assignment. This Agreement will not be assignable by any party
11 without the prior written consent of the other parties. Subject to this limitation on
12 assignment, this Agreement will be binding upon and will persist to the benefit of the
13 parties' respective successors, agents and assignees.

14 b. Severability. The provisions of this Agreement are severable, and
15 the invalidity or unenforceability of any provision of this Agreement will not affect the
16 validity or enforceability of the remaining provisions.

17 c. Authority. Each party warrants that the person signing below on
18 its behalf has been duly authorized to execute this Agreement on its behalf.

19 9. Contingent on Appropriation or Allotment of Funds. The expenditure or
20 advance of any money or the performance of any obligation of Reclamation under this
21 Agreement will be contingent upon appropriation or allotment of funds. Absence of
22 appropriation or allotment of funds will not relieve the State from any obligations under

1 this Agreement. No liability will accrue to Reclamation in case funds are not
2 appropriated or allotted.

3 10. Sovereign Immunity. The State of Wyoming and the Wyoming Water
4 Development Commission do not waive sovereign immunity by entering into this
5 Agreement and each fully retains all immunities and defenses provided by law with
6 respect to any action based on or occurring as a result of this Agreement. The parties
7 agree that any ambiguity in this Agreement shall not be strictly construed, either against
8 or for either party, except that any ambiguity as to sovereign immunity shall be construed
9 in favor of sovereign immunity.

10 11. Third Party Beneficiaries. The parties do not intend to create in any other
11 individual or entity the status of third-party beneficiary, and this Agreement will not be
12 construed so as to create such status. The rights, duties, and obligations contained in this
13 Agreement will operate only between the parties to this Agreement and will inure solely
14 to the benefit of the parties of this Agreement. The provisions of this Agreement are
15 intended only to assist the parties in determining and performing their obligations under
16 this Agreement.

17 12. Prior Approval. This Agreement will not be binding upon either party, no
18 services will be performed under the terms of this Agreement, and the Wyoming State
19 Auditor will not draw warrants for payment on this Agreement, until this Agreement has
20 been reduced to writing, approved as to form by the Office of the Attorney General, filed
21 with and approved by A&I Procurement, and approved by the Governor of the State of
22 Wyoming or his designee if required by Wyo. Stat. § 9-2-3204(b)(iv).

1 13. Availability of Funds. Each payment obligation of the State is conditioned
2 upon the availability of government funds which are appropriated or allocated for the
3 payment of this obligation. If funds are not allocated and available for the continuance of
4 the services performed under this Agreement, the Agreement may be terminated by the
5 State at the end of the period for which the funds are available.

6 14. Officials Not to Benefit. No Member of or Delegate to the Congress,
7 Resident Commissioner, or official of the Contractor will benefit from this Agreement
8 other than as a water user or landowner in the same manner as other water users or
9 landowners.

10 15. Changes In Contractor's Organization. While this Agreement is in effect,
11 no change may be made in the Contractor's organization, by inclusion or exclusion of
12 lands or by any other changes which may affect the respective rights, obligations,
13 privileges, and duties of either the United States or the Contractor under this Agreement
14 including, but not limited to, dissolution, consolidation, or merger, except upon the
15 Contracting Officer's written consent.

16 16. Assignment Limited—Successors and Assigns Obligated. The provisions
17 of this Agreement will apply to and bind the successors and assigns of the parties hereto,
18 but no assignment or transfer of this Agreement or any right or interest therein by either
19 party will be valid until approved in writing by the other party.

20 17. Books, Records, and Reports. The Contractor will establish and maintain
21 accounts and other books and records pertaining to administration of the terms and
22 conditions of this Agreement, including the Contractor's financial transactions; water
23 supply data; project operation, maintenance, and replacement logs; project land and

rights-of-way use agreements; land-ownership, land-leasing, and water-use data; and other matters that the Contracting Officer may require. Reports will be furnished to the Contracting Officer in such form and on such date or dates as the Contracting Officer may require. Subject to applicable Federal laws and regulations, each party to this Agreement will have the right during office hours to examine and make copies of the other party's books and records relating to matters covered by this Agreement.

18. Compliance with Civil Rights Laws and Regulations.

(a) The Contractor shall comply with Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352; 42 U.S.C. § 2000d), the Rehabilitation Act of 1973 (Pub. L. 93-112, Title V, as amended; 29 U.S.C. § 791, et seq.), the Age Discrimination Act of 1975 (Pub. L. 94-135, Title III; 42 U.S.C. § 6101, et seq.), [Title II of the Americans with Disabilities Act of 1990 (Pub. L. 101-336; 42 U.S.C. § 12131, et seq.)] [Title III of the Americans with Disabilities Act of 1990 (Pub. L. 101-336; 42 U.S.C. § 12181, et seq.)], and any other applicable civil rights laws, and with the applicable implementing regulations and any guidelines imposed by the U.S. Department of the Interior and/or Bureau of Reclamation.

(b) These statutes prohibit any person in the United States from being excluded from participation in, being denied the benefits of, or being otherwise subjected to discrimination under any program or activity receiving financial assistance from the Bureau of Reclamation on the grounds of race, color, national origin, disability, or age. By executing this Agreement, the Contractor agrees to immediately take any measures necessary to implement this obligation, including permitting officials of the United States to inspect premises, programs, and documents.

1 (c) The Contractor makes this agreement in consideration of and for the purpose
2 of obtaining any and all Federal grants, loans, contracts, property discounts, or other
3 Federal financial assistance extended after the date hereof to the Contractor by the
4 Bureau of Reclamation, including installment payments after such date on account of
5 arrangements for Federal financial assistance which were approved before such date.
6 The Contractor recognizes and agrees that such Federal assistance will be extended in
7 reliance on the representations and agreements made in this article and that the
8 United States reserves the right to seek judicial enforcement thereof.

9 (d) Complaints of discrimination against the Contractor shall be investigated by
10 the Contracting Officer's Office of Civil Rights.

11 19. Certification of Nonsegregated Facilities. The Contractor hereby certifies
12 that it does not maintain or provide for its employees any segregated facilities at any of
13 its establishments and that it does not permit its employees to perform their services at
14 any location under its control where segregated facilities are maintained. It certifies
15 further that it will not maintain or provide for its employees any segregated facilities at
16 any of its establishments and that it will not permit its employees to perform their
17 services at any location under its control where segregated facilities are maintained. The
18 Contractor agrees that a breach of this certification is a violation of the Equal
19 Employment Opportunity clause in this Agreement. As used in this certification, the
20 term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash
21 rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or
22 dressing areas, parking lots, drinking fountains, recreation or entertainment areas,
23 transportation, and housing facilities provided for employees which are segregated by

1 explicit directive or are in fact segregated on the basis of race, creed, color, or national
2 origin, because of habit, local custom, disability, or otherwise. The Contractor further
3 agrees that (except where it has obtained identical certifications from proposed
4 subcontractors for specific time periods) it will obtain identical certifications from
5 proposed subcontractors prior to the award of subcontracts exceeding ten thousand
6 dollars (\$10,000) which are not exempt from the provisions of the Equal Employment
7 Opportunity clause; that it will retain such certifications in its files; and that it will
8 forward the following notice to such proposed subcontractors (except where the proposed
9 subcontractors have submitted identical certifications for specific time periods):

10 NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR
11 CERTIFICATIONS OF NONSEGREGATED FACILITIES

12 A Certification of Nonsegregated Facilities must be submitted prior to the award
13 of a subcontract exceeding ten thousand dollars (\$10,000) which is not exempt from the
14 provisions of the Equal Employment Opportunity clause. The certification may be
15 submitted either for each subcontract or for all subcontracts during a period (i.e.,
16 quarterly, semiannually, or annually). Note: The penalty for making false statements in
17 offers is prescribed in 18 U.S.C. § 1001.

18 20. Medium for Transmitting Payments

19 (a) All payments from the Contractor to Reclamation under this Agreement will
20 be by the medium requested by Reclamation on or before the date payment is due. The
21 required method of payment may include checks, wire transfers, or other types of
22 payment specified by Reclamation.¹

1 (b) Upon execution of the Agreement, the Contractor will furnish the Contracting
2 Officer with the Contractor's taxpayer's identification number (TIN). The purpose for
3 requiring the Contractor's TIN is for collecting and reporting any delinquent amounts
4 arising out of the Contractor's relationship with Reclamation.

5 21. Agreement Drafting Considerations. This Agreement has been negotiated
6 and reviewed by the parties hereto, each of whom is sophisticated in the matters to which
7 this Agreement pertains. Articles 1 through 21 of this Agreement have been drafted,
8 negotiated, and reviewed by the parties, and no one party will be considered to have
9 drafted the stated articles.

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IN WITNESS WHEREOF, the parties execute this Agreement as of the date first
written above.

WYOMING WATER DEVELOPMENT COMMISSION

_____	_____
Chair	Secretary

ATTORNEY GENERAL'S OFFICE APPROVAL AS TO FORM

_____	_____
Megan Pope	Date
Senior Assistant Attorney General	

APPROVED AS TO LEGAL SUFFICIENCY	BUREAU OF RECLAMATION
----------------------------------	-----------------------

_____	_____
Office of the Regional Solicitor	Upper Colorado Basin Regional Director

~~End of Agreement~

NOTICE TO ALL PROPOSERS

Any Engineering Firm or Corporation wishing to enter into a contract with the Wyoming Water Development Commission must possess a Certificate issued by the Board of Registration for Professional Engineers and Professional Land Surveyors to practice engineering or land surveying in Wyoming. Geologists must possess a Certificate from the Board of Registration for Professional Geologists to perform work of a geologic nature.

Any Firm or Corporation wishing to enter into a contract with the Wyoming Water Development Commission must possess a Certificate of Good Standing issued by the State of Wyoming Office of the Secretary of State to conduct business in Wyoming.

Contracts will not be finalized until Firms have met these requirements.



WYOMING WATER DEVELOPMENT OFFICE

6920 Yellowtail Road
Cheyenne, WY 82002

Phone: (307) 777-7626
wwdc.state.wy.us

Mark Gordon
Governor

Commissioners

Liisa Anselmi-Dalton	Mark Kot
Robert R. Choma	John H. Lawson
Lee Craig	Sheridan Little
Clinton W. Glick	Larry Suchor
Ronald E. Kailey, Jr.	Bill Yankee

Jason Mead, P.E.
Interim Director

REQUEST FOR PROPOSAL NO. 22-8 CLOUD SEEDING: OPERATIONS HYDROLOGICAL ASSESSMENT MEDICINE BOW & SIERRA MADRE MOUNTAIN RANGES, LEVEL II STUDY

SEALED NON-PRICED PROPOSALS, INCLUDING 10 PAPER COPIES AND 1 DIGITAL COPY IN PDF FORMAT ON A CD OR USB DRIVE, WILL BE RECEIVED by the WYOMING WATER DEVELOPMENT COMMISSION (Commission), 6920 Yellowtail Road, Cheyenne, Wyoming 82002 (82009 if shipping by means other than US Postal Service) until 1:00 p.m., April 14, 2022, at which time they will be publicly opened for PROFESSIONAL SERVICES required to conduct the Cloud Seeding: Operations Hydrological Assessment Medicine Bow & Sierra Madre Mountain Ranges, Level II Study.

SEALED PRICE PROPOSALS, INCLUDING 1 PAPER COPY AND 1 DIGITAL COPY IN WORD FORMAT ON A CD OR USB DRIVE, shall also be submitted in a single separate sealed envelope containing itemized prices accompanying the copies of the non-priced proposals. These envelopes shall be opened after the firms to be interviewed have been selected and prior to the interviews. Neither proposal contents nor prices will be released at the proposal openings.

Any inquiries regarding this request for proposal should be directed to Julie Gondzar, Wyoming Water Development Office, 6920 Yellowtail Road, Cheyenne, Wyoming 82002, Telephone (307) 777-7626.

Your proposal shall be based on the following attachments "A", "B", and "C".

DATED THIS 17TH DAY OF MARCH, 2022.

Jason Mead, Interim Director
Wyoming Water Development Office

ATTACHMENT "A"

A. INFORMATION FOR PROPOSERS:

1. In order to be considered for an award, each proposal must bear the signature of the proposer or his authorized representative, the work must be supervised by a Wyoming licensed engineer/geologist, as appropriate, and the firm must be registered with the State of Wyoming.
2. Proposals received after the date and time specified will not be accepted or considered. **This requirement is strictly enforced.**
3. After the successful proposer is selected, the Commission will negotiate a final contract, scope of services, and contract price based on, but not limited to, the work items in Attachment "B". The Commission, at its sole discretion and through duly authorized contract amendments, may request the selected consultant to complete additional work or phases beyond the scope of services included in the initial contract.
4. After the final contract is negotiated and work begun, payment to the successful proposer shall be based on an itemized billing of work completed as derived from the approved hourly rate and reimbursable expenses price schedule approved by the Commission and contained in the contract for services. A total contract amount and an amount for each task will be specified in the contract. The total contract amount is controlling and shall not be exceeded without prior written consent of the Commission. Requests for payment must be made on forms provided by the Commission, or an approved equivalent form, and must be properly executed. Payment will be made no more often than monthly.
5. The successful proposer shall furnish all materials, equipment and labor necessary to complete the study.
6. The State of Wyoming reserves the right to reject any or all proposals submitted.
7. The successful proposer shall be fully insured as to save the State of Wyoming harmless from any claims involving the employees or equipment used by the successful proposer and subconsultants while executing this service.
8. The successful proposer shall be familiar with all applicable state laws. The attention of prospective proposers is called to the requirements as to the conditions of employment to be observed and to all applicable laws affecting the work, particularly to the procurement procedures required by Section 9-2-3204 and Section 9-23-101 through 9-23-107, Wyoming Statutes.

9. No prospective proposer shall withdraw their proposal for a period of thirty (30) days after the actual date of proposal opening.

10. The Wyoming Water Development Office (Office) shall provide all possible assistance and cooperation to firms preparing proposals for this project. The proposer should understand that verbal comments may be subject to misinterpretation and are in no way binding on the individual, the Office, or the Commission. If questions arise concerning any aspect of this request for proposals, the proposer should request clarification in writing. A copy of this request, as well as the written response, shall be provided to all firms receiving a request for proposals on the project.

11. The State of Wyoming hereby notifies all prospective proposers that it will affirmatively ensure that in any contract entered into pursuant to the advertisement, small or minority business enterprises will be afforded full opportunity to submit proposals in response to this invitation and will not be discriminated against on the grounds of age, race, religion, color, sex, national origin, or ancestry in consideration for an award.

12. The proposer hereby agrees that should they be awarded this contract, proposer shall not discriminate against any person who performs work thereunder because of age, race, religion, color, sex, national origin or ancestry.

13. The proposer has not and will not attempt to induce any other person or firm to submit or decline to submit a proposal for the purpose of restricting competition.

B. PROPOSAL FORMAT:

The proposal shall be prepared and contain the following information:

1. Cover letter submitted with proposal.
2. Title page.
3. Table of Contents.
4. Introduction.
5. Scope of Services:

A detailed Preliminary Scope of Services is included in Attachment "B". State how you intend to conduct the activities presented in the Preliminary Scope of Services, and list all assumptions made in preparing the proposal. The proposed work/approach should be presented in the same format as in Attachment "B" and should address all the requirements contained therein.

6. Proposed Scope Alterations:

If you feel that the Preliminary Scope of Services (Attachment "B") may be improved by additions, deletions, or changes, please elaborate in this section. State your alterations as specific task changes for the activities presented in the Preliminary Scope.

7. Qualifications:

- a. Briefly show your firm's capability for performing this project.
- b. List project team members and identify the project manager. As applicable, include a certification that the work conducted will be supervised by a professional engineer licensed in Wyoming as required by the provisions of WS 33-29-114 through WS 33-29-139 and a professional geologist licensed in Wyoming as required by the provisions of WS 33-41-101 through 33-41-121. Provide the Wyoming Board of Professional Engineer's license number of your firm.
- c. State which of your offices will perform the project work.
- d. Provide a resume for each key project member.
- e. Identify all proposed subconsultants, list the work to be performed by the proposed subconsultants, and provide statements of project specific qualifications for each subconsultant.
- f. If the proposer claims to be a "resident firm" as defined by Section 9-23-102, Wyoming Statutes, the proposer must meet statutory requirements. The proposal from a resident firm must include sufficient information to demonstrate that the firm will meet these statutory requirements.

8. Listing of current clients whose interests may compete or conflict with the project described herein.

9. Work Schedule. Assume a Notice to Proceed will be issued mid-June. Provide a bar graph schedule depicting the duration of each work item and the proposed phasing of the work.

10. Previous Work for Project Sponsor. List any projects for which your firm has been under contract to the project sponsor during the period of 2017 to 2021. This list should include individual project names, dates and contract amounts.

C. PRICE PROPOSAL:

Submitted with the non-priced proposal, but in a separate single sealed envelope, shall be one copy of the price proposal(s) in paper copy and one digital copy in Word format on a CD or USB drive. The envelope shall be labeled with the project name and shall indicate that it contains the price proposal(s).

Two price proposals may be submitted. One proposal, prepared in the format of Attachment "C", must give costs to perform the Preliminary Scope of Services as specified in Attachment "B". A second price proposal may also be submitted, in a format similar to Attachment "C", specifying costs for the Preliminary Scope of Services with Alterations as per Item B.6 (Proposed Scope Alterations). The proposed hourly rate and reimbursable expenses price schedules for each firm involved shall be included in each price proposal, and shall be in Word format.

D. CONTRACTOR SELECTION PROCEDURES:

The Commission will conduct the selection process in accordance with Sections 9-2-3204 and 9-23-101 through 9-23-107, Wyoming Statutes.

For those firms requesting consideration, the Commission has evaluated current statements of qualifications and performance data on file with the Office together with any applications submitted, and has selected not less than three (3) firms (if available) considered qualified to perform the required professional services to submit proposals. The Commission based this selection on the following:

- (i) Except as provided in paragraph (ii) of this subsection, the Commission selected firms that are resident firms as defined by Section 9-23-102, Wyoming Statutes. Consideration between these qualified resident firms were based upon:
 - (A) The ability of professional personnel;
 - (B) Past performance;
 - (C) Ability to meet time requirements;
 - (D) Location;
 - (E) Current and projected workloads;
 - (F) The volume of work previously awarded to the firm by the Commission;
 - (G) The equitable distribution of contracts among the firms considered qualified.
- (ii) Nonresident firms may be selected if no firms on file, together with any applications submitted for the project, are resident firms as defined by Section 9-23-102 or if the resident firms are determined not qualified by the WWDC. Consideration of qualified nonresident firms shall be based upon the considerations listed in subparagraphs (i) (A) through (G) of this subsection.

The goal of the initial screening process was to come up with a short list of five (5) qualified

firms to provide the necessary professional services. Firms selected for the short list were asked to submit proposals.

- 1) If there were five (5) or more qualified resident firms, five (5) of those firms were selected.
- 2) If there were four (4) or less qualified resident firms, those firms were selected.
- 3) If there were zero (0) qualified resident firms, the screening process looked to add qualified non-resident firms based on the requirements of Wyoming Statutes, Section 9-23-105, to make a short list of five firms.

The Commission will evaluate proposals submitted by the short-listed firms and, based upon these proposals, select not less than three (3) firms, if possible, to be interviewed. The qualifications, experience, and expertise of the project team and contents of the work proposal will be considered in selecting firms to be interviewed. Price will not be considered in determining which firms will be invited to the interview process.

The interview shall be recorded and include discussion of each firm's approaches to the project, projections of project costs, qualifications, ability to furnish required professional services, use of alternative methods for furnishing required professional services, and an estimated fee based on the Commission's description of the work. The estimated fee and other information provided throughout this process may be used as a basis for selection by the Commission of the most appropriate firm for contract negotiations.

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ATTACHMENT "B"

A. AUTHORIZATION:

The 2022 Wyoming State Legislature has authorized the Wyoming Water Development Commission to conduct the study described herein. The Consultant will complete the tasks and requirements outlined in D. Scope of Services.

B. PROJECT DESCRIPTION:

1. Location. Albany and Carbon Counties, North Platte and Little Snake River Basins.

2. Purpose. To perform a Level II study for the State of Wyoming's aerial cloud seeding program. The purpose of this Project is to use actual seeding event data from past operational seasons (winter seasons of 2018-19 through 2021-22), and improved WRF modeling to better quantify the impacts operational cloud seeding efforts have on precipitation, snowpack and resulting streamflow in the North Platte and Little Snake River Basins of Wyoming. Quantifying additional acre feet of water and providing a scientific-based visual as to the distribution of any additional water from seasonal cloud seeding, and evaluating cost effectiveness are also important goals of this Project. The purpose and goals of this Project will inform the State of Wyoming as to the appropriate level of future expenditures for aerial cloud seeding.

History. Based on the results from the Wyoming Weather Modification Pilot Program (completed in 2014) and the Medicine Bow/Sierra Madre Final Design and Permitting Study (completed in 2018), a cost benefit and average increase in streamflow was shown to be approximately 12,500 additional acre feet due to winter seeding activities in the Medicine Bow and Sierra Madre Mountains. However, it is assumed that Wyoming's ongoing aerial cloud seeding activities in that target area is producing more yield for the following reasons: 1) the operating season is longer allowing for more seeding events and increased streamflow, 2) more flares are being used during each event allowing for increased snow production, 3) the meteorological criteria for cloud seeding in an operational setting is less stringent leading to more increased snow production, and 4) a more powerful aircraft increases the length of many of the seeding missions. With Wyoming's aerial operations likely producing a higher yield of actual spring time streamflow, confidence increases in using a different set of modeled values, reflecting additional acre feet between April to July (annually).

C. PROJECT REQUIREMENTS:

1. Monthly Progress Reports and Billing Statements

The Consultant shall submit a brief monthly progress report outlining the study status, progress, and results to date, regardless of whether or not a billing statement is submitted, on

or before the last working day of the month.

Each billing statement must include a task-by-task report justifying the cost items contained in the billing statement. The monthly progress report may be used as the justification for the billing statement as long as all cost items covered in the billing statement are addressed in the progress report.

2. Computer Models, Geographic Information System (GIS), Statement of Assumptions, Project Work File

a. If the Consultant writes or uses a computer program or spreadsheet as a part of this project, the Consultant shall submit to the Commission for approval all proposed program names and data formats prior to beginning work on that task. All data shall be submitted to the Commission in written and digital forms with the final report. Digital media shall be labeled by the Consultant to provide sufficient detail to access the information on the media. User manuals shall be submitted by the Consultant to the Commission providing complete documentation of computer programs developed under this project. The user manuals shall also contain the source code language and the type of computer equipment necessary to operate the program(s). The computer programs and spreadsheets (written and digital forms) are due on the same date as the final report, which contains the information generated by the programs.

b. If the Consultant develops, collects, and/or uses GIS data as a part of this project, the Consultant shall do so in accordance with the WWDC GIS Standards Technical Memorandum utilizing provided Geodatabase Templates. Links to GIS Standards Technical Memorandum are available at <https://water.geospatialhub.org/pages/wwdc-gis-standards>. A webinar on required GIS Standards, hosted by WWDC and WRDS, will be available following consultant selection and is strongly recommended.

The Consultant shall adhere to the following GIS standards:

(i) FEATURE MAPPING. The Consultant shall acquire the appropriate Geodatabase Template for feature mapping from <http://water.geospatialhub.org/search?groupIds=3e77928b1d0d49858b8916ca63ca5ca4> prior to any GIS work. Five Geodatabase Templates are available and are specific to project type. These templates define the organization and naming requirements for feature classes, tables, and the required attributes within the feature classes. Data needed for the project and described in this contract may include core data or auxiliary data. Core data includes features which fit within one of the feature classes in the Geodatabase Template, whether newly created or acquired from another source. All core data shall be loaded into the Geodatabase Template and attributed according to the GIS data schema described in the GIS Standards Technical Memorandum. This

shall include field attributes that indicate contract number, primary consultant, date modified, and accuracy. In certain circumstances, the consultant may need to provide a second set of core data in a format for the benefit of the project sponsor. This would occur when a project sponsor already has GIS data in a format that differs from the Commission format, or when an alternative format would provide more benefit to the sponsor than the Commission format (e.g., a different coordinate system, or database structure). In these situations, the consultant will provide core GIS data using the Geodatabase template, and a second core GIS dataset in the format that meets the needs of the project sponsor. Auxiliary data sets, include features which do not fit within one of the feature classes in the Geodatabase Templates, whether newly created or acquired from another source. The auxiliary data can be linked to the templates or managed separately as needed for project completion.

(ii) **FORMATS and STANDARDS.** Metadata are required for the geodatabase file, each included feature class (including those obtained from another source) and for each newly created feature. Metadata shall be completed in accordance with the GIS Standards Technical Memorandum. A detailed example for feature class metadata is provided in the GIS Standards Technical Memorandum and included in the Geodatabase Templates. This includes required information and default language, where appropriate, for each of the five metadata sections. Feature-level metadata requirements are also described in the Memorandum. Codes or values used in attribute fields, which are not included as part of the core data templates, shall be defined in the metadata. GIS data shall be saved in a Decimal Degree Coordinate system with a NAD83 datum, specifically “GCS_North_American_1983,” as indicated in the GIS Standards Technical Memorandum. In addition to the Project geodatabase(s) and map file(s), GIS deliverables may also include linked nonspatial data/databases (.accdb, .xlsx), rasters (various formats), photographs (.jpg), maps (.pdf), and file integrated metadata references (.xml, .txt). Core data shall be delivered within the Geodatabase Template. Auxiliary data can be provided as .shp files and metadata are required.

(iii) **MAPS.** Project GIS deliverables shall be organized in such a way as to allow easy replication of the maps found in the final project report. The GIS project files should be provided as ESRI ArcGIS mxd, or aprx files saved with relative path names to data sources.

c. To facilitate the Commission’s accurate evaluation of the Consultant's work product, computations, conclusions and recommendations, the Consultant shall:

(i) Include in the final report a section describing the assumptions and methodology used by the Consultant in generating the data and conclusions contained in that chapter.

(ii) Maintain a project work file containing the materials used in project analysis. This file will be available for review by the Commission and should be organized in such a way as to allow replication of the steps and procedures used by the Consultant to reach the conclusions described in the study.

(iii) Prepare a project notebook containing a description of the assumptions and methodologies used in the project analysis. The notebook shall be organized in such a way as to allow replication of the steps, calculations, and procedures used by the Consultant to reach conclusions, described in the draft final report. The project notebook shall be submitted with the draft final report.

3. Cost Estimates

The Consultant shall use the following guidelines in calculating Level III cost estimates.

WWDC ELIGIBLE PROJECT COSTS

CONSTRUCTION COSTS

Itemized Cost of Each Project Component	\$ _____
	\$ _____
	\$ _____
Cost of Project Components TOTAL	\$ _____ (subtotal #1)
Construction Engineering Cost (subtotal #1 x 10%)	\$ _____
Components + Construction Engineering Costs	\$ _____ (subtotal #2)
Contingency (subtotal #2 x 15%)	\$ _____
Construction Cost Total (subtotal #2 + Contingency)	\$ _____ (subtotal #3)

PRE-CONSTRUCTION COSTS

Preparation of Final Designs & Specifications (subtotal #1 x 10%)	\$ _____
Permitting and Mitigation	\$ _____
Legal Fees (Title of Opinion Only)	\$ _____
Acquisition of Access and Rights of Way	\$ _____
Pre-construction Costs Total	\$ _____ (subtotal #4)

TOTAL WWDC ELIGIBLE PROJECT COST

Total WWDC Eligible Project Cost (subtotal #3 + subtotal #4)	\$ _____ (subtotal #5)
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WWDC INELIGIBLE PROJECT COSTS

Itemized Costs of Ineligible Project Components	\$ _____
	\$ _____
	\$ _____
	\$ _____

Additional Cost for Construction Engineering	\$ _____
Additional Cost for Preparation of Final Designs & Specifications	\$ _____
Total WWDC Ineligible Project Costs Total	\$ _____ (subtotal #6)

TOTAL PROJECT COST

Total Project Cost (subtotal #5 + subtotal #6)	\$ _____
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MATERIALS ONLY TOTAL

Materials Only Total Project Cost ((Subtotal #1 + (Subtotal #1 x 10%))	\$ _____
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Note: Any inflation costs, as determined by the consultant and Office project manager, will be applied to the Total Project Cost.

3. Final Report

The Consultant shall use the Contract Scope of Services as the outline for draft and final reports so that Consultant compliance with Contract provisions can be verified. If the final report contains information of an engineering nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by a Professional Engineer licensed in the State of Wyoming. If the final report contains information of a geologic nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by a Professional Geologist licensed in the State of Wyoming. If the final report contains information of both an engineering and geologic nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by both a Professional Engineer and a Professional Geologist licensed in the State of Wyoming.

5. Final Report - Digital Format

In addition to the paper submittal described in Section C.4 above, the Consultant shall also provide the final documents and related materials in a digital format. This digital report shall be contained on CD(s), USB drive(s), or other media as approved by the Office project manager, and shall be in Searchable Image Adobe Acrobat format.

6. Anticipated Project Funding Assistance

The Consultant shall clearly identify project components eligible for Commission funding, both in cost estimates and in project mapping. The Consultant shall verify project component funding eligibility with the Office project manager prior to commencing any economic analysis. Unless otherwise directed by the Office project manager, the Consultant shall assume that projects will be funded with a 67% grant. The remaining 33% shall be acquired from external sources (for municipal projects); or from external sources and/or a loan from the WWDC (for agricultural projects). The Commission loan will be financed at an interest rate of four percent (4%) with a term to be specified by the Office project manager. If funding is anticipated from another agency, such as the Office of State Lands

and Investments or the USDA Rural Utilities Service (RUS), the Consultant shall prepare cost estimates for system components not eligible for Commission assistance in a format and level of detail acceptable to the potential funding agency.

If required in the Contract Scope of Services, the Consultant shall provide the information necessary to complete applications to RUS, the Office of State Lands and Investments, and any other identified funding sources.

7. Project Access

The Consultant shall be responsible for obtaining access as required for project tasks.

8. Stand-By Time

The Commission will not reimburse the Consultant for stand-by time charges for the Consultant's supervisory personnel.

9. Well Permitting

All wells developed under this program shall list the State of Wyoming, Water Development Office as the permittee. The Consultant shall be responsible for obtaining the permit.

10. Verification Log

After all casing has been installed in the well, the Commission may require that a geophysical log be performed on the well to verify casing placement. A copy of this log shall be included in the final report.

D. SCOPE OF SERVICES:

Task 1. Project Meetings

A scoping meeting shall be held early in the project schedule in the project area, or virtually if needed, to familiarize the Office with the scope of work as well as obtain and provide input and information to and from all affected parties. The Consultant shall prepare all presentation material, including maps and other visual aids as necessary, to explain the project. The scoping meeting location, format and time shall be coordinated with the Office project manager.

Additional project meetings shall be conducted to facilitate project activity coordination and to keep the Office and all affected parties informed of progress. The Consultant should assume a minimum of two (2) public project meetings in the study area or held virtually, if necessary. The Consultant shall be responsible for setting and conducting these meetings in coordination with the Office project manager. The Consultant shall prepare all notices, needed materials, and the meeting record. In addition to the public project meetings, several

informal meetings with the Office project manager may be necessary during the course of the study.

The Consultant shall evaluate whether the project is in the public interest, stipulating if the proposed project functions and services can be served by any person, association or corporation engaged in private enterprise, or if private enterprise has refused to provide the functions and services identified as being required by the proposed project. This information shall be included in the draft and final reports for the project.

Task 2. Review and Summarization of Previous Studies

The Consultant will gather and review all existing information, and published documents and studies that relate to aerial cloud seeding research in Wyoming and the Office's past and current aerial cloud seeding operational projects. The goal of this task is to review work that has already been done, and to summarize past results related to expected precipitation and hydrological impacts from aerial-based cloud seeding efforts in Wyoming. Results from previous studies shall be summarized as a way to show a comparison to what the Consultant will be developing in Task 4. The Consultant shall coordinate with the Office to obtain all past relevant studies that need to be reviewed. The following is a suggested list of past studies to include in the review:

- Wyoming Level II Weather Modification Feasibility Study
- The Wyoming Weather Modification Pilot Program, Level II Study
- Weather Modification – Medicine Bow/Sierra Madre Ranges Final Design and Permitting Study
- Weather Modification Level III Feasibility Study, Laramie Range Siting and Design
- Paper: Evaluation of the Wyoming Weather Modification Pilot Project (WWMPP) Using Two Approaches: Traditional Statistics and Ensemble Modeling (Rasmussen, R. M., S. A. Tessendorf, L. Xue, C. Weeks, K Ikeda...2018)
- Paper: Estimating the Fraction of Winter Orographic Precipitation Produced under Conditions Meeting the Seeding Criteria for the Wyoming Weather Modification Pilot Project (Ritzman, J. M., T. Deshler, K. Ikeda, R. Rasmussen, 2015)
- Airborne Cloud Seeding Operations Reports (2018-19 through 2021-22)

Task 3. Analysis of Past Operational and Observational Data

The Consultant shall analyze and evaluate past data from aerial operations dating back to the State's first operational season, winter of 2018-2019 (and to include the winter of 2021-2022), and integrate these data as needed into the Project goals and Tasks. The Consultant shall gather, collect and archive both operational data (from project operations) and observational data (from the target area). The Consultant shall coordinate with the Office to collect all data sets that include resources available from and related to past operational aerial

cloud seeding seasons over the Medicine Bow and Sierra Madre Mountain Ranges. Data sets for each cloud seeding season should include but not be limited to: all cloud seeding missions in which seeding agent was released from the aircraft, aircraft specifications and capabilities for each season, number and frequency of flares released, CWIP data from the aircraft, pilot reports, rain and snow gauge precipitation data, SNOTEL data, radar data, streamflow gage data, and all other meteorological data relevant to the Project.

The Consultant shall also work with the Office's cloud seeding Contractor to understand definitions and limitations of the meteorological criteria used during the decision-making process for successful aerial seeding effects. The meteorological criteria set for an operational setting is important, as it represents base-line assumptions that differ from standard research-based meteorological criteria for successful seeding effects.

The Consultants shall analyze all data collected and conduct quality control and quality analysis to determine which data will be most valuable for meeting the goals of the Project. The Consultants should also determine how the operational and observational data set will be organized, used and applied to complete the goals of this Project.

Task 4. Impact and Cost Benefit Assessment

The Consultant shall develop a methodology which will result in an Impact and Cost Benefit Assessment of Wyoming's operational aerial cloud seeding efforts over the Medicine Bow and Sierra Madre Mountains and within the North Platte and Little Snake River Basins. This assessment should include quantifying precipitation and hydrological streamflow impacts over the area of study, through a retrospective analysis of past operational seasons and a model analysis to aid in estimating impact quantifications. The Consultant shall meet with the Office Project Manager to discuss the methodology and plan before moving forward with Task 5.

The Consultant shall prepare an Impact and Benefit Assessment to address the following needs of The Office:

- a) Quantify precipitation and snowpack impacts and increases during a typical cloud seeding season (November 1 through April 15) over Wyoming's aerial project target area (Medicine Bow and Sierra Madre Mountain Ranges). The Consultant should maintain a retrospective focus on this analysis with the compliment of any needed model analysis. The Consultant shall be sure to implement and make assumptions that use the meteorological and decision-making criteria for cloud seeding in an operational setting. The Office will assist in providing this information. This will ensure that precipitation estimates are reflective of existing and future operations.
- b) Translate precipitation impacts into resulting hydrological estimates across the target area (Medicine Bow and Sierra Madre Mountains) and within the confines of the North Platte and Little Snake River Basins. The Consultant should quantify the hydrological impacts into best-estimates for resulting

accumulated runoff and additional acre feet of water expected within a cloud seeding season within the target area and North Platte River Basin. The Consultant shall also consider how such impacts and additional expected streamflow would be affected over areas of land that are scarred from recent wild fires (for example, The Mullen Fire, in September 2020).

Provide a cost benefit analysis of Wyoming's operational aerial cloud seeding project, using support from previous years' data and any needed model analysis. Determine how the total project cost(s) have compared to expected additional runoff and related to cost per acre foot. Provide expected cost per acre feet of water to help State of Wyoming decision-makers determine if aerial cloud seeding expenditures balance expected additional water.

Task 5. Recommendations and Cost Estimates

The Consultant shall provide a complete plan for future recommendations for Wyoming's aerial cloud seeding program. This plan will include recommendations and cost estimates for the following:

- a) A schedule and cost estimates for ongoing cloud seeding hydrological assessments
- b) A plan and cost estimate for a future observational network for further advanced hydrological impact analyses
- c) A recommendation, schedule and cost estimate for potential snow chemistry analyses
- d) Any recommendations related to improving operational efficiency
- e) Any other recommendations for best practices in moving forward to continue to evaluate operational spending for cloud seeding efforts in the North Platte and Little Snake River Basins.

Task 6. Discretionary Task

The Consultant shall place \$10,000 of the proposed project budget in this discretionary task. The task is to allow changes in the scope as the project develops or as new issues are discovered. The Consultant and Office project manager will agree on any work to be accomplished under this task and the cost of the work. No work will be initiated, or funds spent for this task, without direct approval from the Office project manager.

Task 7. Draft Report

The Consultant shall submit to the Office five (5) hard copies of a draft report describing the results of all work completed in this study, no later than July 1, 2023. Five (5) CD or USB drive copies containing the draft report in a text-recognized Adobe Acrobat (pdf) format will

also be provided, along with two (2) CD, USB drive, or portable hard drive copies of the draft GIS (if applicable) which comply with the standards specified in Attachment “B”, Section C Project Requirements, item #2. The PDF version will be completely assembled into one standalone file, and shall be exactly the same version as the hard copy. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only). The project Sponsor shall be provided a copy of this draft report for their review.

Task 8. Report Presentations

Upon completion of the draft report, the Consultant shall present the findings of the study at a public meeting near the project area, or virtually if necessary. Information and materials to be presented at the public meeting shall be developed by the Consultant after consultation with the Office project manager. The Consultant shall be responsible for developing a record of the meeting which shall become an appendix in the final report. The record will include: any formal and/or informal notices; an affidavit of publication from the legal notice (public hearings only) as obtained from the Office; any materials presented or handed out at the meeting; a record of attendance; any written comments, statements, or exhibits received; recorded testimony, or a memorandum summarizing the views and comments presented at the meeting; and other pertinent data. The Consultant will also budget for a November, 2023 meeting and presentation in Casper or Cheyenne to present the results to the Commission and Select Water Committee. These presentations are independent of the meetings included under Task 1.

The Consultant shall coordinate with the Office project manager in planning for the presentations to ensure adherence to Office established policies and guidelines.

The report presentation for this Level II Study shall also serve as a public hearing, with WWDC Office personnel serving as the hearing officer. The script for the hearing will be developed by the Office project manager and shall include the question as to whether there is a private entity interested in providing the proposed project functions and services in lieu of the sponsor. The Office is responsible for publishing a legal notice of the meeting in a statewide newspaper, once each week for three (3) weeks prior to the hearing; and in the local publication up to three (3) times prior to the hearing.

Task 9. Final Report and Deliverables

After incorporation of the Office’s and the Sponsor's review comments on the draft report, the Consultant shall submit one (1) final report and one (1) executive summary in hard copy along with one (1) CD or USB drive containing the final report and executive summary in a text-recognized Adobe Acrobat (pdf) format to the Office 1 to 2 weeks prior to the final deadline for final comparison purposes. The pdf version shall be completely assembled into one stand-alone file and shall be exactly the same version as the hard copies. Any discrepancies discovered by the Office project manager between the hard copy and electronic copy during this final comparison are the responsibility of the Consultant to correct.

Upon completion of the final quality assurance process by the Office project manager, WRDS will assign an URL for the online posting of the final report and the Consultant shall submit all final documents and materials, to the Office on or before October 1, 2023. These final documents and materials, shall include: 1) Twelve (12) hard copies of the final report, and 2) Twelve (12) stand-alone hard copies of the executive summary. The executive summary shall outline the purpose, findings, recommendations and configuration of the project, and shall include detailed cost estimates. The summary should not exceed ten (10) pages. Any final reports which have been submitted in three-ring notebook format shall have spine labels clearly identifying the project, Consultant and date.

Four (4) CD or USB drive copies containing the final report, and executive summary in a text-recognized Adobe Acrobat (pdf) format will be provided. The pdf version will be completely assembled into one stand-alone file and shall be exactly the same version as the hard copy. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only).

Two (2) CD or USB drive copies containing the final report, and executive summary in original formats (Word, Excel, etc.) and in a text-recognized Adobe Acrobat (pdf) format. The pdf version will be completely assembled into one stand-alone file. All electronic files shall be exactly the same version as the hard copies. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only).

Three (3) CD or USB drive copies of the hydraulic model project file and all associated files shall be provided if applicable. The files shall create a working model that is fully functional and can be modified. In addition to the above, one (1) electronic copy of the hydraulic model project file and all associated files will be included in the project notebook. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only).

Three (3) CD or USB drive or portable hard drive copies of the GIS data according to the WWDC GIS Framework Plan and Technical Memorandum. See Attachment “B”, Section C Project Requirements, item #2 for further details. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only).

One (1) project notebook containing the working files used in this project will be provided. The project notebook files shall include descriptions of the assumptions and methodologies used in the project analysis. The notebook shall be organized in such a way as to allow replication of the steps, calculations, and procedures used by the Consultant to reach the conclusions described in the final report. The preferred format for the project notebook is digital, provided on a CD or USB drive. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only). Any project notebooks which have been submitted in three-ring notebook format shall have spine labels clearly identifying the project, Consultant and date.

REQUEST FOR PROPOSAL NO. 22-8 (Cont'd.):

ATTACHMENT "C"
PRICE PROPOSAL SUMMARY
CLOUD SEEDING: OPERATIONS HYDROLOGICAL ASSESSMENT
MEDICINE BOW & SIERRA MADRE MOUNTAIN RANGES, LEVEL II STUDY

<u>Task</u>	<u>Estimated Cost</u>
1. Project Meetings	\$ _____
2. Review and Summarization of Previous Studies	\$ _____
3. Analysis of Past Operational and Observational Data	\$ _____
4. Impact and Cost Benefit Assessment	\$ _____
5. Recommendations and Cost Estimates	\$ _____
6. Discretionary Task	\$ _____
7. Draft Report	\$ _____
8. Report Presentations	\$ _____
9. Final Report and Deliverables	\$ _____

PROJECT TOTAL COST

Including Labor, Reimbursable, and Subconsultant Expenses \$ _____

In the spaces below, provide the Labor and Reimbursable Expenses of the prime consultant along with any additional Subconsultant Expenses which are included within the above tasks. These three amounts when added together should equal the project total cost listed above.

Proposed Labor Expenses (prime only)	\$ _____
Proposed Reimbursable Expenses (prime only)	\$ _____
Proposed Subconsultant Expenses	\$ _____

Firm Name and Address: _____

Signature of Firm President or Authorized Agent: _____
Employer Identification Number: _____

NOTICE TO ALL PROPOSERS

Any Engineering Firm or Corporation wishing to enter into a contract with the Wyoming Water Development Commission must possess a Certificate issued by the Board of Registration for Professional Engineers and Professional Land Surveyors to practice engineering or land surveying in Wyoming. Geologists must possess a Certificate from the Board of Registration for Professional Geologists to perform work of a geologic nature.

Any Firm or Corporation wishing to enter into a contract with the Wyoming Water Development Commission must possess a Certificate of Good Standing issued by the State of Wyoming Office of the Secretary of State to conduct business in Wyoming.

Contracts will not be finalized until Firms have met these requirements.



WYOMING WATER DEVELOPMENT OFFICE

6920 Yellowtail Road
Cheyenne, WY 82002

Phone: (307) 777-7626
wwdc.state.wy.us

Mark Gordon
Governor

Commissioners

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Robert R. Choma	John H. Lawson
Lee Craig	Sheridan Little
Clinton W. Glick	Larry Suchor
Ronald E. Kailey, Jr.	Bill Yankee

Jason Mead, P.E.
Interim Director

REQUEST FOR PROPOSAL NO. 22-9 **CRITICAL AGING IRRIGATION INFRASTRUCTURE ASSESSMENT, LEVEL I** **STUDY**

SEALED NON-PRICED PROPOSALS, INCLUDING 10 PAPER COPIES AND 1 DIGITAL COPY IN PDF FORMAT ON A CD OR USB DRIVE, WILL BE RECEIVED by the WYOMING WATER DEVELOPMENT COMMISSION (Commission), 6920 Yellowtail Road, Cheyenne, Wyoming 82002 (82009 if shipping by means other than US Postal Service) until 1:00 p.m., April 14, 2022, at which time they will be publicly opened for PROFESSIONAL SERVICES required to conduct the Critical Aging Irrigation Infrastructure Assessment, Level I Study.

SEALED PRICE PROPOSALS, INCLUDING 1 PAPER COPY AND 1 DIGITAL COPY IN WORD FORMAT ON A CD OR USB DRIVE, shall also be submitted in a single separate sealed envelope containing itemized prices accompanying the copies of the non-priced proposals. These envelopes shall be opened after the firms to be interviewed have been selected and prior to the interviews. Neither proposal contents nor prices will be released at the proposal openings.

Any inquiries regarding this request for proposal should be directed to Chace Tavelli, Wyoming Water Development Office, 6920 Yellowtail Road, Cheyenne, Wyoming 82002, Telephone (307) 777-7626.

Your proposal shall be based on the following attachments "A", "B", and "C".

DATED THIS 17TH DAY OF MARCH, 2022.

Jason Mead, Interim Director
Wyoming Water Development Office

ATTACHMENT "A"

A. INFORMATION FOR PROPOSERS:

1. In order to be considered for an award, each proposal must bear the signature of the proposer or his authorized representative, the work must be supervised by a Wyoming licensed engineer/geologist, as appropriate, and the firm must be registered with the State of Wyoming.
2. Proposals received after the date and time specified will not be accepted or considered. **This requirement is strictly enforced.**
3. After the successful proposer is selected, the Commission will negotiate a final contract, scope of services, and contract price based on, but not limited to, the work items in Attachment "B". The Commission, at its sole discretion and through duly authorized contract amendments, may request the selected consultant to complete additional work or phases beyond the scope of services included in the initial contract.
4. After the final contract is negotiated and work begun, payment to the successful proposer shall be based on an itemized billing of work completed as derived from the approved hourly rate and reimbursable expenses price schedule approved by the Commission and contained in the contract for services. A total contract amount and an amount for each task will be specified in the contract. The total contract amount is controlling and shall not be exceeded without prior written consent of the Commission. Requests for payment must be made on forms provided by the Commission, or an approved equivalent form, and must be properly executed. Payment will be made no more often than monthly.
5. The successful proposer shall furnish all materials, equipment and labor necessary to complete the study.
6. The State of Wyoming reserves the right to reject any or all proposals submitted.
7. The successful proposer shall be fully insured as to save the State of Wyoming harmless from any claims involving the employees or equipment used by the successful proposer and subconsultants while executing this service.
8. The successful proposer shall be familiar with all applicable state laws. The attention of prospective proposers is called to the requirements as to the conditions of employment to be observed and to all applicable laws affecting the work, particularly to the procurement procedures required by Section 9-2-3204 and Section 9-23-101 through 9-23-107, Wyoming Statutes.

9. No prospective proposer shall withdraw their proposal for a period of thirty (30) days after the actual date of proposal opening.

10. The Wyoming Water Development Office (Office) shall provide all possible assistance and cooperation to firms preparing proposals for this project. The proposer should understand that verbal comments may be subject to misinterpretation and are in no way binding on the individual, the Office, or the Commission. If questions arise concerning any aspect of this request for proposals, the proposer should request clarification in writing. A copy of this request, as well as the written response, shall be provided to all firms receiving a request for proposals on the project.

11. The State of Wyoming hereby notifies all prospective proposers that it will affirmatively ensure that in any contract entered into pursuant to the advertisement, small or minority business enterprises will be afforded full opportunity to submit proposals in response to this invitation and will not be discriminated against on the grounds of age, race, religion, color, sex, national origin, or ancestry in consideration for an award.

12. The proposer hereby agrees that should they be awarded this contract, proposer shall not discriminate against any person who performs work thereunder because of age, race, religion, color, sex, national origin or ancestry.

13. The proposer has not and will not attempt to induce any other person or firm to submit or decline to submit a proposal for the purpose of restricting competition.

B. PROPOSAL FORMAT:

The proposal shall be prepared and contain the following information:

1. Cover letter submitted with proposal.
2. Title page.
3. Table of Contents.
4. Introduction.
5. Scope of Services:

A detailed Preliminary Scope of Services is included in Attachment "B". State how you intend to conduct the activities presented in the Preliminary Scope of Services, and list all assumptions made in preparing the proposal. The proposed work/approach should be presented in the same format as in Attachment "B" and should address all the requirements contained therein.

6. Proposed Scope Alterations:

If you feel that the Preliminary Scope of Services (Attachment "B") may be improved by additions, deletions, or changes, please elaborate in this section. State your alterations as specific task changes for the activities presented in the Preliminary Scope.

7. Qualifications:

- a. Briefly show your firm's capability for performing this project.
- b. List project team members and identify the project manager. As applicable, include a certification that the work conducted will be supervised by a professional engineer licensed in Wyoming as required by the provisions of WS 33-29-114 through WS 33-29-139 and a professional geologist licensed in Wyoming as required by the provisions of WS 33-41-101 through 33-41-121. Provide the Wyoming Board of Professional Engineer's license number of your firm.
- c. State which of your offices will perform the project work.
- d. Provide a resume for each key project member.
- e. Identify all proposed subconsultants, list the work to be performed by the proposed subconsultants, and provide statements of project specific qualifications for each subconsultant.
- f. If the proposer claims to be a "resident firm" as defined by Section 9-23-102, Wyoming Statutes, the proposer must meet statutory requirements. The proposal from a resident firm must include sufficient information to demonstrate that the firm will meet these statutory requirements.

8. Listing of current clients whose interests may compete or conflict with the project described herein.

9. Work Schedule. Assume a Notice to Proceed will be issued mid-June. Provide a bar graph schedule depicting the duration of each work item and the proposed phasing of the work.

10. Previous Work for Project Sponsor. List any projects for which your firm has been under contract to the project sponsor during the period of 2017 to 2021. This list should include individual project names, dates and contract amounts.

C. PRICE PROPOSAL:

Submitted with the non-priced proposal, but in a separate single sealed envelope, shall be one copy of the price proposal(s) in paper copy and one digital copy in Word format on a CD or USB drive. The envelope shall be labeled with the project name and shall indicate that it contains the price proposal(s).

Two price proposals may be submitted. One proposal, prepared in the format of Attachment "C", must give costs to perform the Preliminary Scope of Services as specified in Attachment "B". A second price proposal may also be submitted, in a format similar to Attachment "C", specifying costs for the Preliminary Scope of Services with Alterations as per Item B.6 (Proposed Scope Alterations). The proposed hourly rate and reimbursable expenses price schedules for each firm involved shall be included in each price proposal, and shall be in Word format.

D. CONTRACTOR SELECTION PROCEDURES:

The Commission will conduct the selection process in accordance with Sections 9-2-3204 and 9-23-101 through 9-23-107, Wyoming Statutes.

For those firms requesting consideration, the Commission has evaluated current statements of qualifications and performance data on file with the Office together with any applications submitted, and has selected not less than three (3) firms (if available) considered qualified to perform the required professional services to submit proposals. The Commission based this selection on the following:

- (i) Except as provided in paragraph (ii) of this subsection, the Commission selected firms that are resident firms as defined by Section 9-23-102, Wyoming Statutes. Consideration between these qualified resident firms were based upon:
 - (A) The ability of professional personnel;
 - (B) Past performance;
 - (C) Ability to meet time requirements;
 - (D) Location;
 - (E) Current and projected workloads;
 - (F) The volume of work previously awarded to the firm by the Commission;
 - (G) The equitable distribution of contracts among the firms considered qualified.
- (ii) Nonresident firms may be selected if no firms on file, together with any applications submitted for the project, are resident firms as defined by Section 9-23-102 or if the resident firms are determined not qualified by the WWDC. Consideration of qualified nonresident firms shall be based upon the considerations listed in subparagraphs (i) (A) through (G) of this subsection.

The goal of the initial screening process was to come up with a short list of five (5) qualified

firms to provide the necessary professional services. Firms selected for the short list were asked to submit proposals.

- 1) If there were five (5) or more qualified resident firms, five (5) of those firms were selected.
- 2) If there were four (4) or less qualified resident firms, those firms were selected.
- 3) If there were zero (0) qualified resident firms, the screening process looked to add qualified non-resident firms based on the requirements of Wyoming Statutes, Section 9-23-105, to make a short list of five firms.

The Commission will evaluate proposals submitted by the short-listed firms and, based upon these proposals, select not less than three (3) firms, if possible, to be interviewed. The qualifications, experience, and expertise of the project team and contents of the work proposal will be considered in selecting firms to be interviewed. Price will not be considered in determining which firms will be invited to the interview process.

The interview shall be recorded and include discussion of each firm's approaches to the project, projections of project costs, qualifications, ability to furnish required professional services, use of alternative methods for furnishing required professional services, and an estimated fee based on the Commission's description of the work. The estimated fee and other information provided throughout this process may be used as a basis for selection by the Commission of the most appropriate firm for contract negotiations.

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ATTACHMENT "B"

A. AUTHORIZATION:

The 2022 Wyoming State Legislature has authorized the Wyoming Water Development Commission to conduct the study described herein. The Consultant will complete the tasks and requirements outlined in D. Scope of Services.

B. PROJECT DESCRIPTION:

1. Location. This is a statewide project.
2. Purpose. To perform a Critical Aging Irrigation Infrastructure Assessment, Level I Study.
3. History. In 2021 the WWDO augmented the bi-annual Irrigation System Survey by adding several new questions that were a direct result of a 2020 legislative interim topic to consider aging infrastructure. The new questions asked irrigation entities to identify structures and conveyances by type and to include information regarding age and condition as well as what challenges they are facing. One of the most identified challenges was aging infrastructure. Aging infrastructure has become a pressing topic in the State with issues like the LaPrele Dam and the Goshen Irrigation District Tunnel collapse. To address the issue the WWDC sought funding from the 2022 Wyoming State Legislature to assess the State's critical aging irrigation infrastructure.

This Critical Aging Irrigation Infrastructure Assessment Level I Study will build upon the 2021 Irrigation System Survey, in a phased approach, with progression to each phase approved by the WWDC and SWC. Phase I will draw upon the expertise of a selected consultant team and WWDO staff. This phase will be to review existing studies, evaluations, and other information; define infrastructure criticality; provide outreach and establish relationships with owners of the infrastructure such as the Bureau of Reclamation and other entities; determine comparison criteria; identify assessment technology needs to evaluate facilities; develop a preliminary list of facilities to consider in future phases; provide a recommended scope and budget for the subsequent phases of work; identify potential funding partnerships.

The overall goals of the Aging Irrigation Infrastructure program are to assist irrigation entities into the future by creating a program to:

- Develop prioritized projects to address identified aging infrastructure
- Identify funding needs and funding partnerships
- Encourage and help entities secure outside funding
- Advance priority projects to Level III

C. PROJECT REQUIREMENTS:

1. Monthly Progress Reports and Billing Statements

The Consultant shall submit a brief monthly progress report outlining the study status, progress, and results to date, regardless of whether or not a billing statement is submitted, on or before the last working day of the month.

Each billing statement must include a task-by-task report justifying the cost items contained in the billing statement. The monthly progress report may be used as the justification for the billing statement as long as all cost items covered in the billing statement are addressed in the progress report.

2. Computer Models, Geographic Information System (GIS), Statement of Assumptions, Project Work File

a. If the Consultant writes or uses a computer program or spreadsheet as a part of this project, the Consultant shall submit to the Commission for approval all proposed program names and data formats prior to beginning work on that task. All data shall be submitted to the Commission in written and digital forms with the final report. Digital media shall be labeled by the Consultant to provide sufficient detail to access the information on the media. User manuals shall be submitted by the Consultant to the Commission providing complete documentation of computer programs developed under this project. The user manuals shall also contain the source code language and the type of computer equipment necessary to operate the program(s). The computer programs and spreadsheets (written and digital forms) are due on the same date as the final report, which contains the information generated by the programs.

b. If the Consultant develops, collects, and/or uses GIS data as a part of this project, the Consultant shall do so in accordance with the WWDC GIS Standards Technical Memorandum utilizing provided Geodatabase Templates. Links to GIS Standards Technical Memorandum are available at <https://water.geospatialhub.org/pages/wwdc-gis-standards>. A webinar on required GIS Standards, hosted by WWDC and WRDS, will be available following consultant selection and is strongly recommended.

The Consultant shall adhere to the following GIS standards:

(i) **FEATURE MAPPING.** The Consultant shall acquire the appropriate Geodatabase Template for feature mapping from <http://water.geospatialhub.org/search?groupIds=3e77928b1d0d49858b8916ca63ca5ca4> prior to any GIS work. Five Geodatabase Templates are available and are specific to project type. These templates define the organization and

naming requirements for feature classes, tables, and the required attributes within the feature classes. Data needed for the project and described in this contract may include core data or auxiliary data. Core data includes features which fit within one of the feature classes in the Geodatabase Template, whether newly created or acquired from another source. All core data shall be loaded into the Geodatabase Template and attributed according to the GIS data schema described in the GIS Standards Technical Memorandum. This shall include field attributes that indicate contract number, primary consultant, date modified, and accuracy. In certain circumstances, the consultant may need to provide a second set of core data in a format for the benefit of the project sponsor. This would occur when a project sponsor already has GIS data in a format that differs from the Commission format, or when an alternative format would provide more benefit to the sponsor than the Commission format (e.g., a different coordinate system, or database structure). In these situations, the consultant will provide core GIS data using the Geodatabase template, and a second core GIS dataset in the format that meets the needs of the project sponsor. Auxiliary data sets, include features which do not fit within one of the feature classes in the Geodatabase Templates, whether newly created or acquired from another source. The auxiliary data can be linked to the templates or managed separately as needed for project completion.

(ii) **FORMATS and STANDARDS.** Metadata are required for the geodatabase file, each included feature class (including those obtained from another source) and for each newly created feature. Metadata shall be completed in accordance with the GIS Standards Technical Memorandum. A detailed example for feature class metadata is provided in the GIS Standards Technical Memorandum and included in the Geodatabase Templates. This includes required information and default language, where appropriate, for each of the five metadata sections. Feature-level metadata requirements are also described in the Memorandum. Codes or values used in attribute fields, which are not included as part of the core data templates, shall be defined in the metadata. GIS data shall be saved in a Decimal Degree Coordinate system with a NAD83 datum, specifically “GCS_North_American_1983,” as indicated in the GIS Standards Technical Memorandum. In addition to the Project geodatabase(s) and map file(s), GIS deliverables may also include linked nonspatial data/databases (.accdb, .xlsx), rasters (various formats), photographs (.jpg), maps (.pdf), and file integrated metadata references (.xml, .txt). Core data shall be delivered within the Geodatabase Template. Auxiliary data can be provided as .shp files and metadata are required.

(iii) **MAPS.** Project GIS deliverables shall be organized in such a way as to allow easy replication of the maps found in the final project report. The GIS project files should be provided as ESRI ArcGIS mxd, or aprx files saved with relative path names to data sources.

c. To facilitate the Commission's accurate evaluation of the Consultant's work product, computations, conclusions and recommendations, the Consultant shall:

(i) Include in the final report a section describing the assumptions and methodology used by the Consultant in generating the data and conclusions contained in that chapter.

(ii) Maintain a project work file containing the materials used in project analysis. This file will be available for review by the Commission and should be organized in such a way as to allow replication of the steps and procedures used by the Consultant to reach the conclusions described in the study.

(iii) Prepare a project notebook containing a description of the assumptions and methodologies used in the project analysis. The notebook shall be organized in such a way as to allow replication of the steps, calculations, and procedures used by the Consultant to reach conclusions, described in the draft final report. The project notebook shall be submitted with the draft final report.

3. Cost Estimates

The Consultant shall use the following guidelines in calculating Level III cost estimates.

WWDC ELIGIBLE PROJECT COSTS

CONSTRUCTION COSTS

Itemized Cost of Each Project Component	\$ _____
	\$ _____
	\$ _____
Cost of Project Components TOTAL	\$ _____ (subtotal #1)
Construction Engineering Cost (subtotal #1 x 10%)	\$ _____
Components + Construction Engineering Costs	\$ _____ (subtotal #2)
Contingency (subtotal #2 x 15%)	\$ _____
Construction Cost Total (subtotal #2 + Contingency)	\$ _____ (subtotal #3)

PRE-CONSTRUCTION COSTS

Preparation of Final Designs & Specifications (subtotal #1 x 10%)	\$ _____
Permitting and Mitigation	\$ _____
Legal Fees (Title of Opinion Only)	\$ _____
Acquisition of Access and Rights of Way	\$ _____
Pre-construction Costs Total	\$ _____ (subtotal #4)

TOTAL WWDC ELIGIBLE PROJECT COST

Total WWDC Eligible Project Cost (subtotal #3 + subtotal #4)	\$ _____ (subtotal #5)
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WWDC INELIGIBLE PROJECT COSTS

Itemized Costs of Ineligible Project Components	\$ _____
	\$ _____
	\$ _____
	\$ _____
Additional Cost for Construction Engineering	\$ _____
Additional Cost for Preparation of Final Designs & Specifications	\$ _____
Total WWDC Ineligible Project Costs Total	\$ _____ (subtotal #6)

TOTAL PROJECT COST

Total Project Cost (subtotal #5 + subtotal #6) \$ _____

MATERIALS ONLY TOTAL

Materials Only Total Project Cost ((Subtotal #1 + (Subtotal #1 x 10%)) \$ _____

Note: Any inflation costs, as determined by the consultant and Office project manager, will be applied to the Total Project Cost.

4. Final Report

The Consultant shall use the Contract Scope of Services as the outline for draft and final reports so that Consultant compliance with Contract provisions can be verified. If the final report contains information of an engineering nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by a Professional Engineer licensed in the State of Wyoming. If the final report contains information of a geologic nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by a Professional Geologist licensed in the State of Wyoming. If the final report contains information of both an engineering and geologic nature, the cover of the final report, all plates, and the executive summary must be stamped and signed by both a Professional Engineer and a Professional Geologist licensed in the State of Wyoming.

5. Final Report - Digital Format

In addition to the paper submittal described in Section C.4 above, the Consultant shall also provide the final documents and related materials in a digital format. This digital report shall be contained on CD(s), USB drive(s), or other media as approved by the Office project manager, and shall be in Searchable Image Adobe Acrobat format.

6. Anticipated Project Funding Assistance

The Consultant shall clearly identify project components eligible for Commission funding, both in cost estimates and in project mapping. The Consultant shall verify project component funding eligibility with the Office project manager prior to commencing any

economic analysis. Unless otherwise directed by the Office project manager, the Consultant shall assume that projects will be funded with a 67% grant. The remaining 33% shall be acquired from external sources (for municipal projects); or from external sources and/or a loan from the WWDC (for agricultural projects). The Commission loan will be financed at an interest rate of four percent (4%) with a term to be specified by the Office project manager. If funding is anticipated from another agency, such as the Office of State Lands and Investments or the USDA Rural Utilities Service (RUS), the Consultant shall prepare cost estimates for system components not eligible for Commission assistance in a format and level of detail acceptable to the potential funding agency.

If required in the Contract Scope of Services, the Consultant shall provide the information necessary to complete applications to RUS, the Office of State Lands and Investments, and any other identified funding sources.

7. Project Access

The Consultant shall be responsible for obtaining access as required for project tasks.

8. Stand-By Time

The Commission will not reimburse the Consultant for stand-by time charges for the Consultant's supervisory personnel.

9. Well Permitting

All wells developed under this program shall list the State of Wyoming, Water Development Office as the permittee. The Consultant shall be responsible for obtaining the permit.

10. Verification Log

After all casing has been installed in the well, the Commission may require that a geophysical log be performed on the well to verify casing placement. A copy of this log shall be included in the final report.

D. SCOPE OF SERVICES:

Task 1. Review of Existing Information

The Consultant shall gather and review existing information relevant to this study through any number of sources, including, but not limited to the: Wyoming Water Development Office (WWDO); Water Resources Data System (WRDS); Bureau of Reclamation (BOR); and Wyoming State Engineer's Office (WSEO). This includes reviewing WWDO project reports and information collected as part of the 2021 Irrigation System Survey as conducted by the WWDO River Basin Planning Section and WRDS, along with High Hazard Dam

information collected by the Wyoming State Engineer's Office, Safety of Dams Section. Deliverables under this task shall include a bibliography of information reviewed.

Task 2. Project Meetings

The Consultant shall plan for a scoping meeting to be held with the Office to discuss the project approach for each task. The Consultant shall plan for up to eight stakeholder meetings in various locations around the State to present the project and to gather input from water users. The locations will be determined with the Office's input and should be focused on areas with agricultural infrastructure. The Consultant, working with the Office, shall identify interested parties and use appropriate means to invite said constituents. The Consultant shall prepare all presentation materials including maps and other visual aids as necessary to explain the project and anticipated timelines. The Consultant shall keep meeting minutes and submit the minutes to the Office.

The Office will provide input throughout the project; therefore, the Consultant shall plan to hold regular meetings with Office staff for coordination and planning purposes. Where scoping tasks refer to Office involvement the Consultant can plan for meetings with the Office. The Consultant will work with the Office to develop meeting agendas and will record and submit meeting minutes. Virtual coordination meetings are acceptable; however, workshops with the Office may be necessary.

The Consultant shall plan to present assessment project updates to the WWDC and Select Water Committee (SWC) at their regularly scheduled joint meetings to be held November 2022, May 2023, and August 2023. For planning purposes, the November meeting will be in Casper; the May meeting will be in Cheyenne; and the August meeting will be at a location yet to be determined.

Task 3. Criticality Definition and Determination of Ranking Criteria

Based on Tasks 1 and 2 the Consultant, with the Office, will define criticality and an approach for ranking critical aging irrigation infrastructure projects. Interaction with the Office for the completion of this task may be in the form of a workshop. Information gathered from the review of existing materials in Task 1 and stakeholder meetings held as part of Task 2 shall assist in the completion of this task and will further define the depth and breadth of the critical aging irrigation infrastructure problem in the State of Wyoming such that an applicable methodology for future assessment efforts can be determined. Deliverables from this Task shall include a definition of "criticality" and a procedure for ranking aging irrigation infrastructure projects across the State of Wyoming.

Task 4. Infrastructure Assessment Plan

The Consultant shall develop an Infrastructure Assessment Plan (IAP) to perform a reconnaissance level statewide inventory, assessment, and ranking of critical agricultural infrastructure projects. Taking criticality and project ranking into account, the Consultant,

with the Office, will define the metrics for implementation of the IAP including, but not limited to, additional information to be collected; method(s) for data collection, compilation, structuring and GIS mapping; issues and constraints for replacement or rehabilitation of infrastructure (e.g. shovel ready, ability to pay, willingness to participate with funding programs, permitting, etc.); continued outreach; and development of reconnaissance level cost estimates for comparing projects and defining the magnitude of the aging/critical infrastructure problem in the State. The IAP should consider the need for site visits. Once the IAP has been developed and approved by the Office, the Consultant will implement the plan. For GIS mapping products, Office requirements will be followed and implemented per Attachment “B”, Section C Project Requirements, item #2.

Task 5. Infrastructure Rehabilitation Plan/Recommendations

The Consultant shall detail the results from implementing the Infrastructure Assessment Plan in Task 4 into a reconnaissance level Infrastructure Rehabilitation Plan (IRP). The Consultant shall recommend and record all funding opportunities for studies and projects. These opportunities may include, but not be limited to, programs through the WWDC, BOR, and NRCS. The recommendations will include, but not be limited to, funding sources; program descriptions; constraints; application needs; grant/loan percentages; and trigger dates. The Consultant should be mindful that the deadline for WWDC Level I and II study applications is March 1, and Level III applications is September 1, each year.

The Consultant shall also develop recommendations for the Office which may include, but not be limited to, additional phases to accomplish the goals and objectives of addressing critical aging agricultural infrastructure issues in the State of Wyoming; potential studies; and if necessary, improvements to the WWDC Irrigation System Survey, WWDO Irrigation project planning scopes, GIS coverages, and data structuring.

Task 6. Phase II Development

The Consultant, with the Office, shall develop a Scope of Work and cost estimates for a Phase II necessary to further refine assessments and results from this study. It is anticipated that a second phase will prescribe a more on-the-ground approach to assessing the condition of critical infrastructure identified in the reconnaissance level Infrastructure Rehabilitation Plan. This phase may develop feasibility level assessments, recommendations, and cost estimates.

Task 7. Discretionary

The Consultant shall place \$50,000 of the project budget in this discretionary task. The task is to allow changes in the scope as the project develops or as new issues are discovered. The Consultant and Office project manager will agree on any work to be accomplished under this task and the cost of the work. No work will be initiated, or funds spent for this task, without direct approval from the Office project manager.

Task 8. Draft Products

The Consultant shall submit to the Office five (5) hard copies of a draft report describing the results of all work completed in this study, no later than September 1, 2023. Five (5) CD or USB drive copies containing the draft report in a text-recognized Adobe Acrobat (pdf) format will also be provided, along with two (2) CD, USB drive, or portable hard drive copies of the draft GIS (if applicable) which comply with the standards specified in Attachment “B”, Section C Project Requirements, item #2. The PDF version will be completely assembled into one standalone file, and shall be exactly the same version as the hard copy. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only).

Task 9. Presentation of Results

Upon completion of the draft report, the Consultant shall present the findings of the study at the November, 2023 WWDC/SWC workshop. Information and materials to be presented at the workshop shall be developed by the Consultant after consultation with the Office project manager. The Consultant shall be responsible for developing a record of the workshop which shall become an appendix in the final report. The record will include any materials presented or handed out at the meeting; a record of attendance; any written comments, statements, or exhibits received; recorded testimony, or a memorandum summarizing the views and comments presented at the meeting; and other pertinent data. This presentation is independent of the meetings included under Task 1.

Task 10. Final Report and Deliverables

After incorporation of the Office’s and the Sponsor's review comments on the draft report, the Consultant shall submit one (1) final report and one (1) executive summary in hard copy along with one (1) CD or USB drive containing the final report and executive summary in a text-recognized Adobe Acrobat (pdf) format to the Office 1 to 2 weeks prior to the final deadline for final comparison purposes. The pdf version shall be completely assembled into one stand-alone file and shall be exactly the same version as the hard copies. Any discrepancies discovered by the Office project manager between the hard copy and electronic copy during this final comparison are the responsibility of the Consultant to correct.

Upon completion of the final quality assurance process by the Office project manager, WRDS will assign an URL for the online posting of the final report and the Consultant shall submit all final documents and materials to the Office on or before December 31, 2023. These final documents and materials shall include: 1) Twelve (12) [MIN] hard copies of the final report and 2) Twelve (12) [MIN] stand-alone hard copies of the executive summary. The executive summary shall outline the purpose, findings, recommendations and configuration of the project, and shall include detailed cost estimates. The summary should

not exceed ten (10) pages. Any final reports which have been submitted in three-ring notebook format shall have spine labels clearly identifying the project, Consultant and date.

Four (4) [MIN] CD or USB drive copies containing the final report and executive summary in a text-recognized Adobe Acrobat (pdf) format will be provided. The pdf version will be completely assembled into one stand-alone file and shall be exactly the same version as the hard copy. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only).

Two (2) [MIN] CD or USB drive copies containing the final report and executive summary in original formats (Word, Excel, etc.) and in a text-recognized Adobe Acrobat (pdf) format. The pdf version will be completely assembled into one stand-alone file. All electronic files shall be exactly the same version as the hard copies. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only).

Three (3) [MIN] CD or USB drive copies of the hydraulic model project file and all associated files shall be provided if applicable. The files shall create a working model that is fully functional and can be modified. In addition to the above, one (1) electronic copy of the hydraulic model project file and all associated files will be included in the project notebook. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only).

Three (3) [MIN] CD or USB drive or portable hard drive copies of the GIS data according to the WWDC GIS Framework Plan and Technical Memorandum. See Attachment “B”, Section C Project Requirements, item #2 for further details. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only).

One (1) project notebook containing the working files used in this project will be provided. The project notebook files shall include descriptions of the assumptions and methodologies used in the project analysis. The notebook shall be organized in such a way as to allow replication of the steps, calculations, and procedures used by the Consultant to reach the conclusions described in the final report. The preferred format for the project notebook is digital, provided on a CD or USB drive. Each CD or USB shall be labeled with the project name, contents of the media and date (month and year only). Any project notebooks which have been submitted in three-ring notebook format shall have spine labels clearly identifying the project, Consultant and date.

REQUEST FOR PROPOSAL NO. 22-9 (Cont'd.):

ATTACHMENT "C"
PRICE PROPOSAL SUMMARY
CRITICAL AGING IRRIGATION INFRASTRUCTURE ASSESSMENT, LEVEL I
STUDY

<u>Task</u>	<u>Estimated Cost</u>
1. Review of Existing Information	\$ _____
2. Project Meetings	\$ _____
3. Criticality Definition and Determination of Ranking Criteria	\$ _____
4. Infrastructure Assessment Plan	\$ _____
5. Infrastructure Rehabilitation Plan/Recommendations	\$ _____
6. Phase II Development	\$ _____
7. Discretionary	\$ <u>50,000</u>
8. Draft Products	\$ _____
9. Presentation of Results	\$ _____
10. Final Report and Deliverables	\$ _____

PROJECT TOTAL COST

Including Labor, Reimbursable, and Subconsultant Expenses \$ _____

In the spaces below, provide the Labor and Reimbursable Expenses of the prime consultant along with any additional Subconsultant Expenses which are included within the above tasks. These three amounts when added together should equal the project total cost listed above.

Proposed Labor Expenses (prime only)	\$ _____
Proposed Reimbursable Expenses (prime only)	\$ _____
Proposed Subconsultant Expenses	\$ _____

Firm Name and Address: _____

Signature of Firm President or Authorized Agent: _____
Employer Identification Number: _____

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

MUNICIPAL/JOINT POWERS WATER BOARD WATER SYSTEMS

Project Name: Glendo Water Master Plan

Program: New Development

Project Type: Municipal Water System

County: Platte

Sponsor: Town of Glendo

WWDO Recommendation: Level I

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The Town of Glendo (Glendo) is requesting a water master plan to evaluate their water system. Glendo is experiencing growth from a new subdivision and also faces maintenance questions and concerns regarding the current system. A Master Plan would help the Town Council evaluate and prioritize planning, rehabilitation, upgrades and management of the system. The study would evaluate transmission and distribution lines, hydrants, valves, storage, and wells. The study would also investigate conveyance losses, develop robust system mapping, identify improvement projects, and evaluate funding sources for capital improvement.

Project Manager: George Moser

I. PROJECT DESCRIPTION

Glendo's most recent water master plan was developed in 2009 with a 25-year planning horizon. Glendo has experienced growth from a new subdivision as well as large seasonal demands due to an influx of summer residents. In addition, staffing changes in Glendo have led to a lack of knowledge regarding current infrastructure. Furthermore, Glendo also requests an evaluation and update of their current GIS.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Glendo Water Supply Level II Study, 2009	II	99/33	2006/08	I	\$ 775,000	2008/09
Glendo Well	III	121/38	2007/09	I	\$ 780,000	2012/13

2. Describe the location of the project:

Glendo is located on Interstate 25 in Platte County, Wyoming and is located southwest of Glendo Reservoir and north of Horseshoe Creek. Glendo is approximately 75 miles east of Casper and 100 miles north of Cheyenne. Glendo is within the Burlington Northern/Santa Fe railroad corridor. Glendo is located near the historic California, Oregon, and Mormon Trails.

3. Summarize the request:

A Master Plan would assist Glendo with evaluating the existing system, evaluating deficiencies, and identifying and ranking improvement projects. The plan would serve as a framework to establish project priorities and to perform financial planning necessary to meet those priorities. It would also provide reconnaissance-level information regarding costs and scheduling.

4. Summarize the reasons for the request:

Glendo is experiencing growth from a new subdivision, and has experienced turnover in City staff. An updated water master plan would help establish the needs of the current system, evaluate sufficiency once the new subdivision is developed, and help memorialize information which may be lost due to staffing changes.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes

A. If not, is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

N/A

2. Project Priority According to WWDO Criteria: Acct I - Priority 8: LI Reconnaissance Studies

3. Will the project serve at least 15 water taps? Yes

A. Number of Taps: 241

4. Is the sponsor eligible for funding from other state or federal programs? Yes

A. If so, what are they (RUS, SRF, other)? RUS, and SRF

5. Is the Sponsor under any federal (EPA) mandates to improve its system? (e.g., Administrative Orders, violations, actions taken, etc.)?

No

6. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system?

No. The sponsor would consider regional solutions; however, no other entities have expressed interest and the nearest Public Water Supply system is located some distance east.

7. What is monthly water bill for 5,000 gallons? \$29.50

A. 20,000 Gallons? \$52.00

8. Can the project be delayed or staged? Yes

A. Should it be? No

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. EPA Public Water System (PWS) Identification Number: WY5600231

B. Groundwater

(1) Number of Wells: 2

(2) Primary Supply Aquifer(s) or Formation(s): Converse Sand and divisions within the Hartville Formation

(3) Total Average Production Yield of All Wells (GPM): 425 gallons per minute

C. Surface Water

(1) Source Name(s): N/A

(2) Type of Diversion(s) (Headgate, Infiltration Gallery, Pumps, Etc.): N/A

(3) Total Average Diversion Yield (CFS or GPM): N/A

D. Springs

(1) Name of Spring(s): N/A

(2) Total Average Production Yield of All Springs (CFS or GPM): N/A

E. Water Rights

(1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights?

Yes. The Downey Well #1, under Statement of Claim No. U.W. 433, and the Thomas Memorial Well #1 under Permit No. U.W. 198936. In addition, the Cemetery landscaping water is supplied by the Cemetery Well under Well Registration No. U.W. 548; however, this well is not part of the municipal supply.

F. Transmission Pipeline

(1) Maximum Capacity of the Transmission Pipeline(s) (Gallons per Day): 648,000 gallons per day

(2) Increased Capacity Needed (If Known) (Gallons per Day): Unknown

(3) Approximate Distance from Source(s) to Distribution System: 1-2 miles

(4) Transmission Pipe Diameter(s): 10-inch PVC and 6-inch AC

(5) Type of Transmission Pipe Material(s): Mixture of PVC and AC

(6) Age of Transmission Pipeline(s): 10 years old to "unknown"

(7) Condition of Transmission Pipeline(s): Good to poor

(8) Does the applicant possess clear title to transmission corridor easements? Yes

G. Water Storage

(1) Raw (Volume and Tank Description): N/A

(2) Treated (Volume and Tank Description): A single tank with 285,000 gallons, and a 3-tank site with 216,000 gallons (comprised of 68,000 gallons, 106,000 gallons, and 42,000 gallons individually)

H. Treatment

(1) Specify Water Treatment (None, Chlorination, Filtration, Etc.): Chlorination

2. Existing Water Distribution System

A. Is the water use metered? Yes

B. Are billings based on meter readings? Yes

C. Identify unmetered usage (e.g., irrigation of parks, cemeteries, fire protection, etc.):

Parks and Fire Protection

D. Average Day Demand Water Usage (Gallons per Capita per Day): 91 gpcpd (est.)

E. Maximum Day Demand Water Usage (Gallons per Capita per Day): 182 gpcpd (est.)

F. Peak Hourly Demand Water Usage (Gallons per Capita per Day): 364 gpcpd (est.)

G. Distribution Pipe Diameter(s): 6-inch

H. Type of Distribution Pipe Material(s): varies

I. Age of Distribution Pipeline(s): new to unknown

J. Condition of Distribution Pipeline(s): good to poor

K. Estimated System Water Losses (Percentage): 9% (est)

L. Describe any fire flow protection that the system provides: Hydrants

M. What water conservation measures are employed?

Monitoring for leaks and voluntary morning and evening watering.

N. Is there an independent raw water irrigation system? No

(1) Raw Water System Capacity (Gallons per Day): N/A

(2) Average Annual Raw Water Usage (Gallons per Year): N/A

3. Demographic Information and Existing Water Service Area

- A. Population (2010 Census): 205 B. Current Population Estimate: 195
- C. Does the applicant have a comprehensive planning boundary? No
- (1) If so, what is the estimated additional population that may be served in the future? N/A
- D. How many taps are served within the corporate limits/JPB service area? 235
- E. How many taps are served outside of the corporate limits/JPB service area? 6
- F. Identify names of other water system served: N/A
- G. Identify any existing planning reports (municipal or county) that address growth management in the project area. Provide titles and how copies of the reports could be obtained:
- None known

4. Financial Information

A. Rates

- (1) Tap Fee(s) – Residential: \$1,800
- (2) Tap Fee(s) – Commercial: \$2,000
- (3) Average Residential Monthly Water Bill and Corresponding Gallons Used:
\$32.50 for 7,000 gallons
- (4) Water Rates (Provide rates for all tiers and categories of use. Attach additional pages as needed.):
\$25.00 for the first 2,000 gallons and \$1.50 for each additional 1,000 gallons
- (5) Identify any local conditions that affect water rates (e.g., flow-through for frost prevention, etc.):
Occasional flow-through for frost prevention, but not in the last few years.

B. Financial Statement (of Water Utility)

(1) Revenues

a. Annual Revenues Generated from Water Sales:	\$	66,805
b. Annual Revenues from Tap Fees:	\$	21,600
c. Annual Revenues from Other Sources:	\$	0
d. Total Annual Revenues:	\$	88,405

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$	62,158
b. Annual Payments for Debt Retirement:	\$	21,600 ^A
c. Annual Payments to a Repair and Replacement Fund:	\$	0
d. Annual Payments to an Emergency Fund:	\$	0
e. Annual Payments for Other Purposes:	\$	0
f. Total Annual Payments:	\$	83,758

(3) Other

a. Balance in Repair and Replacement Fund:	\$	0
b. Balance in Emergency Fund:	\$	49,545
c. Annual Cost of Water Quality Testing:	\$	1,072

A: Debt retirement is for WWDC and SRF loan payments

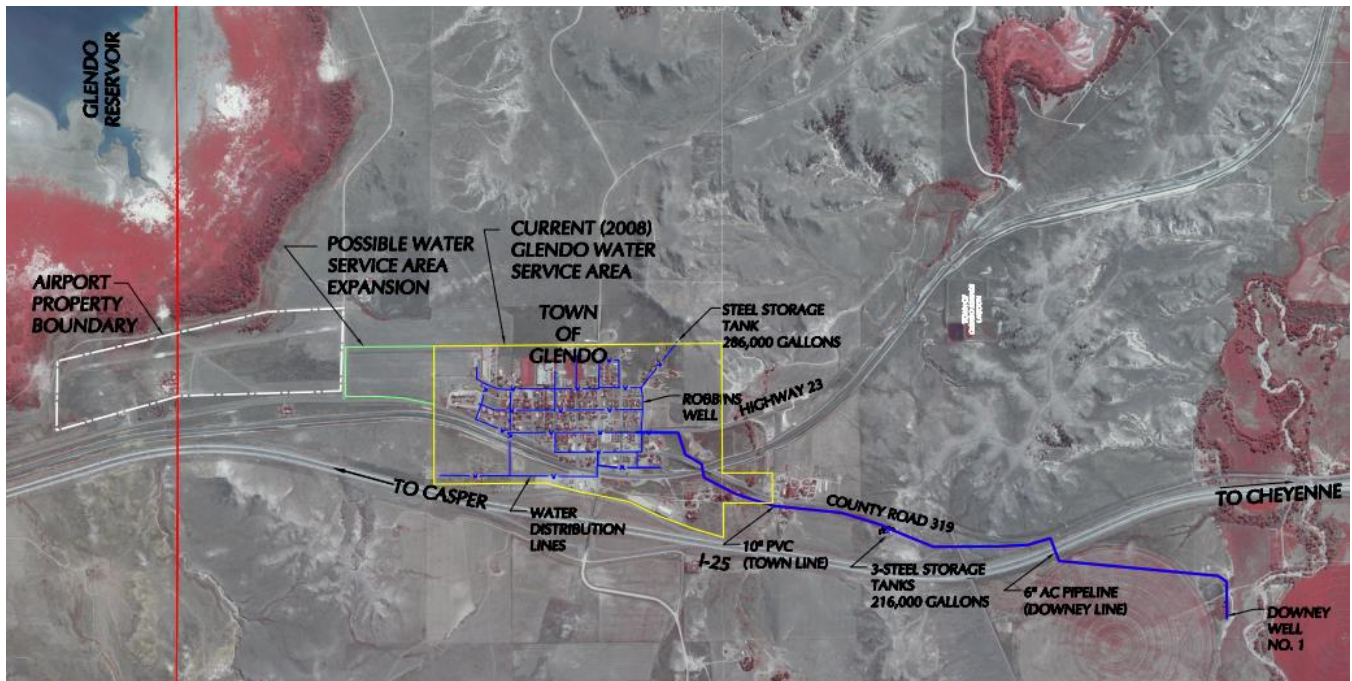
(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.?

Yes

a. If not, how is the difference subsidized?

If there are any unforeseen circumstances, they would be subsidized from the Emergency and/or General Fund.

PROJECT AREA MAPS



From: Glendo Water Supply Level II Study, Wyoming Groundwater, LLC, February 12, 2009.



From: Glendo Water Development Program Application

PHOTOS



Thomas Memorial Well



Piping Inside Well House



285,000-gallon storage tank



View of three-tank site from large storage tank

RESOLUTION

RESOLUTION 1-1-2022

A RESOLUTION SUPPORTING A LEVEL I RECONNAISSANCE MASTER PLAN STUDY APPLICATION TO THE WYOMING WATER DEVELOPMENT COMMISSION

WHEREAS The Town of Glendo, Wyoming, sees a current and future need to sustain and grow our current water system to meet the needs of the town.

WHEREAS The Town of Glendo is submitting an application for a Level I Reconnaissance Master Plan to the Wyoming Water Development Commission.

THEREFORE BE IT RESOLVED The Town of Glendo, seeing a need to sustain and grow our water system, approves the submission of an application to the Wyoming Water Development Commission for a Level I Reconnaissance Master Plan.

 2-16-22
Mayor & Date


ATTEST

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

MUNICIPAL/JOINT POWERS WATER BOARD WATER SYSTEMS

Project Name: Newcastle Water Master Plan

Program: New Development

Project Type: Municipal Water System

County: Weston

Sponsor: City of Newcastle

WWDO Recommendation: Level I

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The City of Newcastle is requesting a Level I water master plan study to fully evaluate the infrastructure of the City's water supply system. The study will evaluate the current condition of their water system and provide tools and guidance needed to assist in the planning, rehabilitating, upgrading, managing of the system, water storage and planning for future growth. It has been 22 years since the last Level I water master plan.

Project Manager: Keith E. Clarey, P.G.

I. PROJECT DESCRIPTION

The City of Newcastle is requesting a 2023 Level I water master plan to update the April 2000 Level I water master plan, to identify the components of their existing system, to evaluate the system, and to provide a schedule for improvements.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Newcastle Area Water Supply	III	96/118	2000/04	I	\$ 2,200,000	2004/2008
Newcastle 2015	III	23	2015	I	\$ 616,400	2020
Newcastle Well 2018	II	121	2018	I	\$ 495,800	2023
Newcastle Water System Improvements 2020	III	113	2020	I	\$ 113,900	2025

2. Describe the location of the project:

The City of Newcastle is located in Weston County and resides within the Cheyenne River Basin. The city has a population of ~3,500 people and they are served through 1,567 taps within and 39 taps outside the corporate limits. The city is supplied with Madison Formation groundwater from five (5) artesian wells located east of the city (1 of these wells scheduled to be connected summer 2022; Well 5 adds ~650 gpm) and the wells have a total average flowing yield of up to 5,000 gpm (at max. demand of 840 gpcpd). The supplied groundwater is treated by chlorination and stored in three (3) above-ground bolted steel tanks with a combined capacity of 5,370,000 gallons. There are seven (7) pressure zones in the system and booster pumps, as needed.

3. Summarize the request:

A Level I water master plan is requested by the City of Newcastle to evaluate the current condition of their water system and to provide the tools and guidance necessary to assist in the planning, rehabilitation, upgrading, and managing of their system. There have been several improvements to the system since 2000. The plan would serve as a framework to establish project priorities and to perform financial planning necessary to meet those priorities.

The plan would also provide reconnaissance-level information regarding costs and scheduling. Two of the three city's existing water storage tanks have a common inlet/outlet lines which create water quality concerns.

Some specific items of concern for the proposed 2023 Level I Study include:

- Replacing the Divide Avenue Pressure Control Station
- Separating the single water lines that supply each of Tanks 2 and 3 into separate lines
- Modeling the effects of the seven (7) pressure control zones on the distribution system
- Investigate ways to reduce the effects of water hammer and pressure peaking in the system (especially Zone 3; no pressure relief on Zone 2)
- Planning for re-piping Well 3 to supply Tank 1 to connect to the supply line rather than the distribution line
- Planning for the replacement of Tank 1, which dates back to the 1930s, and has leaks when filled
- Modeling adequacy of the transmission lines supplying the distribution system
- Complete GIS mapping, as may be appropriate
- Identifying asbestos/cement (AC) pipe for replacement
- Planning for future growth
- Asset management software
- Meeting the EPA Lead and Copper Rule

4. Summarize the reasons for the request:

The City of Newcastle is requesting a Level I water master plan study to evaluate the components of the existing system and to provide a schedule for improvements. It will also identify system needs and develop a plan to accommodate future growth.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes
2. Project Priority According to WWDO Criteria: Acct I - Priority 8: LI Reconnaissance Studies
3. Will the project serve at least 15 water taps? Yes
 - A. Number of Taps: 1,567 inside/39 outside 1,606 total
4. Is the sponsor eligible for funding from other state or federal programs? Yes
 - A. If so, what are they (RUS, SRF, other)? RUS, SRF, and others
5. Is the Sponsor under any federal (EPA) mandates to improve its system? (e.g., Administrative Orders, violations, actions taken, etc.)? RTCR Level II corrective measures were recently completed (as of 02/2022), upon request of the EPA.
6. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system? No
7. What is monthly water bill for 5,000 gallons? \$25.93
 - A. 20,000 Gallons? \$78.28
8. Can the project be delayed or staged? Yes
 - A. Should it be? No

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. EPA Public Water System (PWS) Identification Number: WY5600256C

B. Groundwater

- (1) Number of Wells: 4 currently, the 5th well is scheduled to be connected during the summer 2022.
- (2) Primary Supply Aquifer(s) or Formation(s): Madison Formation
- (3) Total Average Production Yield of All Wells (GPM): N/A [estimated from 2,000 to 4,000 gpm]

C. Surface Water

- (1) Source Name(s): N/A
- (2) Type of Diversion(s): N/A
- (3) Total Average Diversion Yield (CFS or GPM): N/A

D. Springs

- (1) Name of Spring(s): N/A
- (2) Total Average Production Yield of All Springs (CFS or GPM): N/A

E. Water Rights

- (1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights? Yes

F. Transmission Pipeline

- (1) Maximum Capacity of the Transmission Pipeline(s) (Gallons per Day): Unknown
- (2) Increased Capacity Needed (If Known) (Gallons per Day): Unknown
- (3) Approximate Distance from Source(s) to Distribution System: 0.5 miles
- (4) Transmission Pipe Diameter(s): 10 to 12 inches
- (5) Type of Transmission Pipe Material(s): AC and PVC
- (6) Age of Transmission Pipeline(s): AC – 50+ years, PVC – 5 to 30 years
- (7) Condition of Transmission Pipeline(s): Poor to good
- (8) Does the applicant possess clear title to transmission corridor easements? Yes

G. Water Storage

- (1) Raw (Volume and Tank Description): 5.37 MG in three above-ground bolted steel tanks
- (2) Treated (Volume and Tank Description): 0

H. Treatment

- (1) Specify Water Treatment (None, Chlorination, Filtration, Etc.): None

2. Existing Water Distribution System

- A. Is the water use metered? Yes
- B. Are the billings based on meter readings? Yes
- C. Identify unmetered usage (e.g., irrigation of parks, cemeteries, fire protection, etc.):
City parks, ball fields, cemetery, fire protection
- D. Average Day Demand Water Usage (Gallons per Capita per Day): 225
- E. Maximum Day Demand Water Usage (Gallons per Capita per Day): 560
- F. Peak Hourly Demand Water Usage (Gallons per Capita per Day): 840
- G. Distribution Pipe Diameter(s): 2 to 10 inches
- H. Type of Distribution Pipe Material(s): AC, PVC, steel, cast iron
- I. Age of Distribution Pipeline(s): Varies from a few years to over 50 years
- J. Condition of Distribution Pipeline(s): Varies from good to poor
- K. Estimated System Water Losses (Percentage): Unknown, but not considered to be a concern.
- L. Describe any fire flow protection that the system provides: There are fire hydrants throughout the system.
- M. What water conservation measures are employed? Metering is the primary water system conservation measure.
- N. Is there an independent raw water irrigation system? No
 - (1) Raw Water System Capacity (Gallons per Day): N/A

(2) Average Annual Raw Water Usage (Gallons per Year): N/A

3. Demographic Information and Existing Water Service Area

A. Population (2010 Census): 3,532 B. Current Population Estimate: ~3,500 (2022)

C. Does the applicant have a comprehensive planning boundary? No

(1) If so, what is the estimated additional population that may be served in the future? N/A

D. How many taps are served within the corporate limits/JPB service area? 1,567 (1,606 total)

E. How many taps are served outside of the corporate limits/JPB service area? 39

F. Identify names of other water system served:

Cambria and Sunset water districts, & Wyoming Refining Company

G. Identify any existing planning reports (municipal or county) that address growth management in the project area. Provide titles and how copies of the reports could be obtained: Comprehensive Plan (1984), A Comprehensive Plan for Water and Sewer (1969). [Previous WWDC studies include: Newcastle Water Master Plan, Level I, April 2000; Madison Well, Level II, October 2017.]

4. Financial Information

A. Rates

(1) Tap Fee(s) – Residential: \$1,500 – ¾" tap, \$1,700 – 1" tap, \$1,800 – 1.5" tap

(2) Tap Fee(s) – Commercial: \$1,500 plus cost

(3) Average Residential Monthly Water Bill and Corresponding Gallons Used: \$25.00

(4) Water Rates (Provide rates for all tiers and categories of use. Attach additional pages as needed.):

In the city, the base rate is \$13.30 for the first 2,000 gallons, then \$4.21/TGAL for next 3,000 gallons, then \$3.49/TGAL. Outside the city, the base rate is \$21.00.

(5) Identify any local conditions that affect water rates (e.g., flow-through for frost prevention, etc.):

Flow through for frost prevention, leaks, excessive lawn watering.

B. Financial Statement (of Water Utility)

(1) Revenues

a. Annual Revenues Generated from Water Sales:	\$ 977,288
b. Annual Revenues from Tap Fees:	\$ 1,500
c. Annual Revenues from Other Sources (Grants, etc.):	\$ 1,670,512
d. Total Annual Revenues:	\$ 2,649,300

(2) Expenditures

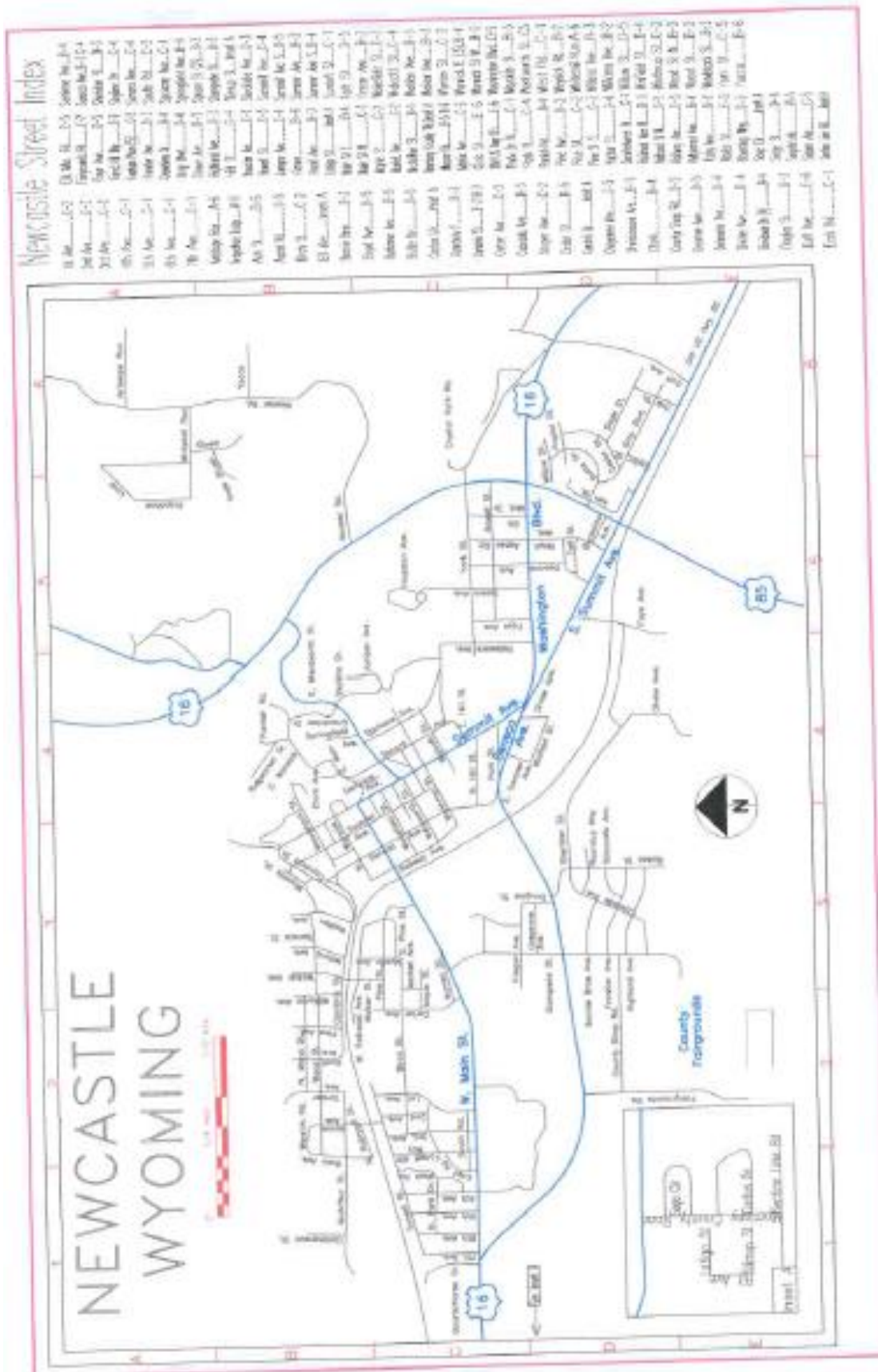
a. Annual Budget for Operation and Maintenance Expenses:	\$ 2,621,500
b. Annual Payments for Debt Retirement (<i>*Water Fund</i>):	\$ [106,000]*
c. Annual Payments to Repair & Replace. Fund (<i>*Water Fund</i>):	\$ [34,451]*
d. Annual Payments to an Emergency Fund:	\$ 0
e. Annual Payments for Other Purposes:	\$ 0
f. Total Annual Payments:	\$ 2,621,500

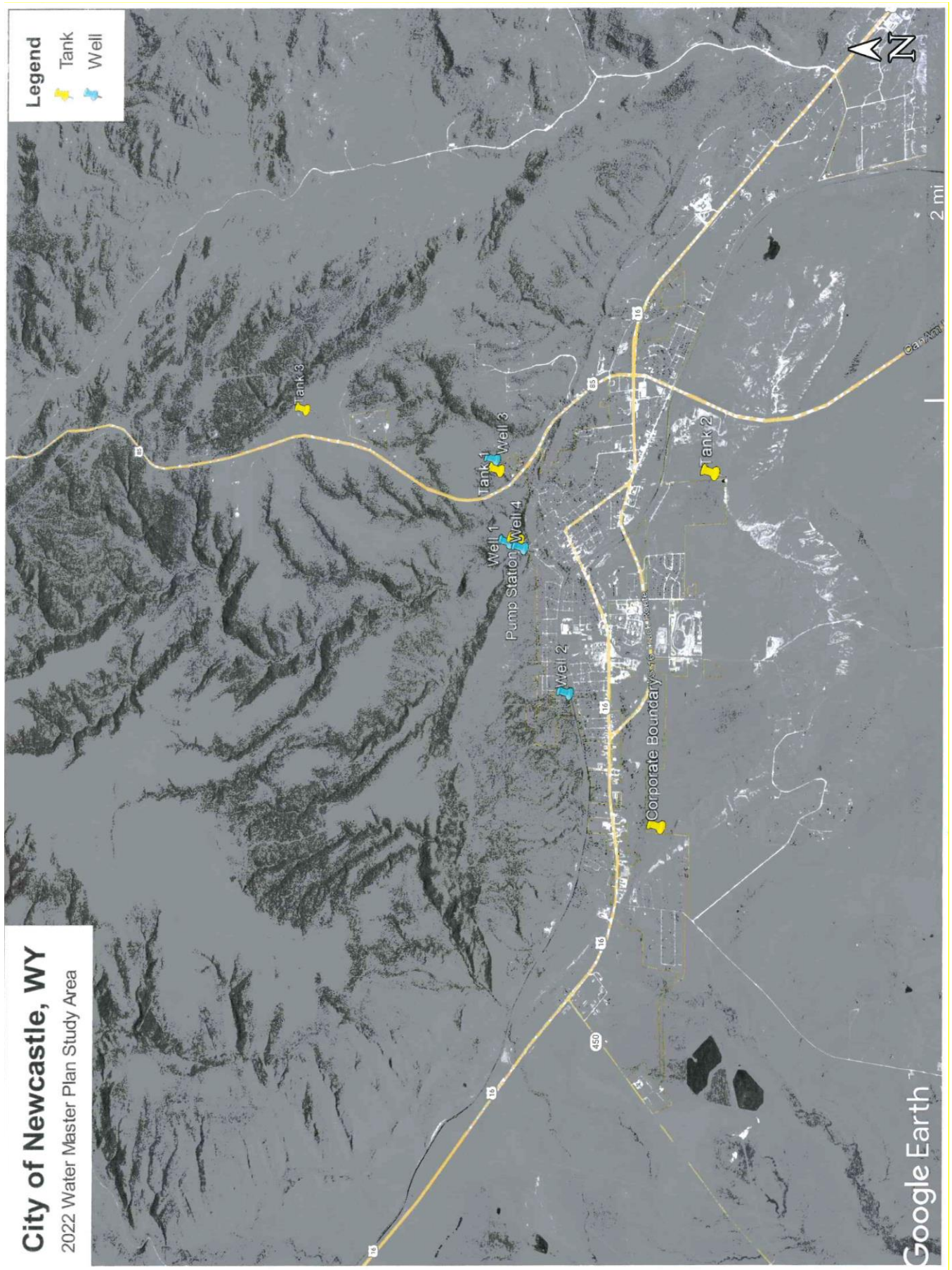
(3) Other

a. Balance in Repair and Replacement Fund:	\$ 1,517,904
b. Balance in Emergency Fund:	\$ 1,517,904
c. Annual Cost of Water Quality Testing:	\$ 6,908

(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.? Yes

PROJECT AREA MAPS





PHOTOS



Weston County Courthouse, Newcastle, Wyoming



Wyoming Refining Company, Newcastle, Wyoming

RESOLUTION

RESOLUTION OF SUPPORT

RESOLUTION NO. 2, SERIES 2022

A RESOLUTION SUPPORTING APPLICATION TO THE
WYOMING WATER DEVELOPMENT COMMISSION (WWDC)
FOR LEVEL II FUNDING ON BEHALF OF THE GOVERNING
BODY OF THE
City of Newcastle

FOR THE PURPOSE OF: Updating the water master plan.

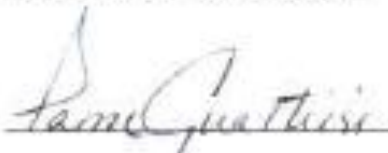
WITNESSETH

WHEREAS, the Governing Body of the City of Newcastle desires to accept funding from the WWDC to assist in financing this project; and

WHEREAS, the public benefit(s) of this project will be to ensure adequate planning is completed and desirable upgrades are identified for the city's water system.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE City of Newcastle, that funding being awarded by the WWDC for the project be approved and accepted this 7th day of March, 2022.

By:



Pam Gualtieri

Mayor, City of Newcastle



ATTEST:

Gregory H. James, City Clerk Treasurer

CERTIFICATE

I, Gregory H. James, hereby certify that the foregoing Resolution was adopted by the City of Newcastle at a public meeting held on 3/7/2022, and that the meeting was held accordingly to law; and that said Resolution has been duly entered in the Minutes of the City of Newcastle.


Gregory H. James, City Clerk / Treasurer

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

RURAL DOMESTIC WATER SYSTEMS

Project Name: Orchard Valley Water Master Plan

Program: New Development

Project Type: Other (Rural Water Supply)

County: Laramie

Sponsor: Orchard Valley Water Company

WWDO Recommendation: Level I

Proposed Budget: \$TBD

**Recommend waiving the requirement that the Sponsor be a public entity, for this Level I Study only.
Sponsor is willing to explore becoming a public entity through this process.**

Basis for the Funding Recommendation:

Orchard Valley Water Co. is requesting a Level I water master plan study to fully evaluate the infrastructure of their water supply system. The study will evaluate the current condition of their water system and provide the tools and guidance needed to assist in the planning, rehabilitating, upgrading, managing of the system, water storage and planning for future growth.

Project Manager: Julie Gondzar

I. PROJECT DESCRIPTION

Orchard Valley Water Company (OVWC) is a non-profit entity and Wyoming Public Service Commission authorized company owned and operated by the OVWC customers. OVWC was formed in 1941 and provides tap and drinking water for approximately 108 residences in the southern-most region of Cheyenne. OVWC is governed by an elected board from serviced residences. The board consists of a President, Vice President, Secretary/Treasurer and two at-large members. Duties are governed by the OVWC General Rules and Regulations as approved by the Wyoming Public Service Commission. The OVWC system consists of two (2) 6" diameter wells (approximately 250 feet deep) and two (2) 5,500-gallon storage tanks. The system is a closed-loop system with each pump servicing the entire system. Water is pumped into its associated tank, then into the main distribution lines. Water treatment is not required. Fire flow is provided by South Cheyenne Water and Sewer District.

1. Existing and Prior Legislation:

The project Sponsor has not received funding for prior WWDO projects.

2. Describe the location of the project:

The Orchard Valley Water Company is located in the southern-most portion of the City of Cheyenne, Laramie County, and services approximately 108 residences and a population of 259.

3. Summarize the request:

Orchard Valley Water Company has requested a Level I water master plan to address the state of their aging and antiquated water system. Nearly every part of the system is significantly aging beyond sufficient repair. Main concerns are the deteriorating condition of the main line and valves, water leaks and water loss. The small network of pipe, valves and backflow preventers in the two well houses do not operate without leaking and increased difficulty. The main line has been under constant repair, and is a patchwork of iron, steel and PVC. The valves have no way of being fixed properly because they are outdated. Flow metering is also needed, to allow for more accurate water loss tracking and EPA compliance. Failing parts need to be replaced and the system needs modernization

equipment, which will allow for better and more efficient daily operation, emergency control and create a safer work environment.

This study will also provide a much-needed inventory and evaluation of the entire water system and will provide the tools and guidance necessary to assist in the planning, rehabilitation, upgrading, and managing of their system. The plan would serve as a framework to establish project priorities and to perform financial planning necessary to meet those priorities. It would also provide reconnaissance-level information regarding costs and scheduling.

4. Summarize the reasons for the request:

Orchard Valley Water Company is requesting a Level I Master Plan Study for the following reasons: 1) increased efficiency and control of daily and emergency operations, 2) improve customers' water supply consistency by ensuring better mechanical functioning, 3) improve the accuracy of government compliance, and 4) increasing the safety of operations and the work environment.

Providing OVWC with a water master plan will equip them with the tools needed to handle any future growth, provide GIS mapping, a hydraulic model of their system, population and water use projections, and a review of their entire water system and financial status. The study will identify the components of the existing system that are deficient and provide a schedule for improvements.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Does an entity of local government exist? No

A. If an entity of local government exists, provide the following:

(1) Type of Entity (Water District, Water & Sewer District, Improvement & Service District, etc.):

Company, non-profit

(2) Date of Formation: March 31, 1941

B. If no entity exists, provide the following:

(1) Is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

Level I Study

(2) Has district formation started? No, but there is interest

(3) Has a petition been submitted to the City Council or County Commission? No

(4) Has the district formation hearing been held? No

(5) Has the district formation election been held or scheduled? No

2. Is the area made up a subdivision, subdivisions, or un-platted development? Un-platted development

3. Provide the date or dates that the subdivision or subdivisions were approved by the City or County: N/A

4. Is the project supported by the City Council or County Commission which has jurisdiction over the project area?

N/A

A. Provide any comments from City Council or County Commission:

N/A

5. Project Priority According to WWDO Criteria: Acct I - Priority 8: LI Reconnaissance Studies

6. Will the project serve at least 15 water taps? Yes

A. Number of Taps: 108

7. Is the Sponsor eligible for funding from other state or federal programs? No

A. If so, what are they (RUS, SRF, other)? N/A

8. Is the Sponsor under any federal (EPA) mandates to improve its system? (e.g., Administrative Orders, violations, actions taken, etc.)? No

9. Is the Sponsor currently served by a regionalized water supply system (specify)? No.

Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system?

Yes, regionalization may be considered.

10. What is monthly water bill for 5,000 gallons? \$44.03

A. 20,000 Gallons? \$176.13

11. Can the project be delayed or staged? Yes

A. Should it be? No

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. EPA Public Water System (PWS) Identification Number: WY 5600012

B. Groundwater

(1) Number of Wells: 2

(2) Primary Supply Aquifer(s) or Formation(s): Brule Formation

(3) Total Average Production Yield of All Wells (GPM): 700 gpm

C. Surface Water

(1) Source Name(s): N/A

(2) Type of Diversion(s) (Headgate, Infiltration Gallery, Pumps, Etc.): N/A

(3) Total Average Diversion Yield (CFS or GPM): N/A

D. Springs

(1) Name of Spring(s): N/A

(2) Total Average Production Yield of All Springs (CFS or GPM): N/A

E. Water Rights

(1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights?

Yes

F. Transmission Pipeline

(1) Maximum Capacity of the Transmission Pipeline(s) (Gallons per Day): Unknown

(2) Increased Capacity Needed (If Known) (Gallons per Day): None

(3) Approximate Distance from Source(s) to Distribution System: 10 feet

(4) Transmission Pipe Diameter(s): 7,500 feet of 4" diameter, 1,500 feet of 6" diameter

(5) Type of Transmission Pipe Material(s): Steel, cast iron, plastic/PVC

(6) Age of Transmission Pipeline(s): 80-82 years

(7) Condition of Transmission Pipeline(s): Good to unknown

(8) Does the applicant possess clear title to transmission corridor easements? Yes

G. Water Storage

(1) Raw (Volume and Tank Description): 11,000 gal combined (2 tanks of 5,500 gal each)

(2) Treated (Volume and Tank Description): N/A

H. Treatment

(1) Specify Water Treatment (None, Chlorination, Filtration, Etc.): None

2. Existing Water Distribution System

A. Is the water use metered? Yes B. Are billings based on meter readings? Yes

C. Identify unmetered usage (e.g., irrigation of parks, cemeteries, fire protection, etc.): None

D. Average Day Demand Water Usage (Gallons per Capita per Day): 125

E. Maximum Day Demand Water Usage (Gallons per Capita per Day): 154

F. Peak Hourly Demand Water Usage (Gallons per Capita per Day): 31

G. Distribution Pipe Diameter(s): 4" and 6"

H. Type of Distribution Pipe Material(s): Steel, cast iron, plastic/PVC

I. Age of Distribution Pipeline(s): 40 to 5 years

J. Condition of Distribution Pipeline(s): PVC is new, steel and cast iron is antiquated

K. Estimated System Water Losses (Percentage): Unknown, 0% to 1% when line breaks

L. Describe any fire flow protection that the system provides:

None. Fire flow protection is provided by Cheyenne Southside Water and Sewer District

M. What water conservation measures are employed? Water restrictions

N. Does anyone in the service area haul water? No

O. Is there an independent raw water irrigation system? No

(1) Raw Water System Capacity (Gallons per Day): N/A

(2) Average Annual Raw Water Usage (Gallons per Year): N/A

3. Demographic Information and Existing Water Service Area

A. Population Being Served: Approx. 259

B. Does the applicant have a comprehensive planning boundary? Yes (see map)

(1) If so, what is the estimated additional population that may be served in the future? 41

C. How many taps are served within the district boundary? 108

D. How many taps are served outside the district boundary? 0

E. Identify names of other water system served: N/A

F. Identify any existing planning reports (municipal or county) that address growth management in the project area. Provide titles and how copies of the reports could be obtained: N/A

4. Financial Information

A. Rates

(1) Tap Fee(s) – Residential: \$1,500

(2) Tap Fee(s) – Commercial: N/A

(3) Average Residential Monthly Water Bill and Corresponding Gallons Used:

\$27.52/month (bimonthly billing); 3,125 gallons/month

(4) Water Rates (Provide rates for all tiers and categories of use. Attach additional pages as needed.):

Base rate of \$50 assessed for the first 4,000 gallons, plus \$2 is assessed for each 1,000 gallon above base quantity. Rate riders are assessed by separate notification.

(5) Identify any local conditions that affect water rates (e.g., flow-through for frost prevention, etc.):

N/A

B. Financial Statement (of Water Utility)

(1) Revenues

a. Annual Revenues Generated from Water Sales:	\$	35,338
b. Annual Revenues from Tap Fees:	\$	N/A
c. Annual Revenues from Other Sources:	\$	4,319
d. Total Annual Revenues:	\$	39,657

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$	Varies*
b. Annual Payments for Debt Retirement:	\$	0
c. Annual Payments to a Repair and Replacement Fund:	\$	N/A
d. Annual Payments to an Emergency Fund:	\$	25,079
e. Annual Payments for Other Purposes:	\$	N/A
f. Total Annual Payments:	\$	Varies

*\$500-\$35,000 depending on maintenance requirements

(3) Other

a. Balance in Repair and Replacement Fund:	\$	N/A
b. Balance in Emergency Fund:	\$	25,079
c. Annual Cost of Water Quality Testing:	\$	1,656

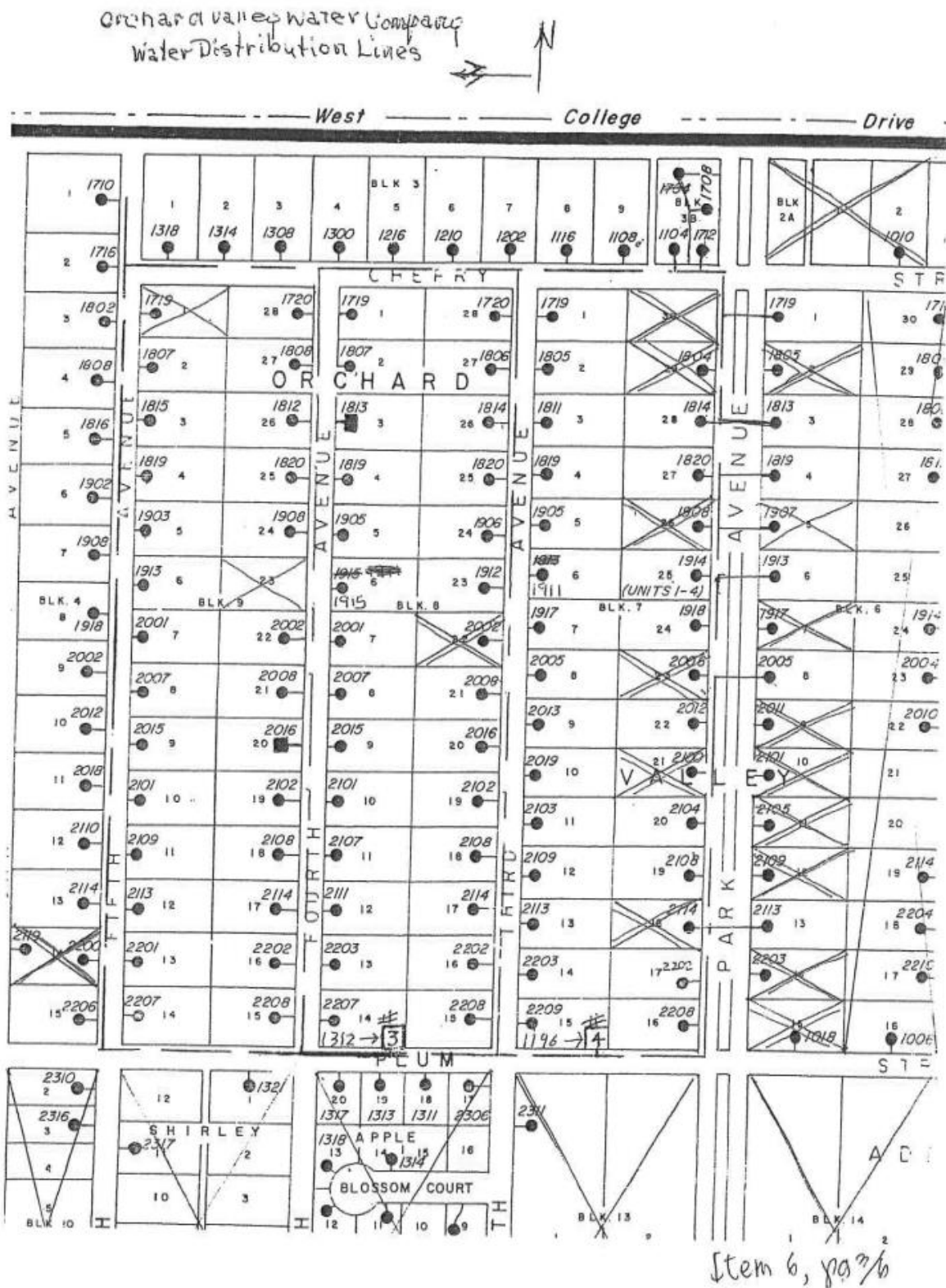
(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.?

Yes

a. If not, how is the difference subsidized? N/A

PROJECT AREA MAPS

Maps show system lines, valves, lot addresses and roadways.



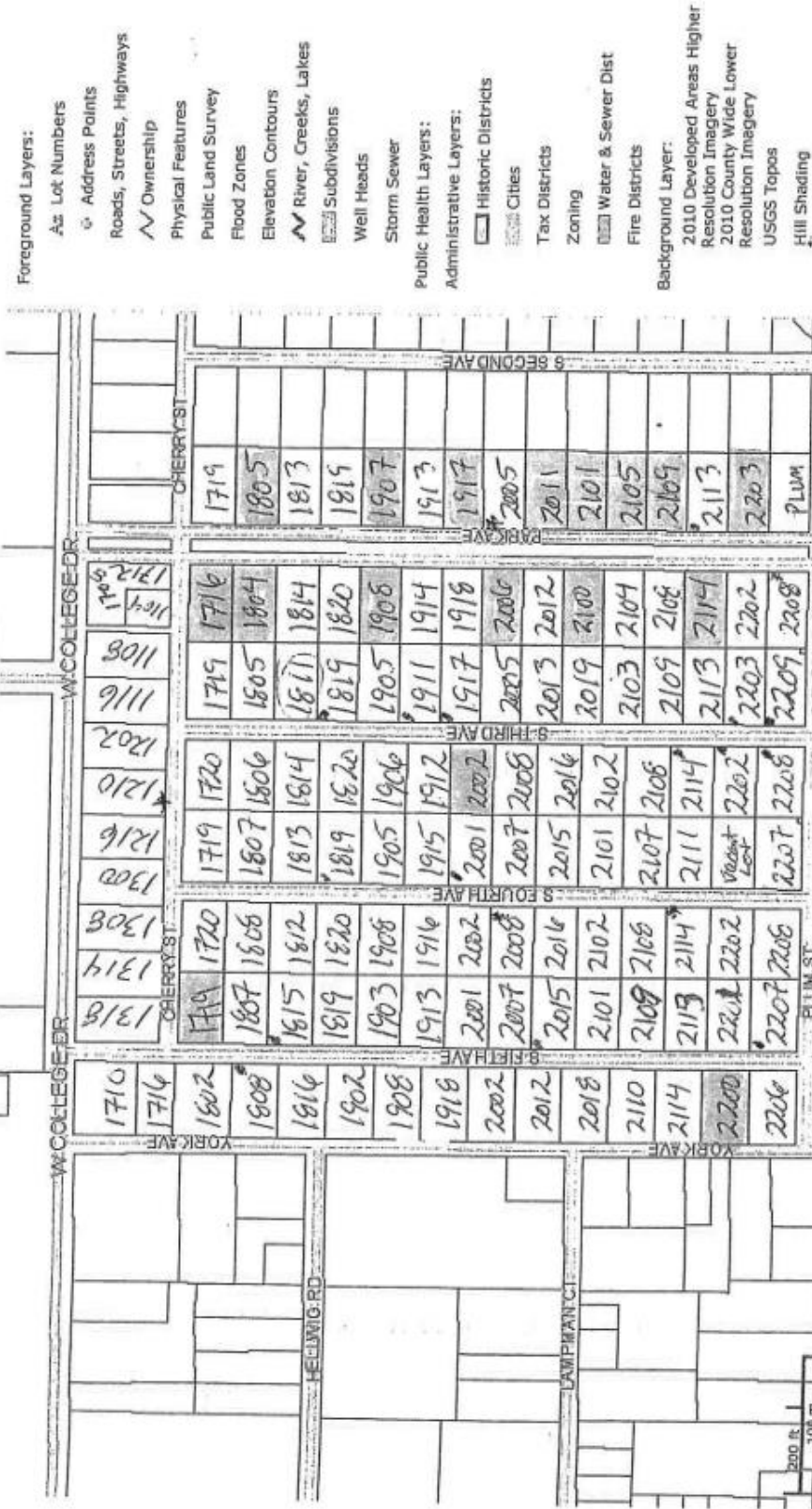
MapServer - Laramie County, Wyoming

Orchard Valley Water District

Page 1 of 1

00821

Jump To ...
Link help feedback/contact



Item 6, pg 36

Location Serviced by OVWD
Location Not Serviced by OVWD

http://laramie.laramiecounty.com/mapserver/man

11/06/2013

PHOTOS



Figure 1: Orchard Valley Water Co. "Well House 3"



Figure 2: Valves and backflow preventers leaking



Figure 3: Below ground discharge



Figure 4: Well pumps water into underground tank



Figure 5: Orchard Valley Water Co. "Well House 4"



Figure 6: Pipe flanges and fittings leaking



Figure 7: Piping and underground storage tank (5,500 gal)

RESOLUTION

Orchard Valley Water Company Resolution – 1-2022

March 1, 2022

**ORCHARD VALLEY WATER COMPANY
CORPORATE RESOLUTION OF:
Wyoming Water Development Commission
Application of Level I Reconnaissance Studies**

We, the undersigned, being the directors of this corporation consent and agree by majority that the following corporate resolution was made on March 1, 2022, at 10:20 a.m., in Cheyenne, Wyoming, Laramie County.

We do hereby consent to the adoption of the following as if it was adopted at a regularly called meeting of the board of directors of this corporation. In accordance with State law and the bylaws of this corporation, by majority consent, the board of directors decided that:

Orchard Valley Water Company (OVWC) will apply for Level I reconnaissance study through the Wyoming Water Development Commission (WWDC). An application fee of \$1000.00 and a reimbursement fee of \$1000.00 will be required at the time of submission. The purpose of the reconnaissance study is to determine if OVWC will be eligible for funding for infrastructure upgrades.

Those in favor of the resolution:

Those opposed to the resolution:

The officers of this corporation are authorized to perform the acts to carry out this corporate resolution.

President: Frank Waters Date: 3-1-22 Frank Waters
Director: Kevin Scott Date: 3-1-22 Kevin Scott
Director: _____ Date: _____ Allen Norden
Director: Carla Brown Date: 3-1-22 Carla Brown
Director: Jerome Meade Proxy, Frank Waters Date: 3-1-22 Jerome Meade Proxy, Frank Waters

The President of the corporation certifies that the above is a true and correct copy of the resolution that was duly adopted at a meeting of the dated meeting of the board of directors.

Frank Waters
Signature of President

ACKNOWLEDGMENT

State of Wyoming
County of Laramie
On this 1 day of March, 2022, Franklin D Waters
personally appeared before me,
_____, who is personally known to me,
☒ whose identity I verified on the basis of military ID
_____, whose identity I verified on the oath/affirmation of _____
a credible witness,
to be the signer of the foregoing document, and he/she acknowledged that
he/she signed it. Heather Stewart
My Commission Expires: 10/21/23 Notary Signature



2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

MUNICIPAL/JOINT POWERS WATER BOARD WATER SYSTEMS

Project Name: Ranchester Water Master Plan

Program: New Development

Project Type: Municipal Water System

County: Sheridan

Sponsor: Town of Ranchester

WWDO Recommendation: Level I

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The Town of Ranchester is requesting an update to their 2002 Level I reconnaissance-level water master plan to fully evaluate the infrastructure of the Town's public water system. The study would evaluate the current condition of their water system and provide the tools and guidance needed to assist in the planning, rehabilitating, upgrading, and managing of their system.

Project Manager: Jay Smith

I. PROJECT DESCRIPTION

The Town of Ranchester is requesting an update to their last water master plan which was completed in 2002. The population of Ranchester has grown significantly since 2002. The Town's system needs to be evaluated to ensure future demands can be met. An evaluation of the water treatment plant, transmission system, distribution system, and storage capacities will help evaluate the system's ability to efficiently provide water to the growing population. The requested project would analyze the current condition of the water system, evaluate the ability of the system to efficiently provide water to the growing population, and guidance for managing the system.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Ranchester Master Plan	I	7	2002	II	\$ 75,000	2004
Ranchester Water Supply	II	125	2003	II	\$ 80,000	2004
Ranchester Storage Tank	III	147/105	2005/06	II	\$ 454,000	2009/10

2. Describe the location of the project:

The Town of Ranchester is located in Sheridan County, with a current population of approximately 1,064 residents.

3. Summarize the request:

A Level I water master plan study is being requested by the Town of Ranchester to analyze the capacities of the water treatment plant, transmission system, distribution systems, and storage. The source of the system is the Tongue River. This study will provide an inventory and evaluation of the entire water system. The study would also impart the tools and guidance necessary to assist in the planning, rehabilitation, upgrading, and managing of their system. The updated plan would serve as a framework to establish project priorities and to perform the appropriate financial planning necessary to meet those priorities. It would also provide reconnaissance-level information regarding costs and scheduling.

4. Summarize the reasons for the request:

The population of Ranchester has grown significantly since the 2002 water master plan was completed. The Town of Ranchester expects this significant population growth to continue and future demands need to be considered with the current water system. An updated master plan will allow the Town to evaluate system deficiencies, ensure system viability for future growth, prioritize improvement projects, and provide a schedule for identified projects

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes

A. If not, is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

N/A

2. Project Priority According to WWDO Criteria: Acct I - Priority 8: LI Reconnaissance Studies

3. Will the project serve at least 15 water taps? Yes

A. Number of Taps: ~430

4. Is the sponsor eligible for funding from other state or federal programs? Yes

A. If so, what are they (RUS, SRF, other)? RUS, SRF

5. Is the Sponsor under any federal (EPA) mandates to improve its system? (e.g., Administrative Orders, violations, actions taken, etc.)? No

6. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system?

The sponsor is willing to consider regionalization.

7. What is monthly water bill for 5,000 gallons? \$29.00

A. 20,000 Gallons? \$54.00

8. Can the project be delayed or staged? Yes

A. Should it be? No

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. EPA Public Water System (PWS) Identification Number: WY5600044C

B. Groundwater

(1) Number of Wells: 0

(2) Primary Supply Aquifer(s) or Formation(s): N/A

(3) Total Average Production Yield of All Wells (GPM): N/A

C. Surface Water

(1) Source Name(s): Tongue River

(2) Type of Diversion(s) (Headgate, Infiltration Gallery, Pumps, Etc.): Pumps

(3) Total Average Diversion Yield (CFS or GPM): 12.86CFS

D. Springs

(1) Name of Spring(s): N/A

(2) Total Average Production Yield of All Springs (CFS or GPM): N/A

E. Water Rights

(1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights? Yes

F. Transmission Pipeline

(1) Maximum Capacity of the Transmission Pipeline(s) (Gallons per Day): Unknown

(2) Increased Capacity Needed (If Known) (Gallons per Day): N/A

(3) Approximate Distance from Source(s) to Distribution System: 100'

(4) Transmission Pipe Diameter(s): 12"

(5) Type of Transmission Pipe Material(s): Ductile Iron

(6) Age of Transmission Pipeline(s): 41 years

(7) Condition of Transmission Pipeline(s): Unknown

(8) Does the applicant possess clear title to transmission corridor easements? Yes

G. Water Storage

(1) Raw (Volume and Tank Description): None

(2) Treated (Volume and Tank Description): 1 million gallons-2 steel tanks along I-90

H. Treatment

(1) Specify Water Treatment (None, Chlorination, Filtration, Etc.): Coagulation, Flocculation, Sedimentation, Filtration, Chlorination

2. Existing Water Distribution System

A. Is the water use metered? Yes

B. Are billings based on meter readings? Yes

C. Identify unmetered usage (e.g., irrigation of parks, cemeteries, fire protection, etc.): None

D. Average Day Demand Water Usage (Gallons per Capita per Day): 160 gpcpd

E. Maximum Day Demand Water Usage (Gallons per Capita per Day): 385 gpcpd

F. Peak Hourly Demand Water Usage (Gallons per Capita per Day): ~ 672 gpcpd

G. Distribution Pipe Diameter(s): 3"-12"

H. Type of Distribution Pipe Material(s): PVC, DIP, ACP

I. Age of Distribution Pipeline(s): 0-50 years

J. Condition of Distribution Pipeline(s): Unknown

K. Estimated System Water Losses (Percentage): 17%-65.6 mg produced, 8.52 mg water plant use, 11 mg unknown

L. Describe any fire flow protection that the system provides:

The Town of Ranchester provides fire flows with fire hydrants throughout their system.

M. What water conservation measures are employed? None

N. Is there an independent raw water irrigation system? Some areas

(1) Raw Water System Capacity (Gallons per Day): Unknown

(2) Average Annual Raw Water Usage (Gallons per Year): Unknown

3. Demographic Information and Existing Water Service Area

A. Population (2010 Census): 855

B. Current Population Estimate: 1064

C. Does the applicant have a comprehensive planning boundary? No

(1) If so, what is the estimated additional population that may be served in the future? N/A

D. How many taps are served within the corporate limits/JPB service area? 400

E. How many taps are served outside of the corporate limits/JPB service area? 30

F. Identify names of other water system served: N/A

G. Identify any existing planning reports (municipal or county) that address growth management in the project area. Provide titles and how copies of the reports could be obtained:

Sheridan County Housing Needs Assessment 2021- Reports Found on Sheridan County Website.

4. Financial Information

A. Rates

(1) Tap Fee(s) – Residential: \$500

(2) Tap Fee(s) – Commercial: \$4,500

(3) Average Residential Monthly Water Bill and Corresponding Gallons Used:

\$25 for 2000 gal/month

(4) Water Rates (Provide rates for all tiers and categories of use. Attach additional pages as needed.):

Residential Water Rates		
0	2,000	\$25.00
2,001	10,000	.10 per 100 gals
10,001	30,000	.15 per 100 gals
30,001	75,000	.20 per 100 gals
OVER	75,000	.55 per 100 gals

Multiple Residence Water Rates		
0	2,000	\$41.00
2,001	10,000	.10 per 100 gals
10,001	30,000	.15 per 100 gals
30,001	75,000	.20 per 100 gals
OVER	75,000	.55 per 100 gals

Commercial/Campground Water Rates		
0	2,000	\$27.00
2,001	10,000	.10 per 100 gals
10,001	30,000	.15 per 100 gals
30,001	85,000	.20 per 100 gals
OVER	85,000	.55 per 100 gals

(5) Identify any local conditions that affect water rates (e.g., flow-through for frost prevention, etc.):

None

B. Financial Statement (of Water Utility)

(1) Revenues

a. Annual Revenues Generated from Water Sales:	\$ 187,889.44
b. Annual Revenues from Tap Fees:	\$ 9,000.00
c. Annual Revenues from Other Sources:	\$ 58,088.65
d. Total Annual Revenues:	\$ 254,978.09

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$ 80,000.00
b. Annual Payments for Debt Retirement:	\$ 0.00
c. Annual Payments to a Repair and Replacement Fund:	\$ 25,000.00

d. Annual Payments to an Emergency Fund:	\$ 0.00
e. Annual Payments for Other Purposes:	\$ 92,750.00
f. Total Annual Payments:	\$ 197,750.00

(3) Other

a. Balance in Repair and Replacement Fund:	\$ 460,841.00
b. Balance in Emergency Fund:	\$ 268,205.00
c. Annual Cost of Water Quality Testing:	\$ 3,000.00

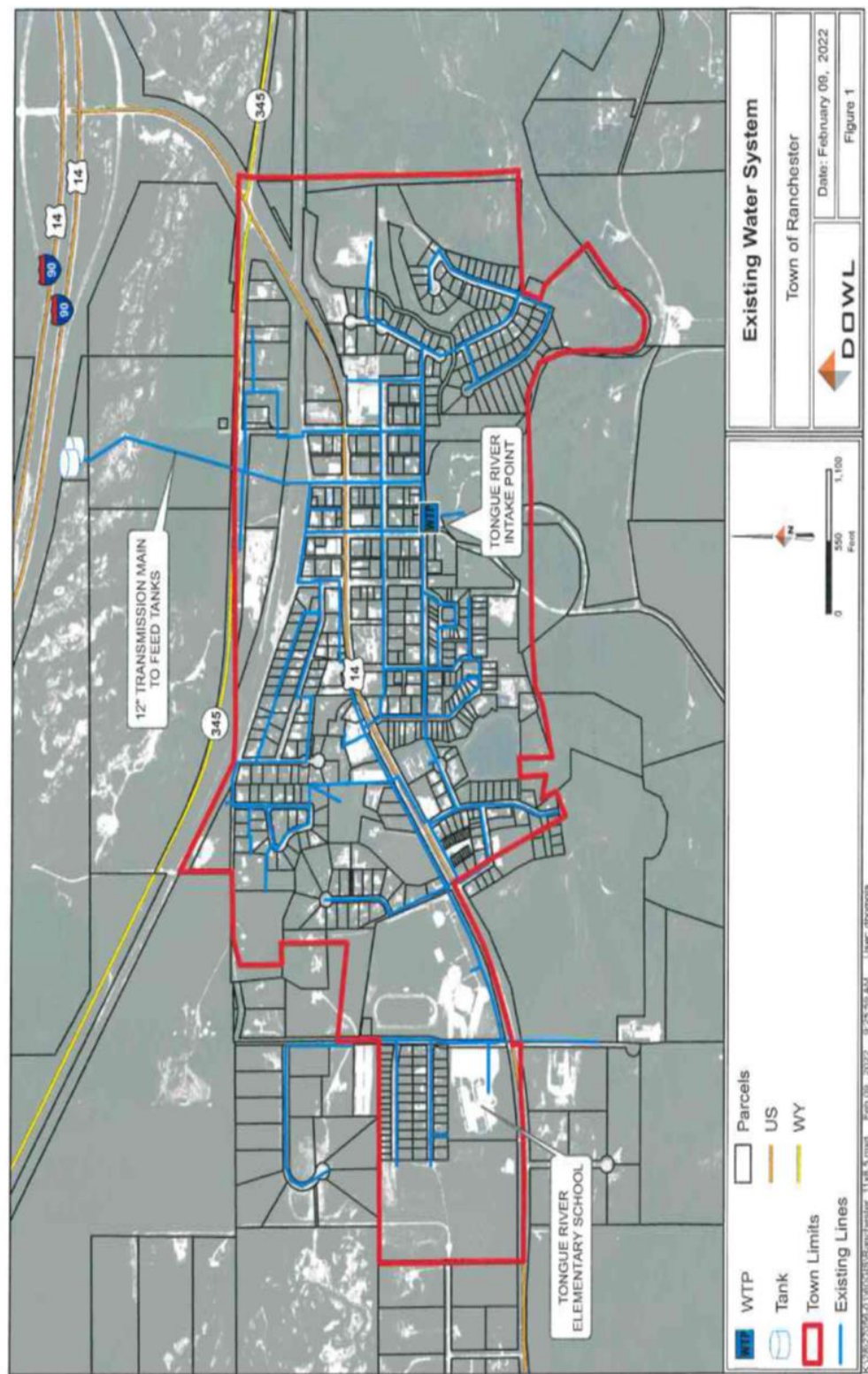
(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.?

Yes

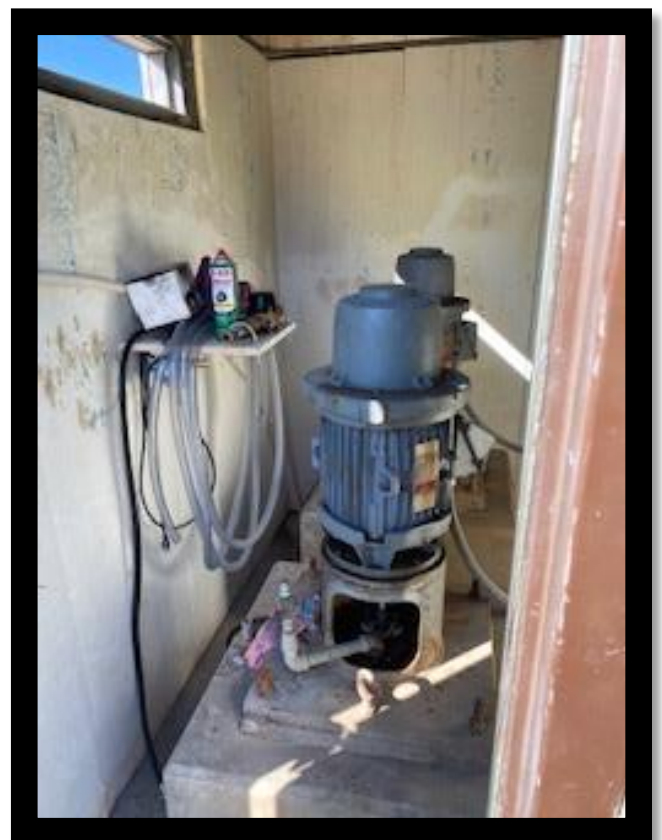
a. If not, how is the difference subsidized?

N/A

PROJECT AREA MAP



PHOTOS



RESOLUTION

Resolution 02-2022

A RESOLUTION AUTHORIZING THE SUBMISSION OF AN APPLICATION FROM THE TOWN OF RANCHESTER, WYOMING FOR FUNDING THROUGH THE WYOMING WATER DEVELOPMENT COMMISSION FOR A LEVEL I MASTER PLAN STUDY

WITNESSETH:

WHEREAS, the governing body for the Town of Ranchester, Wyoming (Town) owns and operates a public water system, which includes a water treatment plant, storage tank and distribution system; and

WHEREAS, the Wyoming Water Development Commission (WWDC) sponsored the Town of Ranchester Master Plan Level I Study in the year 2002; and

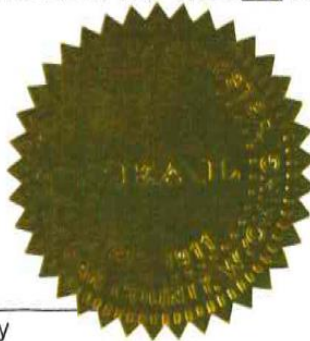
WHEREAS, over the past 20 years, many changes have occurred to the Town's public water system, many public water system components have now exceeded their useful lives, the number of public water system customers have increased, and federal drinking water standards have become more stringent; and


WHEREAS, the Town desires to have the WWDC sponsor a Level I Master Plan Study in order to determine the best, most cost-effective means of continuing to provide its customers with safe, reliable drinking water at a reasonable price.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY FOR THE TOWN that an application be submitted by the Town to the WWDC for a Level I Master Plan Study of the Town's public water system.

BE IT FURTHER RESOLVED THAT Peter B. Clark, Mayor of the Town of Ranchester, is hereby authorized to commit the Town to a binding contract as it relates to this Level I Study.

PASSED, APPROVED AND ADOPTED THIS. 15 DAY OF Feb, 2022.




Peter B. Clark
Mayor

Attest:

Barbara Brackeen-Kepley
Town Clerk

JPY

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

RURAL DOMESTIC WATER SYSTEMS

Project Name: Wardwell Water Master Plan

Program: New Development

Project Type: Other (Rural Water Supply)

County: Natrona

Sponsor: Wardwell Water and Sewer District

WWDO Recommendation: Level I

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The Sponsor is a public entity eligible for a Planning Program water system master plan as a first-time applicant. The study will inventory and evaluate the current condition of the system and identify components that are deficient and provide a schedule for improvements with cost estimates.

Project Manager: George Moser

I. PROJECT DESCRIPTION

Wardwell Water and Sewer District (Wardwell) was established in 1970 and has never completed a district-wide study to encompass the entire system. Completing a water master plan will allow for more detailed and accurate planning for development expansion while also identifying deficiencies and areas of need.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Wardwell Water Supply Improvements	III	105/75/63	2006/08/11	I	\$ 4,602,900	2010/11/13

2. Describe the location of the project:

Wardwell is located north of Casper, in Natrona County, stretching along the old Salt Creek Highway north to the historic Wardwell Airport Field.

3. Summarize the request:

Wardwell is seeking funding for a WWDC water system master plan to evaluate the current condition of their water system and to provide tools and guidance necessary to assist with planning, rehabilitation, upgrading and managing the water system. The plan would provide reconnaissance-level information regarding costs, scheduling and establish project priorities. The plan would also develop cost estimates for system improvements.

4. Summarize the reasons for the request:

Wardwell has never completed a district-wide study to encompass the entire system and develop a holistic approach to operations, maintenance, and rehabilitation. It is expected that completion of a water master plan will allow for more detailed and accurate planning for development and expansion while also identifying areas of need. (modified from Revised Water Development Program Application, received April 6, 2022)

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Does an entity of local government exist? Yes

A. If an entity of local government exists, provide the following:

(1) Type of Entity (Water District, Water & Sewer District, Improvement & Service District, etc.):

Water and Sewer District

(2) Date of Formation: 1970 (application reports 1969)

B. If no entity exists, provide the following:

(1) Is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

N/A

(2) Has district formation started? N/A

(3) Has a petition been submitted to the City Council or County Commission? N/A

(4) Has the district formation hearing been held? N/A

(5) Has the district formation election been held or scheduled? N/A

2. Is the area made up a subdivision, subdivisions, or un-platted development? Subdivisions

3. Provide the date or dates that the subdivision or subdivisions were approved by the City or County: 1970

4. Is the project supported by the City Council or County Commission which has jurisdiction over the project area?

No

A. Provide any comments from City Council or County Commission:

N/A

5. Project Priority According to WWDO Criteria: Acct I - Priority 8: LI Reconnaissance Studies

6. Will the project serve at least 15 water taps? Yes

A. Number of Taps: 1,600

7. Is the Sponsor eligible for funding from other state or federal programs? Yes

A. If so, what are they (RUS, SRF, other)? RUS, SRF

8. Is the Sponsor under any federal (EPA) mandates to improve its system? (e.g., Administrative Orders, violations, actions taken, etc.)? No

9. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system?

Yes – the Central Wyoming Regional Water System provides supply.

10. What is monthly water bill for 5,000 gallons? \$37.04 (residential)

A. 20,000 Gallons? 92.24 (residential)

11. Can the project be delayed or staged? Yes

A. Should it be? No

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. EPA Public Water System (PWS) Identification Number: WY5600067

B. Groundwater

(1) Number of Wells: N/A

(2) Primary Supply Aquifer(s) or Formation(s): N/A

(3) Total Average Production Yield of All Wells (GPM): N/A

C. Surface Water

(1) Source Name(s): N/A

(2) Type of Diversion(s) (Headgate, Infiltration Gallery, Pumps, Etc.): N/A

(3) Total Average Diversion Yield (CFS or GPM): N/A

D. Springs

(1) Name of Spring(s): N/A

(2) Total Average Production Yield of All Springs (CFS or GPM): N/A

E. Water Rights

(1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights?

N/A – Supply is from CWRWS

F. Transmission Pipeline

(1) Maximum Capacity of the Transmission Pipeline(s) (Gallons per Day): N/A

(2) Increased Capacity Needed (If Known) (Gallons per Day): N/A

(3) Approximate Distance from Source(s) to Distribution System: N/A

(4) Transmission Pipe Diameter(s): 8-inch, 12-inch, and 16-inch

(5) Type of Transmission Pipe Material(s): AC, Permastrand, PVC

(6) Age of Transmission Pipeline(s): 53 Years

(7) Condition of Transmission Pipeline(s): Aging

(8) Does the applicant possess clear title to transmission corridor easements? Transferred to CWRWS

G. Water Storage

(1) Raw (Volume and Tank Description): N/A

(2) Treated (Volume and Tank Description): 300,000 gallon pedestal tank – composite concrete and bolted steel

H. Treatment

(1) Specify Water Treatment (None, Chlorination, Filtration, Etc.): N/A

2. Existing Water Distribution System

A. Is the water use metered? Yes

B. Are billings based on meter readings? Yes

C. Identify unmetered usage (e.g., irrigation of parks, cemeteries, fire protection, etc.):

Fire suppression only

D. Average Day Demand Water Usage (Gallons per Capita per Day): 136

E. Maximum Day Demand Water Usage (Gallons per Capita per Day): 295

F. Peak Hourly Demand Water Usage (Gallons per Capita per Day): 482 (estimated)

G. Distribution Pipe Diameter(s): 6-inch, 8-inch, and 12-inch

H. Type of Distribution Pipe Material(s): AC, PVC

I. Age of Distribution Pipeline(s): 53 years

J. Condition of Distribution Pipeline(s): Aging

K. Estimated System Water Losses (Percentage): 1% - 2%

L. Describe any fire flow protection that the system provides:

Additional fire protection volume and flows are provided via an elevated tank. District has fire hydrants and fire supply lines feeding commercial buildings.

M. What water conservation measures are employed?

Encourage customers to water in the evening and early mornings.

N. Does anyone in the service area haul water? No

O. Is there an independent raw water irrigation system? No

(1) Raw Water System Capacity (Gallons per Day): N/A

(2) Average Annual Raw Water Usage (Gallons per Year): N/A

3. Demographic Information and Existing Water Service Area

A. Population Being Served: 4,000

B. Does the applicant have a comprehensive planning boundary? No

(1) If so, what is the estimated additional population that may be served in the future?

C. How many taps are served within the district boundary? 1,600

D. How many taps are served outside the district boundary? None

E. Identify names of other water system served:

F. Identify any existing planning reports (municipal or county) that address growth management in the project area. Provide titles and how copies of the reports could be obtained:

Unaware of any growth studies impacting or involving the Wardwell District area.

4. Financial Information

A. Rates

(1) Tap Fee(s) – Residential: \$7,041.50

(2) Tap Fee(s) – Commercial: 1": \$11,717.00; 1.5": \$20,207.50; 2": \$35,498.50

(3) Average Residential Monthly Water Bill and Corresponding Gallons Used:

\$40.72 for 6,000 gallons

(4) Water Rates (Provide rates for all tiers and categories of use. Attach additional pages as needed.):

Water Meter Size (inches)	Base Rate	Unit Charge per 1,000 gallons
0.75	\$18.64	\$3.68
1	\$31.17	\$3.68
1.5	\$52.05	\$3.68
2	\$77.12	\$3.68
2.5	\$114.71	\$3.68
3	\$143.94	\$3.68

(5) Identify any local conditions that affect water rates (e.g., flow-through for frost prevention, etc.):

None

B. Financial Statement (of Water Utility)

(1) Revenues

a. Annual Revenues Generated from Water Sales:	\$ 1,050,497.00
b. Annual Revenues from Tap Fees:	\$ 17,692.00
c. Annual Revenues from Other Sources:	\$ 681,298.00

d. Total Annual Revenues:	\$ 1,749,487.00
---------------------------	-----------------

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$ 477,398.00
b. Annual Payments for Debt Retirement:	\$ 0
c. Annual Payments to a Repair and Replacement Fund:	\$ 227,933.00
d. Annual Payments to an Emergency Fund:	\$ (same as above)
e. Annual Payments for Other Purposes:	\$ N/A
f. Total Annual Payments:	\$ 705,331.00

(3) Other

a. Balance in Repair and Replacement Fund:	\$ 2,437,674.69
b. Balance in Emergency Fund:	\$ (same as above)
c. Annual Cost of Water Quality Testing:	\$ 3,171.00

(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.?

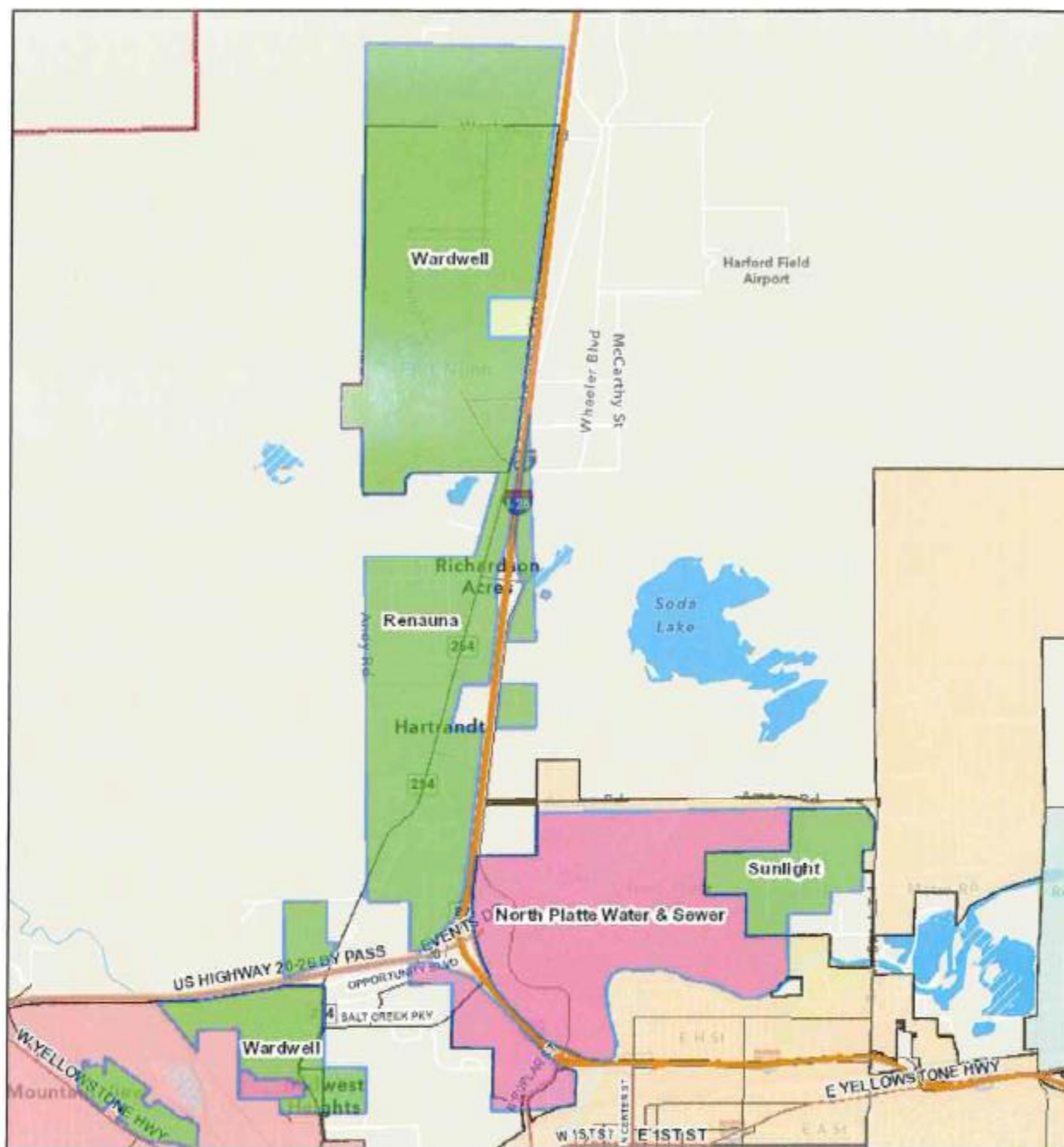
Yes

a. If not, how is the difference subsidized?

N/A

PROJECT AREA MAP

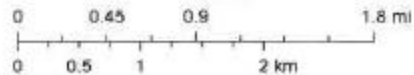
ArcGIS Web Map



9/20/2021, 4:37:22 PM

1:72,224

- | | | |
|-----------------------|-------------------|-------------------|
| Traffic Control Point | Seasonal Closure | Dissolved |
| Detour Present | Turn Restrictions | Unknown |
| Flagger Present | ISD Boundary | Null |
| Lane Restrictions | Active | Unknown |
| Reduced Speed | Applied | Collector Streets |
| Road Closure | Denied | |



University of Wyoming, NRGCC, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA, Natrona Regional Geospatial Cooperative

Web AppBuilder for ArcGIS

University of Wyoming, NRGCC, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, USDA | NRGCC | Natrona Regional Geospatial

PHOTOS



Booster Pumps and Storage Tank



Meter Vault Demonstrating Access Issues



Residential Water Line Connection to Meter



Water Line Burial Depth Concerns Due to Road Conditions

RESOLUTION

RESOLUTION NUMBER 2022 -02

ENTITLED:

A RESOLUTION AUTHORIZING SUBMISSION OF A WATER DEVELOPMENT PROGRAM APPLICATION TO THE WYOMING WATER DEVELOPMENT COMMISSION ON BEHALF OF THE GOVERNING BODY FOR THE **WARDWELL WATER AND SEWER DISTRICT**.

FOR THE PURPOSE OF:

SEEKING FUNDING FOR A DISTRICT WIDE LEVEL 1 WATER STUDY; I.E. MASTER PLAN

WITNESSETH

WHEREAS, the Governing Body for the Wardwell Water and Sewer District desires to participate in a Level 1 Reconnaissance Study funded by the Wyoming Water Development Commission; and

WHEREAS, the Governing Body of the Wardwell Water and Sewer District recognizes the need for the project; and

WHEREAS, the Governing Body of the Wardwell Water and Sewer District plans to pay the application fee of \$1000 as a condition of submission of the Water Development Program Application from the following source(s):

General Funds

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY of the Wardwell Water and Sewer District that the application in the amount of:

\$1,000.00

be submitted to the Wyoming Water Development Commission on:

February 23rd, 2022

(DATE)

BE IT FURTHER RESOLVED, that

Larry Keffer, Board President

(NAME AND TITLE)

are hereby designated as the authorized representatives of the Wardwell Water and Sewer District to act on behalf of the Governing Body on all matters relating to this Application.

PASSED, APPROVED, AND ADOPTED THIS

8th

(DATE)


day of

FEBRUARY

(MONTH)

2022

(YEAR)



(SIGNATURE)

Larry Keffer, Acting President

(NAME & TITLE)

Attest:



(SIGNATURE)

Gloria Brainard, District Manager

(NAME & TITLE)

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

MUNICIPAL/JOINT POWERS WATER BOARD WATER SYSTEMS

Project Name: Central Wyoming Regional Water System Well Field Study

Program: New Development

Project Type: Joint Powers Water Board Water System

County: Natrona

Sponsor: Central Wyoming Regional Water System

WWDO Recommendation: Level II

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The Central Wyoming Regional Water System (CWRWS) is an eligible entity for Wyoming Water Development Commission funding. CWRWS desires a comprehensive study of the well field management and operation, with an investigation of options for re-developing and re-drilling groundwater wells within their current wellfields. The CWRWS has 2 well fields with 26 vertical wells and 3 horizontal wells. The current production capacity is approximately 11.6 million gallons per day (MGD); however, CWRWS desires to develop the capacity for as much as 29-30 MGD.

Project Manager: George Moser

I. PROJECT DESCRIPTION

CWRWS desires a comprehensive well field management and operation plan. The study will investigate and compile local geologic conditions, individual well health, and evaluate current operation to develop a plan for long-term management of the wellfields and aquifer.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Central Wyoming Regional – Zone IIB	III	63	2011	I	\$ 1,959,750	2016
Central Wyoming Elevated Tank Project	III	100	2014	II	\$ 1,648,200	2019

2. Describe the location of the project:

in 1995 the CWRWS Joint Powers Board was formed by the City of Casper, Brooks Water and Sewer District, Wardwell Water and Sewer District, Salt Creek Joint Powers Board and Natrona County, Wyoming entering into a Joint Powers Agreement (Agreement), which was amended in July 1996 with the addition of the Pioneer Water and Sewer District and in November 1996 with the removal of the Brooks Water and Sewer District. CWRWS generally serves the greater Casper Metropolitan area. (modified from CWRWS website)

3. Summarize the request:

The CWRWS desires a comprehensive well field management and operation plan. The project will investigate geological conditions, determine the existing condition of wells, establish a well rehabilitation and/or replacement plan, establish a comprehensive management and operation plan, evaluate local geology for favorable aquifer development, and recommend best management practices for surface management of the well-head protection zone.

4. Summarize the reasons for the request:

CWRWS has, on occasion, investigated the adequacy concerns of vertical and horizontal wells due to decreased production; however, this effort has never encompassed the entire area of the wellfields nor has any investigation been performed to evaluate the most productive areas of the aquifer or most advantageous areas for aquifer development.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes

A. If not, is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

N/A

2. Project Priority According to WWDO Criteria: Acct I - Priority 6: LII Feasibility Studies

3. Will the project serve at least 15 water taps? Yes

A. Number of Taps: ~26,000

4. Is the sponsor eligible for funding from other state or federal programs? Yes

A. If so, what are they (RUS, SRF, other)? SRF

5. Is the Sponsor under any federal (EPA) mandates to improve its system? (e.g., Administrative Orders, violations, actions taken, etc.)?

EPA mandates compliance with 40 C.F.R. 141.711(a)

6. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system?

CWRWS is a Regional Water Supplier

7. What is monthly water bill for 5,000 gallons? CWRWS is a wholesale supplier only

A. 20,000 Gallons? CWRWS is a wholesale supplier only

8. Can the project be delayed or staged? Yes

A. Should it be? No

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. EPA Public Water System (PWS) Identification Number: WY5600009

B. Groundwater

(1) Number of Wells: 29

(2) Primary Supply Aquifer(s) or Formation(s): North Platte Alluvium

(3) Total Average Production Yield of All Wells (GPM): 8,500 gallons per minute

C. Surface Water

(1) Source Name(s): North Platte River

(2) Type of Diversion(s) (Headgate, Infiltration Gallery, Pumps, Etc.): Intake structure with pumps

(3) Total Average Diversion Yield (CFS or GPM): 31 cubic feet per second

D. Springs

(1) Name of Spring(s): N/A

(2) Total Average Production Yield of All Springs (CFS or GPM): N/A

E. Water Rights

(1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights? Yes

F. Transmission Pipeline

(1) Maximum Capacity of the Transmission Pipeline(s) (Gallons per Day): Unknown

(2) Increased Capacity Needed (If Known) (Gallons per Day): N/A

(3) Approximate Distance from Source(s) to Distribution System: 2,000 feet

(4) Transmission Pipe Diameter(s): 24 to 42-inch

(5) Type of Transmission Pipe Material(s): Ductile Iron, PVC, Concrete

(6) Age of Transmission Pipeline(s): 1-40 years

(7) Condition of Transmission Pipeline(s): Good

(8) Does the applicant possess clear title to transmission corridor easements? Yes

G. Water Storage

(1) Raw (Volume and Tank Description): N/A

(2) Treated (Volume and Tank Description): About 9 million gallons. Tanks are an ensemble of steel and composite.

H. Treatment

(1) Specify Water Treatment (None, Chlorination, Filtration, Etc.): Groundwater is treated by ozone and chloramination. Surface water is treated by deflocculation, sedimentation, filtration, ozone, and chloramination.

2. Existing Water Distribution System

A. Is the water use metered? Yes

B. Are billings based on meter readings? Yes

C. Identify unmetered usage (e.g., irrigation of parks, cemeteries, fire protection, etc.): N/A

D. Average Day Demand Water Usage (Gallons per Capita per Day): 140

E. Maximum Day Demand Water Usage (Gallons per Capita per Day): 362

F. Peak Hourly Demand Water Usage (Gallons per Capita per Day): unknown

G. Distribution Pipe Diameter(s): 8-inch through 36-inch

H. Type of Distribution Pipe Material(s): Steel, Ductile Iron, PVC, HDPE, AC, Permastrand

I. Age of Distribution Pipeline(s): 1-45 years

J. Condition of Distribution Pipeline(s): good

K. Estimated System Water Losses (Percentage): < 1%

L. Describe any fire flow protection that the system provides:

Hydrants and flow for homes and businesses.

M. What water conservation measures are employed?

Public education and watering restrictions during times of calls on the supply.

N. Is there an independent raw water irrigation system? No

(1) Raw Water System Capacity (Gallons per Day): N/A

(2) Average Annual Raw Water Usage (Gallons per Year): N/A

3. Demographic Information and Existing Water Service Area

A. Population (2010 Census): 68,000

B. Current Population Estimate: 71,000

C. Does the applicant have a comprehensive planning boundary? Yes

(1) If so, what is the estimated additional population that may be served in the future? 25,000

D. How many taps are served within the corporate limits/JPB service area? 26,000

E. How many taps are served outside of the corporate limits/JPB service area? 0

F. Identify names of other water system served:

City of Casper, Mile-Hi I&S District, 33 Mile I&S District, Pioneer Water, Poison Spider Water, Sandy Lake Water, Wardwell Water and Sewer District, Salt Creek Joint Powers Board, and Lakeview I&S District

G. Identify any existing planning reports (municipal or county) that address growth management in the project area. Provide titles and how copies of the reports could be obtained:

Casper 2020 Water Master Plan and Generation Casper Comprehensive Land Use Plan. Copies can be obtained from Bruce Martin (Public Utilities Manager).

4. Financial Information

A. Rates

(1) Tap Fee(s) – Residential:

Tap Size (inches)	Tap Fee
0.75	\$1,869
1	\$2,991
1.5	\$3,739
2	\$11,964
3	\$23,929
4	\$37,389
6	\$74,778
8	\$119,644
10	\$171,988
12	\$373,888

(2) Tap Fee(s) – Commercial: Same as above

(3) Average Residential Monthly Water Bill and Corresponding Gallons Used:

N/A

(4) Water Rates (Provide rates for all tiers and categories of use. Attach additional pages as needed.):

\$2.13 per 1,000 gallons - wholesale

(5) Identify any local conditions that affect water rates (e.g., flow-through for frost prevention, etc.):

N/A

B. Financial Statement (of Water Utility)

(1) Revenues

a. Annual Revenues Generated from Water Sales:	\$ \$8,000,000
b. Annual Revenues from Tap Fees:	\$ 250,000
c. Annual Revenues from Other Sources:	\$ 70,000
d. Total Annual Revenues:	\$ 8,320,000

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$ 3,600,000
b. Annual Payments for Debt Retirement:	\$ 2,590,000
c. Annual Payments to a Repair and Replacement Fund:	\$ 0
d. Annual Payments to an Emergency Fund:	\$ 0
e. Annual Payments for Other Purposes:	\$ 0
f. Total Annual Payments:	\$ 6,190,000

(3) Other

a. Balance in Repair and Replacement Fund:	\$ 6,599,418
b. Balance in Emergency Fund:	\$ 0 A
c. Annual Cost of Water Quality Testing:	\$ 46,500

A – Balance in Repair and Replacement Fund as well as Emergency Fund are in CWRWS Reserves.

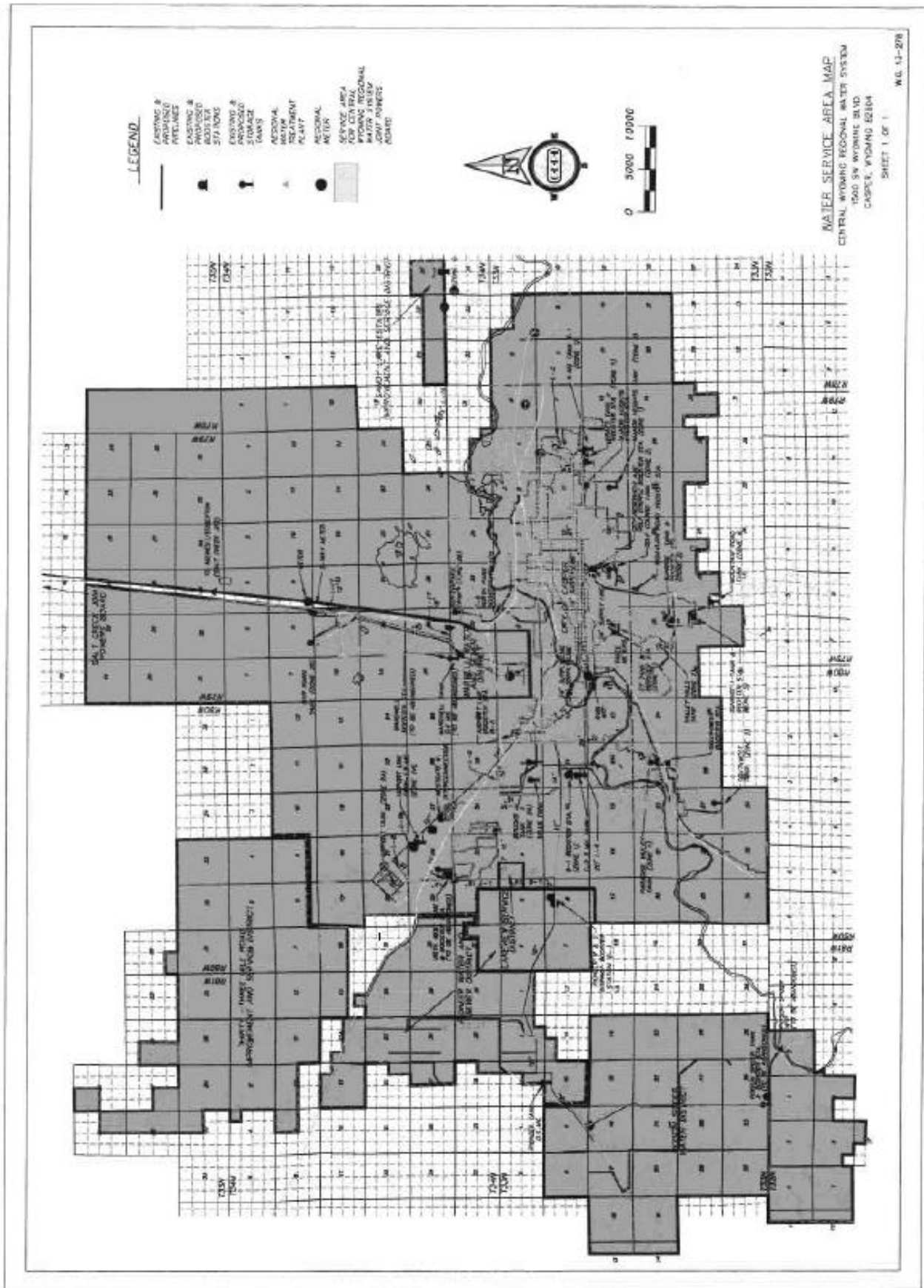
(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.?

Yes

a. If not, how is the difference subsidized?

N/A

PROJECT AREA MAP



PHOTOS



View of the Wellfield



Example of Pump Motor and discharge Piping in Well Houses



Pumping to Fill the Groundwater Recharge Ponds



Motor and Discharge for a Horizontal Well with the North Platte River Undercutting the Well-House

RESOLUTION

RESOLUTION NO. 22-01

A RESOLUTION AUTHORIZING A GRANT APPLICATION TO THE WYOMING WATER DEVELOPMENT COMMISSION FOR COMPLETION OF A LEVEL II FEASIBILITY STUDY FOR A COMPREHENSIVE WELL FIELD MANAGEMENT AND OPERATION PLAN.

WHEREAS, the Central Wyoming Regional Water System owns and operates the Casper and Morad wellfields containing 26 vertical wells and 3 horizontal wells; and,

WHEREAS, the Central Wyoming Regional Water System relies on the well field to provide drinking water for the region; and

WHEREAS, over time, the Central Wyoming Regional Water System has experienced declined production from its well fields; and,

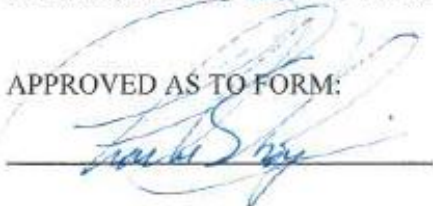
WHEREAS, the Central Wyoming Regional Water System desires to complete a comprehensive well field management and operations plan to guide well rehabilitation and development, optimize well production, maximize the life of the well field, and incorporate best vegetation and wildlife management practices; and

WHEREAS, the Wyoming Water Development Commission has made available grants and loans for the purpose of assisting entities such as the Central Wyoming Regional Water System on these types of projects.

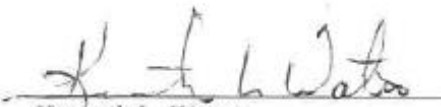
NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CENTRAL WYOMING REGIONAL WATER SYSTEM: That the Central Wyoming Regional Water System Joint Powers Board hereby authorizes submission of a Level II application to the Wyoming Water Development Commission for a well field management and operation plan.

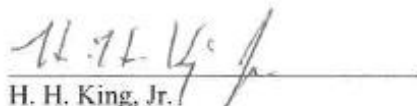
PASSED, APPROVED, AND ADOPTED this 15th day of February 2022.

APPROVED AS TO FORM:



CENTRAL WYOMING REGIONAL
WATER SYSTEM JOINT POWERS
BOARD


Kenneth L. Waters
Secretary


H. H. King, Jr.
Chairman

STATE OF WYOMING)
) ss.
COUNTY OF NATRONA)

This instrument was acknowledged before me this 15th day of February, 2022 by H. King, Jr. as Chairman of the Central Wyoming Regional Water System Joint Powers Board

(Seal)




NOTARY PUBLIC

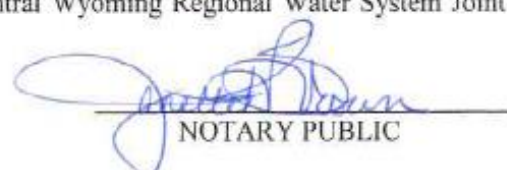
My commission expires: August 30, 2024

STATE OF WYOMING)
) ss.
COUNTY OF NATRONA)

This instrument was acknowledged before me, this 15th day of February, 2022, by Kenneth L. Waters as Secretary of the Central Wyoming Regional Water System Joint Powers Board.

(Seal)




NOTARY PUBLIC

My commission expires: August 30, 2024

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

MUNICIPAL/JOINT POWERS WATER BOARD WATER SYSTEMS

Project Name: GR-RS-SC JPWB Eastside Zone Study

Program: New Development

Project Type: Joint Powers Water Board Water System

County: Sweetwater

Sponsor: Green River-Rock Springs-Sweetwater County (GR-RS-SC) Joint Powers Water Board (JPWB)

WWDO Recommendation: Level II

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The Green River-Rock Springs-Sweetwater County (GR-RS-SC) Joint Powers Water Board (JPWB) is an eligible entity for Wyoming Water Development Commission funding and are requesting a 2023 WWDC Level II feasibility study to increase the capacity of the City of Rock Springs water system in the east and south sides of the city.

Project Manager: Keith E. Clarey, P.G.

I. PROJECT DESCRIPTION

The GR-RS-SC JPWB is seeking funding for a Level II feasibility study to investigate providing increased capacity in the water system of the City of Rock Springs in the eastern and southern portions of the city. The proposed Level II study would focus on identifying the bottlenecks within the delivery system and recommending upgrades to increase the availability of water to those future growth areas.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
2005 Master Plan, Phase 1	I	75	2005	I	\$ 225,000	2008
2007 Master Plan, Phase 2	I	85	2007	I	\$ 220,000	2010
2009 Water Supply Study	II	66	2009	I	\$ 350,000	2012
2011 Raw Water Reservoir	III	63	2011	I	\$ 900,000	2016
2012 Raw Water Reservoir	III	14	2012	I	\$ 8,282,000	2017
2015 Pipeline Feasibility Study	II	168	2015	I	\$ 125,000	2018
2017 Wind River Zone Study	II	65	2017	I	\$ 180,000	2020
2018 Pump Station & Transmission	II	94	2018	I	\$ 180,000	2021

2. Describe the location of the project:

The GR-RS-SC JPWB system is comprised a 32 MGD surface Water Treatment Plant (WTP) in Green River serving the distribution systems in Green River, Rock Springs, four (4) districts and one industrial customer. The Board is a political subdivision with members appointed by the cities and county. The proposed Level II study is within the City of Rock Springs, with the city's water system operation under the direction of Mr. Paul Kauchich, P.E., Director of Engineering & Operations.

3. Summarize the request:

The JPWB is seeking funding for a Level II study. The study will focus on analyzing the improvements needed to increase the system's capacity on the eastern side of the City of Rock Springs. The existing transmission, pumping,

and storage in the area is reaching its capacity. Additional capacity is needed for future growth and development of areas east and south of the existing Rock Springs water system.

Specific JPWB water system components to be investigated under the proposed 2023 Level II study include:

- 24-inch Transmission Line from Sweetwater Creek to Blairtown Tanks
- Blairtown Storage Tanks
- Eastside Pump Station
- 18-inch Eastside Transmission Line from Eastside Pump Station to Eastside Storage Tanks
- 12-inch Delivery Line to Simplot Pump Station along Highway 430
- Eastside Storage Tanks
- Pumping/Transmission Capacity from JPWB Water Treatment Plant (Green River) to Rock Springs "Base" Zone (Coordinate with 2019 Level II Study)
- Other JPWB System Inadequacies (As Determined by Hydraulic Model)
- Undeveloped Annexed Areas and Any Other Reasonable Lands Adjacent to the South Side Belt (City of Rock Springs)
- Arrowhead Springs Subdivision (Sweetwater County, South of Rock Springs)
- Middle Baxter Basin Industrial Development (Sweetwater County, East of Rock Springs)
- Southwest Wyoming Regional Airport (City of Rock Springs)

4. Summarize the reasons for the request:

The JPWB is requesting a 2023 Level II feasibility study to increase the capacity of the City of Rock Springs water system to accommodate future growth and the need for water.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes
2. Project Priority According to WWDO Criteria: Acct I - Priority 6: LII Feasibility Studies
3. Will the project serve at least 15 water taps? Yes
 - A. Number of Taps: GR RS + Districts = 14,150 taps total
4. Is the sponsor eligible for funding from other state or federal programs? Yes
 - A. If so, what are they (RUS, SRF, other)? RUS, SRF, and others.
5. Is the Sponsor under any federal (EPA) mandates to improve its system? (e.g., Administrative Orders, violations, actions taken, etc.)? No
6. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system? The GR-RS-SC JPWB is the regional provider for Green River, Rock Springs, one industrial customer, and several districts. The JPWB anticipates being the sponsor for the project.
7. What is monthly water bill for 5,000 gallons? N/A (wholesale water only)
 - A. 20,000 Gallons? N/A (wholesale water only)
8. Can the project be delayed or staged? Yes
 - A. Should it be? No

III. PERTINENT INFORMATION

1. Existing Water Supply System

- A. EPA Public Water System (PWS) Identification Number: WY5600050
- B. Groundwater
 - (1) Number of Wells: N/A
 - (2) Primary Supply Aquifer(s) or Formation(s): N/A

(3) Total Average Production Yield of All Wells (GPM): N/A

C. Surface Water

(1) Source Name(s): Green River

(2) Type of Diversion(s): Cut-off wall, wet wall with vertical turbine pumps.

(3) Total Average Diversion Yield (CFS of GPM): Average 6,700 gpm, capacity 22,000 gpm.

D. Springs

(1) Name of Spring(s): N/A

(2) Total Average Production Yield of All Springs (CFS or GPM): N/A

E. Water Rights

(1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights? Yes

F. Transmission Pipeline

(1) Maximum Capacity of the Transmission Pipeline(s) (Gallons per Day): 19,400,000 gpd to RS

(2) Increased Capacity Needed (If Known) (Gallons per Day): Unknown

(3) Approximate Distance from Source(s) to Distribution System: WTP to RS is approximately 14 miles

(4) Transmission Pipe Diameter(s): 30-inch steel & 20-inch AC

(5) Type of Transmission Pipe Material(s): Mortar-Lined Steel & Asbestos Cement (AC)

(6) Age of Transmission Pipeline(s): 28 years & 52 years

(7) Condition of Transmission Pipeline(s): 30-inch is average & 20-inch is over-pressured in sections.

(8) Does the applicant possess clear title to transmission corridor easements? Yes

G. Water Storage

(1) Raw (Volume and Tank Description): 330-acre-foot, lined reservoir.

(2) Treated (Volume and Tank Description): Total storage GR & RS = 21 MG. Buried concrete and steel tanks.

H. Treatment

(1) Specify Water Treatment: Conventional – Ozone, Filtration, Chlorination.

2. Existing Water Distribution System

A. Is the water use metered? Yes

B. Are the billings based on meter readings? Yes

C. Identify unmetered usage: No unmetered usage.

D. Average Day Demand Water Usage (Gallons per Capita per Day): 200 g/p/d

E. Maximum Day Demand Water Usage (Gallons per Capita per Day): 400 g/p/d

F. Peak Hourly Demand Water Usage (Gallons per Capita per Day): 625 g/p/d

G. Distribution Pipe Diameter(s): 6-inch minimum up to 14" distribution

H. Type of Distribution Pipe Material(s): DI/CI/AC/PVC

I. Age of Distribution Pipeline(s): Varies, some new installation/replacement to 50+ years.

J. Condition of Distribution Pipeline(s): New to poor

K. Estimated System Water Losses (Percentage): Average 12% to 15%

L. Describe any fire flow protection that the system provides: Fire storage volume is calculated into the tank storage requirements and tank cycling is maintained above those levels. Standard fire hydrant placement throughout the city.

M. What water conservation measures are employed? Responsible use is encouraged throughout the city.

- N. Is there an independent raw water irrigation system? No
- (1) Raw Water System Capacity (Gallons per Day): N/A
- (2) Average Annual Raw Water Usage (Gallons per Year): N/A

3. Demographic Information and Existing Water Service Area (for the City of Rock Springs only)

- A. Population (2010 Census): 23,036 (RS only) B. Current Population Estimate: 23,526 (RS only)
- C. Does the applicant have a comprehensive planning boundary? Yes
- (1) If so, what is the estimated additional population that may be served in the future? 37.8 MGD Demand
- D. How many taps are served within the corporate limits/JPB service area? GR RS + Districts = 14,150
- E. How many taps are served outside of the corporate limits/JPB service area? None
- F. Identify names of other water system served: City of Green River, City of Rock Springs, Jamestown Rio Vista, Clearview Service District, White Mountain Water & Sewer District, Ten Mile Water & Sewer District, & Simplot Phosphates.
- G. Identify any existing planning reports (municipal or county) that address growth management in the project area. Provide titles and how copies of the reports could be obtained: Sweetwater County Growth Management can be obtained at the Sweetwater County Planning Department in Green River or at www.sweetwatercountywy.gov; other reports include:
- 1995 Rock Springs East Water Supply Master Plan, Level I (Leon Kjellgren)
 - 2007 JPWB Master Plan, Level I (Nelson Engineering)
 - 2009 JPWB Water System Master Plan, Level I, Phase 2 (Nelson Engineering)
 - 2016 JPWB Pipeline Feasibility Study, Level II (Hansen, Allen, & Luce, Inc. (HAL))
 - 2018 JPWB Wind River Zone (City of Rock Springs), Level II (Sunrise Engineering)
 - 2019 JPWB Finished Water Pumping Station, Level II (Sunrise Engineering)
 - 2021 Sweetwater County Industrial Development Plan (Thomas Miller & Associates)

4. Financial Information

- A. Rates
- (1) Tap Fee(s) – Residential: The JPWB does not serve residential customers directly.
- (2) Tap Fee(s) – Commercial: The JPWB does not serve commercial customers directly.
- (3) Average Residential Monthly Water Bill and Corresponding Gallons Used: See above.
- (4) Water Rates (Provide rates for all tiers and categories of use. Attach additional pages as needed.):
- Wholesale water rates by JPWB to: City of Green River and Jamestown Rio Vista = \$1.2305 per hundred cubic feet; and City of Rock Springs, Districts near RS and Simplot = \$1.4117 per hundred cubic feet.
- (5) Identify any local conditions that affect water rates (e.g., flow-through for frost prevention, etc.):
- Wholesale water rates are established by the JPWB to cover the cost of treatment, O&M, debt service, and to fund reserves associated with the Water Treatment Plant (WTP) in Green River. Customers are served by the water retailers.
- B. Financial Statement (of Water Utility)
- (1) Revenues
- | | |
|--|--------------|
| a. Annual Revenues Generated from Water Sales: | \$ 6,220,000 |
| b. Annual Revenues from Tap Fees (N/A): | \$ 0 |
| c. Annual Revenues from Other Sources: | \$ 821,000 |
| d. Total Annual Revenues: | \$ 7,041,000 |
- (2) Expenditures
- | | |
|--|--------------|
| a. Annual Budget for Operation and Maintenance Expenses: | \$ 4,375,000 |
| b. Annual Payments for Debt Retirement: | \$ 1,916,000 |

c. Annual Payments to a Repair and Replacement Fund:	\$ 750,000
d. Annual Payments to an Emerg. Fund (* <u>Reserves on Hand</u>):	\$ 0*
e. Annual Payments for Other Purposes:	\$ N/A
f. Total Annual Payments:	\$ 7,041,000

(3) Other

a. Balance in Repair and Replacement Fund:	\$ 4,875,000
b. Balance in Emergency Fund:	\$ 3,438,000
c. Annual Cost of Water Quality Testing:	\$ 11,000

(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.? Yes

a. If not, how is the difference subsidized? N/A

2023 RECOMMENDATION



PHOTOS



RESOLUTIONS

RESOLUTION 22-01

GREEN RIVER•ROCK SPRINGS•SWEETWATER COUNTY JOINT POWERS WATER BOARD

A RESOLUTION AUTHORIZING SUBMISSION OF A REQUEST FOR A LEVEL II STUDY FOR THE EASTSIDE SYSTEM CAPACITY IMPROVEMENT PROJECT TO THE WYOMING WATER DEVELOPMENT COMMISSION, ON BEHALF OF THE GOVERNING BODY FOR THE CITY OF GREEN RIVER, WYOMING, CITY OF ROCK SPRINGS, WYOMING, SWEETWATER COUNTY, WYOMING, JOINT POWERS WATER BOARD (JPWB) FOR THE PURPOSE OF PREPARING PLANNING DOCUMENTS TO IMPROVE SYSTEM CAPACITY IN THE EASTSIDE OF THE CITY OF ROCK SPRINGS.

WHEREAS, the Governing Body for the JPWB was the sponsor of a Wyoming Water Development Commission Level I Study to Master Plan the JPWB's water system; and

WHEREAS, the Governing Body for the JPWB desires to continue to a Level II Study to further analyze and develop planning documents for the storage, transmission and pumping improvements necessary to enhance the capacity to deliver water to the Eastside of Rock Springs; and

WHEREAS, the Governing Body for the JPWB recognizes the need for the project; and

WHEREAS, the Wyoming Water Development Commission requires that certain criteria be met, as described in the "Operating Criteria of the Wyoming Water Development Program",

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF GREEN RIVER, WYOMING, CITY OF ROCK SPRINGS, WYOMING, SWEETWATER COUNTY, WYOMING, JOINT POWERS WATER BOARD that a Level II Study application be submitted to the Wyoming Water Development Commission on or before March 1, 2022.

BE IT FURTHER RESOLVED, that the General Manager is hereby designated as the authorized representative of the JPWB to act on behalf of the JPWB Governing Body on matters relating to this application and is the designated signatory for the application.

PASSED, APPROVED, AND ADOPTED THIS 24 DAY OF February 2022:

Terry Leigh
Terry Leigh, Chairman

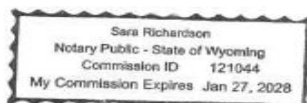
ATTEST: Hilary Huckfeldt
Hilary Huckfeldt
Secretary/Treasurer

State of Wyoming

County of Sweetwater

Resolution 22-01 was signed before me on February 24, 2022

by Terry Leigh, Board Chairman and Hilary Huckfeldt, Board Secretary/Treasurer



Sara Richardson
Notary Public

My Commission expires: January 27, 2028

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

AGRICULTURAL WATER PROJECTS

Project Name: Casper Alcova Irrigation District Master Plan

Program: Rehabilitation

Project Type: Agricultural Irrigation Supply

County: Natrona

Sponsor: Casper Alcova Irrigation District (CAID)

WWDO Recommendation: Level I

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The Casper Alcova Irrigation District is requesting a water master plan to fully evaluate the infrastructure of the District's irrigation system. The study would inventory and assess their canal system, investigate conveyance losses, and identify and prioritize capital improvement projects for financial planning. Cost estimates will be produced to include both a total and phased approach to construction and replacement according to a recommended rehabilitation schedule. The ability to pay for the improvements to the system and needed adjusted rate assessments are included as part of the study.

Project Manager: Jay Smith

I. PROJECT DESCRIPTION

Casper Alcova Irrigation District's infrastructure was constructed in the 1930's and 1940's and the District has been operating under a "repair only when needed" philosophy. The District is requesting a Level I study to evaluate existing infrastructure, prioritizing repair and replacement needs, and determination of cost estimates to assist in evaluating financing options and budget accordingly. The District also requests an evaluation and update of their current GIS.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Casper Alcova Rehabilitation 2015	III	23	2015	II	\$ 187,600	2020
Casper Alcova Underdrain 2016	III	55	2016	II	\$ 369,840	2021

2. Describe the location of the project:

Casper Alcova Irrigation District is located in and around the Town of Mills and Natrona County.

3. Summarize the request:

Casper Alcova Irrigation District is requesting funding for a Level I Study to inventory and assess the infrastructure and operations of the irrigation system. The District's infrastructure was constructed in the 1930's and 1940's and needs repair or replacement. The District needs assistance in evaluating existing infrastructure, prioritizing repair and rehabilitation needs, and determination of cost estimates in order to evaluate financing options and budget accordingly.

4. Summarize the reasons for the request:

Dedicated budgets for repair and replacement or emergency funds do not currently exist. The District's infrastructure is almost 100 years old and needs repair or replacement. The District's GIS is also out of date and needs to be

updated. This study will inventory and evaluate the current condition of the irrigation system and identify deficiencies and provide a schedule for improvements with cost estimates.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes

A. If not, is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

N/A

2. Project Priority According to WWDO Criteria: Acct II - Priority 8: LI Reconnaissance Studies

3. Will the project serve at least 1,000 water righted acres? Yes

A. Number of Acres: 24,265

4. Is the sponsor eligible for funding from other state or federal programs? Yes

A. If so, what are they? NRCS, BOR

5. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system?

The project is not currently served by a regional system. The District is open to regionalization.

6. Can the project be delayed or staged? Yes

A. Should it be? This project is not recommended to be delayed.

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. Description of Direct Flow Supply

(1) Direct Flow Diversion Right (CFS): 500 CFS

(2) Direct Flow Source (Name of River, Stream, etc.): Casper Canal

(3) Type of Diversion (Headgate, Pump, etc.): Headgate

(4) Water Transmission System (Canal, Pipeline, etc.): Open and lined canal, pipeline, cement ditches

B. Description of Stored Water Supply

(1) Name(s) of Storage Facility (Reservoir): Pathfinder, Seminoe, Alcova, Kortes

(2) Location: Wyoming

(3) Amount of Stored Water Right (Acre-Feet): 944,155 AF

(4) Is any of the stored supply obtained from a federal facility? Yes

a. Percent of Total Supply from Federal Facility: 100%

b. Amount of Stored Supply from Federal Facility (Acre-Feet): 944,155 AF

c. Name(s) of Federal Facility: Pathfinder, Seminoe, Alcova, Kortes

C. Description of Groundwater Supply

(1) Number of Wells: N/A

(2) Primary Supply Aquifer(s) or Formation(s): N/A

(3) Total Average Production Yield of All Wells (GPM): N/A

D. Water Rights

(1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights?

Valid and Adjudicated

E. System Capacity

(1) Maximum Capacity of the Water Supply System (Acre-Feet per Day or CFS): 1200 AF or 600 CFS

(2) Increased Capacity Needed (If Known) (Acre-Feet per Day or CFS): N/A

F. Water Usage

(1) Estimate of Total Water Provided by the System Annually (Acre-Feet per Year): 65,000 AF

(2) Average Day Demand (Acre-Feet per Day or CFS): 600 AF or 300 CFS

(3) Maximum Day Demand (Acre-Feet per Day or CFS): 1100 AF or 550 CFS

2. Existing Service Area and On-Farm Information

A. Service Area Information

(1) How many total acres are in the district? 35,000

(2) How many acres are assessed? 24,265

(3) How many acres are irrigated? 24,265

(4) What is the annual water delivery assessed (acre-feet per acre)? 2 AF

(5) How many individual land owners receive water? 547

B. On-Farm Information

(1) What is the normal irrigation season (e.g., May 1 – Sept. 30)? May 1-September 30

(2) What type(s) of on-farm irrigation water applications is used (e.g., center pivot, side roll, flood, etc.)?

Center pivot, side roll, flood

(3) Briefly describe the main crops and cropping patterns:

Alfalfa, corn, barley, soy beans

(4) Describe the water measuring devices currently in use:

V-notch, parshall flume, rectangular weir, cipoletti weir, meters

(5) Percentage of Farm Turnouts with Measuring Devices: 80%

(6) Are water deliveries recorded? Yes

(7) Estimated System Water Losses (Percentage): 50%-60%

(8) What water conservation measures are employed by the Sponsor?

Lined portions of ditches and main canal, and installed several pipelines throughout the system.

3. Financial Information

A. District Financing

(1) Is the assessment based on acres, acre-feet delivered, acre-feet of storage, or other (specify)?

Assessment is based on water righted acres

(2) How is voting authority delegated to water users (e.g., shares, individuals, number of acres, etc.)?

One vote per water righted acre

(3) What is the per-unit amount of the current assessment? \$24.00 per water righted acre

(4) Is there is a basic service charge or first acre assessment in addition to assessments? If so, specify amount: \$575.00 first acre charge

B. Financial Statement

(1) Revenues

a. Annual Revenues Generated from Assessments:	\$ 855,351.00
b. Annual Revenues from Other Sources:	\$ 96,028.00
c. Total Annual Revenues:	\$ 951,379.00

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$ 715,851.00
b. Annual Payments for Debt Retirement:	\$ 45,674.00
c. Annual Payments to a Repair and Replacement Fund:	\$ 0
d. Annual Payments to an Emergency Fund:	\$ 0
e. Annual Payments for Other Purposes:	\$ 0
f. Total Annual Payments:	\$ 761,525.00

(3) Other

a. Balance in Repair and Replacement Fund:	\$ 0
b. Balance in Emergency Fund:	\$ 0
c. Explanation (If Needed):	

N/A

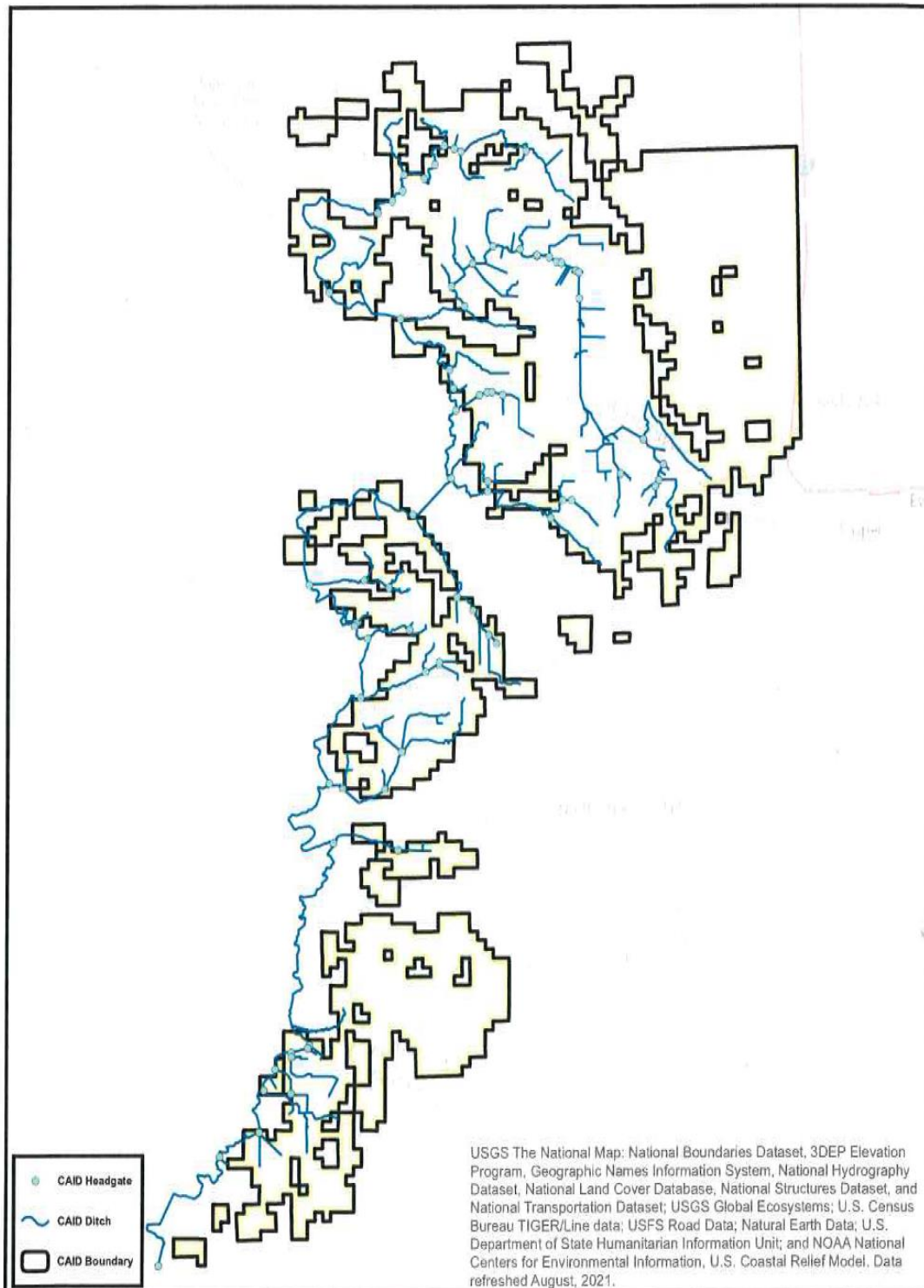
(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.?

Yes

a. If not, how is the difference subsidized?

CAID as a district is self sufficient for our everyday operations, and small maintenance. The District can accomplish most of the small projects through the year. That being said CAID relies on outside grants and continues to look for opportunities to keep the Kendrick Project a viable resource for the community.

PROJECT AREA MAP



Casper Alcova Irrigation District System Overview

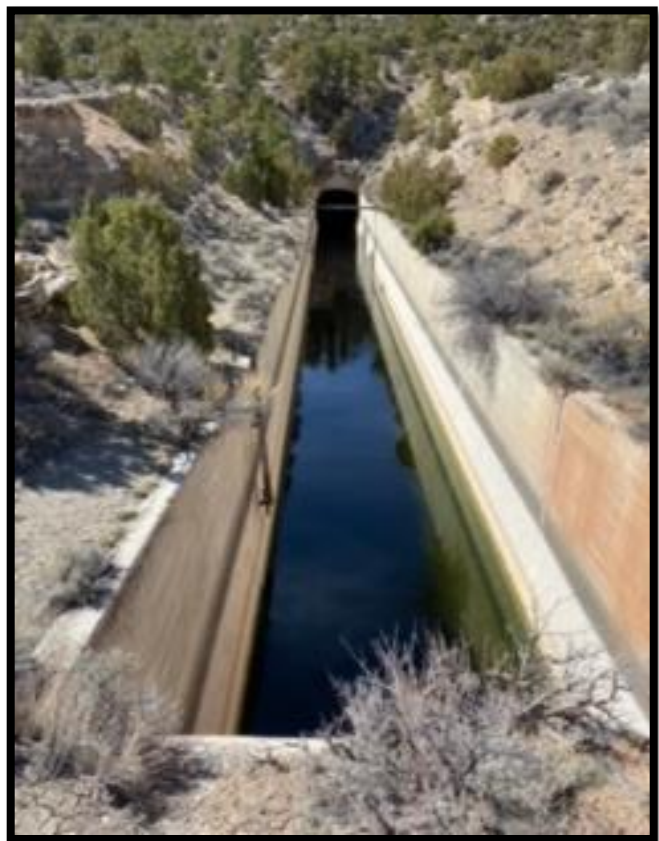
Prepared By: scowley; Date: 2/23/2022; Project No.: N/A; Source(s): WWC, ESRI
Path: O:\Marketing\03-Casper\Proposals\CAID\06GIS\mxd\CAID.mxd

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WWCENGINEERING
5880 Enterprise Drive, Suite 600
Casper, Wyoming 82609
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PHOTOS



RESOLUTION

Approval Form

1. We, understand, acknowledge, and know the necessity of this Water Development Program Application for a level 1 reconnaissance of our entire system. We voted unanimously to approve the application in a special meeting session February 22, 2022

[Signature] 2-23-22

Ron Richner, President Date

[Signature] 2-23-22

Bob Butler, Vice-President Date

[Signature] 2-23-22

Mike Sutton, Treasurer Date

[Signature] 2-23-22

Robert Keith, Member Date

[Signature] 2-23-22

Ric Herman, Member Date

Notarized 2/23/22



Paula L Stewart
Exp 11/10/22

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

AGRICULTURAL WATER PROJECTS

Project Name: Goshen Irrigation District Master Plan

Program: Rehabilitation

Project Type: Agricultural Irrigation Supply

County: Goshen

Sponsor: Goshen Irrigation District

WWDO Recommendation: Level I

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The Goshen Irrigation District is requesting an update to their 2008 water master plan to fully evaluate the infrastructure of the District's irrigation system. The study would inventory and assess their canal system, investigate conveyance losses, and identify and prioritize capital improvement projects for financial planning. Cost estimates will be produced to include both a total and phased approach to construction and replacement according to a recommended rehabilitation schedule. The ability to pay for the improvements to the system and needed adjusted rate assessments are included as part of the study.

Project Manager: Jay Smith

I. PROJECT DESCRIPTION

Goshen Irrigation District was formed in 1936 and serves 52,484 with a conveyance system from the Whalen Diversion Dam above Ft. Laramie to the Nebraska Stateline. The District is requesting an update to the 2008 water master plan and condition assessments of major infrastructure within the District's system. The Fort Laramie Canal suffered a major failure with the collapse of Tunnel No. 2 in 2019. The District is seeking to better understand risks and opportunities for rehabilitation and improvements within the District's system.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Goshen ID Master Plan	I	99	2006	II	\$ 225,000	2008
Goshen Rehabilitation 2009	III	38	2009	II	\$ 1,200,000	2014
Goshen Rehabilitation 2011	III	63	2011	II	\$ 1,100,000	2016
Goshen Rehabilitation 2013	III	141	2013	II	\$ 1,400,000	2018
Goshen Irrigation District-Guernsey Spillway	III	23	2015	II	\$ 449,570	2020
Goshen Rehabilitation 2017	III	75	2017	II	\$ 214,000	2022
Goshen Irrigation District Check Structure 2018	III	121	2018	II	\$ 468,330	2023

2. Describe the location of the project:

Goshen Irrigation District is located in and around the Town of Torrington and Goshen County, Wyoming, within the Platte River Basin. Goshen Irrigation District was formed in 1936 and serves 52,484 acres with a conveyance system from the Whalen Diversion Dam above Ft. Laramie to the Nebraska Stateline.

3. Summarize the request:

Goshen Irrigation District is requesting funding for a new Level I study to perform condition assessments on major infrastructure throughout the District. The Fort Laramie Canal is over 100 years old and suffered a catastrophic failure with the collapse of Tunnel No. 2 in 2019. The District is looking to have a complete inventory and assessment on all major infrastructure within the District. The study will also identify ability to pay, GIS updates, and recommend operational changes.

4. Summarize the reasons for the request:

The Fort Laramie Canal is over 100 years old and a major failure has already occurred with the collapse of Tunnel No. 2 in 2019. The condition and efficiency of other infrastructure is a major concern. This study would evaluate the condition of similarly aged infrastructure and provide a plan to avoid a potential failure in the future. A schedule for improvements with cost estimates shall also be developed.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes

A. If not, is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

N/A

2. Project Priority According to WWDO Criteria: Acct II - Priority 8: LI Reconnaissance Studies

3. Will the project serve at least 1,000 water righted acres? Yes

A. Number of Acres: 52,484

4. Is the sponsor eligible for funding from other state or federal programs? Yes

A. If so, what are they? NRCS, BOR

5. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system? No

6. Can the project be delayed or staged? Yes

A. Should it be? It is not recommended that this project be delayed.

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. Description of Direct Flow Supply

(1) Direct Flow Diversion Right (CFS): 1500 CFS

(2) Direct Flow Source (Name of River, Stream, etc.): North Platte River

(3) Type of Diversion (Headgate, Pump, etc.): Gravity Check

(4) Water Transmission System (Canal, Pipeline, etc.): Canal, Tunnels

B. Description of Stored Water Supply

(1) Name(s) of Storage Facility (Reservoir): Pathfinder Reservoir

(2) Location: 35 Miles SE of Casper, WY

(3) Amount of Stored Water Right (Acre-Feet): 1.1 Million Acre-Feet

(4) Is any of the stored supply obtained from a federal facility? Yes

a. Percent of Total Supply from Federal Facility: 100%

b. Amount of Stored Supply from Federal Facility (Acre-Feet): 1.1 Million Acre-Feet

c. Name(s) of Federal Facility: Pathfinder Reservoir

C. Description of Groundwater Supply

- (1) Number of Wells: 0
- (2) Primary Supply Aquifer(s) or Formation(s): N/A
- (3) Total Average Production Yield of All Wells (GPM): N/A

D. Water Rights

- (1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights?

Valid and Adjudicated

E. System Capacity

- (1) Maximum Capacity of the Water Supply System (Acre-Feet per Day or CFS): 2,770 Acre-Feet Per Day
- (2) Increased Capacity Needed (If Known) (Acre-Feet per Day or CFS): N/A

F. Water Usage

- (1) Estimate of Total Water Provided by the System Annually (Acre-Feet per Year): 133,000 Acre-Feet
- (2) Average Day Demand (Acre-Feet per Day or CFS): 900
- (3) Maximum Day Demand (Acre-Feet per Day or CFS): 1,000

2. Existing Service Area and On-Farm Information

A. Service Area Information

- (1) How many total acres are in the district? 52,484
- (2) How many acres are assessed? 52,484
- (3) How many acres are irrigated? 52,484
- (4) What is the annual water delivery assessed (acre-feet per acre)? 1.85
- (5) How many individual land owners receive water? 421

B. On-Farm Information

- (1) What is the normal irrigation season (e.g., May 1 – Sept. 30)? ~May 15 through September 15
- (2) What type(s) of on-farm irrigation water applications is used (e.g., center pivot, side roll, flood, etc.)? Pivots, Side rolls, Flood, and Gated pipe
- (3) Briefly describe the main crops and cropping patterns:
Beans, Corn, Sugar Beets, Alfalfa, Irrigated Pasture, and Wheat
- (4) Describe the water measuring devices currently in use:
Flumes, Weirs, and Instrumentation
- (5) Percentage of Farm Turnouts with Measuring Devices: 98%
- (6) Are water deliveries recorded? Yes
- (7) Estimated System Water Losses (Percentage): 37%
- (8) What water conservation measures are employed by the Sponsor?
Lining, Sprinkler Irrigation, Underground Laterals

3. Financial Information

A. District Financing

- (1) Is the assessment based on acres, acre-feet delivered, acre-feet of storage, or other (specify)?

Acres

(2) How is voting authority delegated to water users (e.g., shares, individuals, number of acres, etc.)?

Number of Acres

(3) What is the per-unit amount of the current assessment? \$32.00

(4) Is there is a basic service charge or first acre assessment in addition to assessments? If so, specify amount: \$200.00

B. Financial Statement

(1) Revenues

a. Annual Revenues Generated from Assessments:	\$ 1,679,488
b. Annual Revenues from Other Sources:	\$ 1,508,728
c. Total Annual Revenues:	\$ 3,188,216

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$ 1,643,800
b. Annual Payments for Debt Retirement:	\$ 141,456
c. Annual Payments to a Repair and Replacement Fund:	\$ 54,000
d. Annual Payments to an Emergency Fund:	\$ 2,000
e. Annual Payments for Other Purposes:	\$ 1,346,960
f. Total Annual Payments:	\$ 3,188,216

(3) Other

a. Balance in Repair and Replacement Fund:	\$ 0
b. Balance in Emergency Fund:	\$ 127,000
c. Explanation (If Needed):	

N/A

(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.?

Yes

a. If not, how is the difference subsidized?

N/A

PROJECT AREA MAP

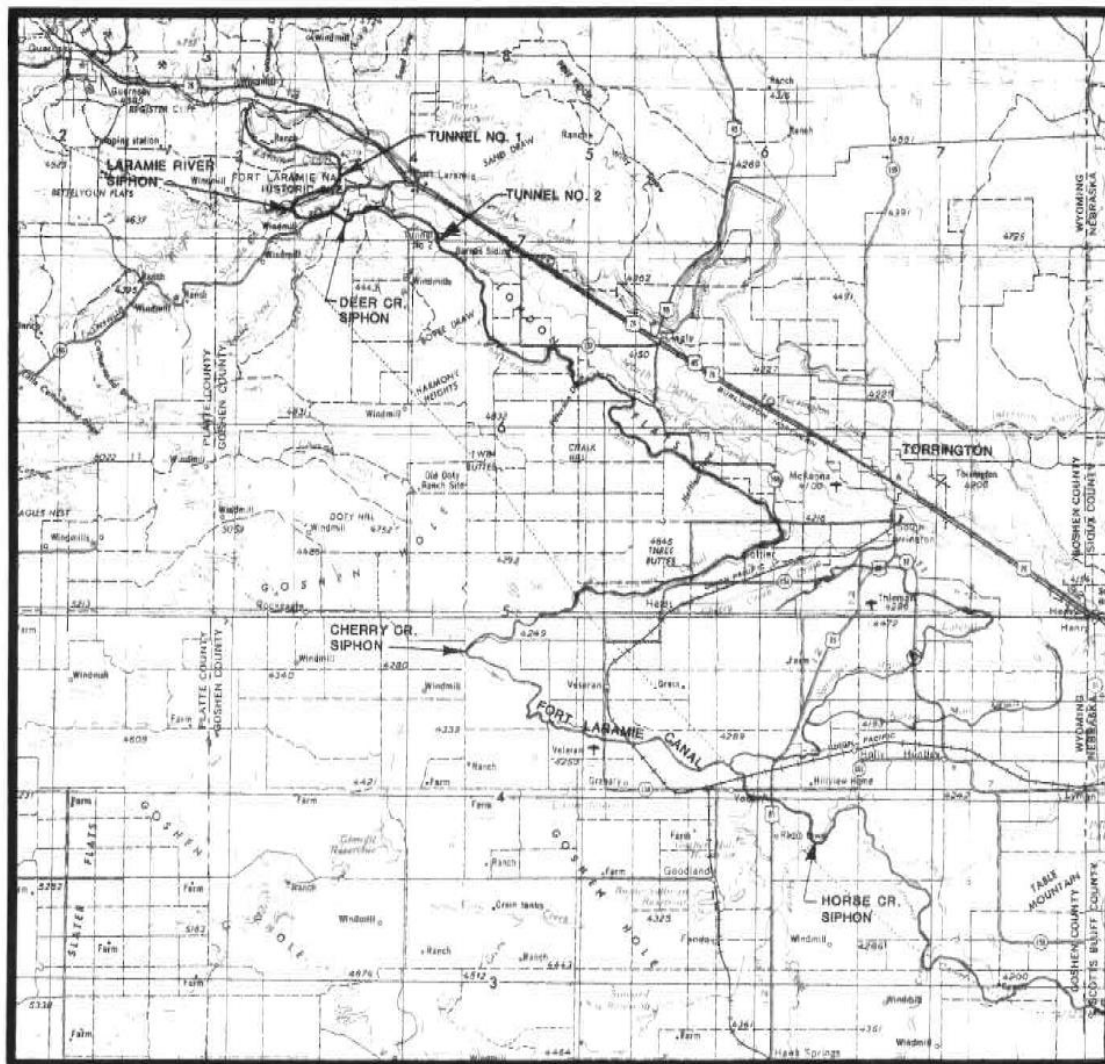


Figure 1.1. Location Map for the Fort Laramie Canal.

PHOTOS



RESOLUTION

GOSHEN IRRIGATION DISTRICT REGULAR BOARD MEETING MINUTES JANUARY 20, 2022

The regular meeting of the Board of Commissioners of the Goshen Irrigation District was called for January 20, 2022, at 10:00 A.M., at the district's headquarters in Torrington, Wyoming. President, David Saul called the meeting to order at 10:03 a.m. Roll call was taken and those members present were David Saul, President; Randy Steben, Vice President; Shawn Booth, Secretary\Treasurer; Robert Coxbill, Commissioner; Raymond Lynde, Commissioner, Rob Posten, Manager; Linda Keeran, Secretary; Andrea Janes, Cost Accountant; Byron Eisenbarth, Foreman; and Patrick Zimmerer, Attorney.

Attendees: from GFLID Rick Preston, Manager, Adam Hoelsing, Attorney, Scott Hort, Asst. Manager, Jim Yates, Doug Herdt, and Dennis Wambolt.

Cory Foreman, Project Manager HDR discussed the workshop from yesterday refining the numbers, reviewing the score for the non-economic criteria, refine the numbers with the capital costs so we didn't miss anything, and the life cycle analysis. He exchanged views about the district landowner meetings dates and times. Sec-Booth offered this will be the same information that we will come to the board table with when we make our decision. GID's will be held on February 15th for District #1 at 10:00 a.m. to 12:00 p.m., District #2 1:00 to 3:00 p.m., and District #3 3:30 p.m. to 5:30 p.m. February 16th for District #3 10:00 a.m. to 12:00 p.m. GFLID's meeting will be held on February 9, 2022. HDR-Foreman these will be a forward working meeting. Com-Coxbill offered a new alternative for a new 4.5-mile tunnel. HDR-Foreman considered 5 to 6 hours for the alignment to see if it could be feasible, it would be a major shift in the option, and you don't want the Select Water and the Nebraska folks to back off. Com-Coxbill made a motion for HDR to look at the alternative tunnel. VP-Steben seconded the motion, motion passed.

HDR-Foreman explored updating GID's Master Plan, he reviewed the changing infrastructure and structure analysis and March 1, 2022, is the WWDC application date for the Level I planning stages, it will cost the district \$1,000.00 for the application. GFLID-Preston offered that Whalen Dam Diversion is in bad shape, if we lose that we would have to shut down. HDR-Foreman the purpose of the master plan is a requirement of the operating criteria from WWDC that's why they pay 100% of it to go through and identify those needs and prioritize them. Sec-Booth made a motion to file an updated Level I application. Com-Lynde seconded the motion, motion carried.

Pres-Saul considered discussion of a new MOU between GID and GFLID. Att-Hoelsing offered he would have to meet with his board. What if we start a discussion where GFLID does a 51% reimbursement or a contribution agreement depending on how it works out on all engineering and costs subject to GFLID approving bills and expenses and no outright contractual obligation to automatically reimburse. That gives us a voice in the process, if we agree, if we don't agree we are back to square one. It gives you the management of the project and the opportunity to continue to be the lead on it. Pres-Saul, I think that is what we are all looking for. Com-Coxbill stated we don't want to open our contracts. Pres-Saul we've already done this with the temporary fix, this is different from the contract you are referring to. We've never been in this position before, spending this type of money, asking different agencies for money so this is brand new, an agreement between the two districts. We are the ones voting on this, they want their voices to be heard, we are not going against our contract. Sec-Booth five votes are going to be counted for the final decision, what they say carries a tremendous amount of weight. Att-Hoelsing Shawn I agree, sometimes you have to do that to come to a conclusion. You went and found half the money and I proposed something that I think works.

The XM loan was discussed, Man-Preston asked how much farther are we willing to go to continue to improve our infrastructure, but can we afford to go another \$25 million. Com-Coxbill if we get our hands on money lets go. HDR-Foreman and that's what the master plan funding and the ability to pay is part of that. Man-Preston the points have been made we can't keep away from the infrastructure, I think there will always be money in

**GOSHEN IRRIGATION DISTRICT
REGULAR BOARD MEETING MINUTES
JANUARY 20, 2022**

ADJOURN

There being no further business, Commissioner Steben made a motion to adjourn the meeting. President, Saul adjourned the meeting at 3:35 P.M.

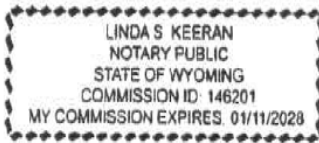
Respectively submitted this 20th day of January 2022.
Shawn Booth, Secretary-Treasurer

ATTEST:

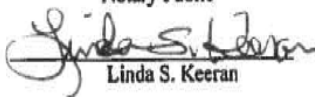
SB/lk

The foregoing instrument was acknowledged before me this 20th day of January 2022.

Witness my hand and official seal.



My Commission Expires: January 11, 2028

Notary Public

Linda S. Keeran

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

AGRICULTURAL WATER PROJECTS

Project Name: Sidon Irrigation District Master Plan

Program: Rehabilitation

Project Type: Agricultural Irrigation Supply

County: Big Horn

Sponsor: Sidon Irrigation District

WWDO Recommendation: Level I

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The Sidon Irrigation District is a WWDC eligible public entity and is requesting funding to develop a Level I Master Plan. The District is in need of a comprehensive inventory of the system, assessment of condition of components and prioritized options for keeping the system operational. This study will include GIS mapping and provide guidance for the District to apply for additional planning and construction funding through WWDC and other programs.

Project Manager: Mabel Jones

I. PROJECT DESCRIPTION

Sidon Irrigation District (District) is proposing to sponsor a Level I Master Plan to evaluate irrigation facilities and infrastructure associated with the Sidon Canal and provide a schedule for improvements with cost estimates.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Sidon Canal Rehabilitation	II	74	1993	II	\$ 75,000	1995
Sidon Canal Rehabilitation	III	206	1995	II	\$ 1,060,000	1998
Sidon Bitter Creek Crossing Rehabilitation	III	88	2002	II	\$ 217,000	2007
Sidon Rehabilitation 2008,09	III	75	2008	III	\$ 295,000	2014
Sidon Irrigation District Rehabilitation 2014	III	100	2014	II	\$ 109,000	2019
Sidon Irrigation District Rehabilitation 2016	III	55	2016	II	\$ 352,500	2021
Sidon Irrigation District Rehabilitation 2017	III	75	2017	II	\$ 483,000	2022
Sidon Irrigation District Rehabilitation 2018	III	121	2018	II	\$ 823,000	2023
Sidon Irrigation District Rehabilitation 2020	III	113	2020	II	\$ 1,060,000	2025
Sidon Irrigation District Rehabilitation 2021	III	12	2021	II	\$ 576,000	2026

2. Describe the location of the project:

This project area is within the Sidon Irrigation District (District) and includes agricultural land surrounding the town of Cowley, Wyoming extending south to include land surrounding the town of Byron, Wyoming. State Highways 310 and 14 provide access to the area. The District is primarily located in Big Horn County, Wyoming with the head gate situated on the Shoshone River just over the county line in Park County. Bitter Creek is utilized as a supplemental supply. The canal system provides water for approximately 13,300 acres of crops and pasture.

3. Summarize the request:

The District is requesting a reconnaissance study to determine the current condition and future needs for agricultural water delivery to over 600 landowners. The canal originates at a headgate on the Shoshone River on the Park County line and extends for approximately 35 miles until it empties into a ravine which is tributary to Blue Wash. The Level I study will examine the condition of the irrigation conveyances, turnouts, and other structures to provide the District with guidance for planning and phasing future rehabilitation and upgrades.

4. Summarize the reasons for the request:

The Sidon Canal was constructed in the early 1900s and has not had a planning study completed since 1994. The District has completed numerous projects including improvements at points of diversion and canal rehabilitation since the original plan. They are now in need of an updated study to prioritize future rehabilitation needs. Currently, the physical structure of known weak points on the canal is a concern and efficiency of the system is questionable. The geology of the area includes very rocky and porous soils which are the suspected cause of significant seepage. Alternatives to address sedimentation, canal stability and seepage are needed. Many of the individual irrigation turnouts are in poor repair and in need of redesign and replacement. The District would also like to consider recommendations for automation and measurement devices. This study will provide the District with GIS mapping, assessment of infrastructure condition, and prioritized projects to address water use efficiency and infrastructure repair or replacement.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes

A. If not, is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

N/A

2. Project Priority According to WWDO Criteria: Acct II - Priority 8: LI Reconnaissance Studies

3. Will the project serve at least 1,000 water righted acres? Yes

A. Number of Acres: 13,281.93

4. Is the sponsor eligible for funding from other state or federal programs? Yes

A. If so, what are they? Bureau of Reclamation WaterSmart and possibly others

5. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system? No

6. Can the project be delayed or staged? Yes

A. Should it be? It is not recommended that this project be delayed

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. Description of Direct Flow Supply

(1) Direct Flow Diversion Right (CFS): 340 cfs

(2) Direct Flow Source (Name of River, Stream, etc.): Shoshone River, Bitter Creek

(3) Type of Diversion (Headgate, Pump, etc.): Headgate

(4) Water Transmission System (Canal, Pipeline, etc.): Canals and Laterals

B. Description of Stored Water Supply

(1) Name(s) of Storage Facility (Reservoir): N/A

(2) Location: N/A

(3) Amount of Stored Water Right (Acre-Feet): N/A

(4) Is any of the stored supply obtained from a federal facility? N/A

a. Percent of Total Supply from Federal Facility: N/A

b. Amount of Stored Supply from Federal Facility (Acre-Feet): N/A

c. Name(s) of Federal Facility: N/A

C. Description of Groundwater Supply

(1) Number of Wells: N/A

(2) Primary Supply Aquifer(s) or Formation(s): N/A

(3) Total Average Production Yield of All Wells (GPM): N/A

D. Water Rights

(1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights? Yes

E. System Capacity

(1) Maximum Capacity of the Water Supply System (Acre-Feet per Day or CFS): 340 CFS

(2) Increased Capacity Needed (If Known) (Acre-Feet per Day or CFS): Unknown

F. Water Usage

(1) Estimate of Total Water Provided by the System Annually (Acre-Feet per Year): 121,360

(2) Average Day Demand (Acre-Feet per Day or CFS): 674 Acre-Feet per Day

(3) Maximum Day Demand (Acre-Feet per Day or CFS): 674 Acre-Feet per Day

2. Existing Service Area and On-Farm Information

A. Service Area Information

(1) How many total acres are in the district? 13,281.93

(2) How many acres are assessed? 13,281.93

(3) How many acres are irrigated? Unknown

(4) What is the annual water delivery assessed (acre-feet per acre)? Per Acre

(5) How many individual land owners receive water? 640

B. On-Farm Information

(1) What is the normal irrigation season (e.g., May 1 – Sept. 30)? April to October

(2) What type(s) of on-farm irrigation water applications is used (e.g., center pivot, side roll, flood, etc.)?
Flood, Center Pivot

(3) Briefly describe the main crops and cropping patterns:

Rotational cropping; Main crops include corn, sugar beets, barley, alfalfa, beans, seed and pasture

(4) Describe the water measuring devices currently in use:

Water is only measured at the Lindsay Spill. There is not a lateral or farm turn-out measurement.

(5) Percentage of Farm Turnouts with Measuring Devices: 0

- (6) Are water deliveries recorded? No
- (7) Estimated System Water Losses (Percentage): Unknown
- (8) What water conservation measures are employed by the Sponsor? None

3. Financial Information

A. District Financing

- (1) Is the assessment based on acres, acre-feet delivered, acre-feet of storage, or other (specify)?

Acres

- (2) How is voting authority delegated to water users (e.g., shares, individuals, number of acres, etc.)?

Number of Acres

- (3) What is the per-unit amount of the current assessment? \$36 per acre

- (4) Is there is a basic service charge or first acre assessment in addition to assessments? If so, specify amount:

\$36 on first acre

B. Financial Statement

(1) Revenues

a. Annual Revenues Generated from Assessments:	\$ 486,784.03
b. Annual Revenues from Other Sources:	\$ 14,743.39
c. Total Annual Revenues:	\$ 501,527.42

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$ 485,100.00
b. Annual Payments for Debt Retirement:	\$ N/A
c. Annual Payments to a Repair and Replacement Fund:	\$ N/A
d. Annual Payments to an Emergency Fund:	\$ None
e. Annual Payments for Other Purposes:	\$ N/A
f. Total Annual Payments:	\$ 485,100.00

(3) Other

a. Balance in Repair and Replacement Fund:	\$ N/A
b. Balance in Emergency Fund:	\$ 170,965.00
c. Explanation (If Needed): District does not have a repair and replacement fund.	

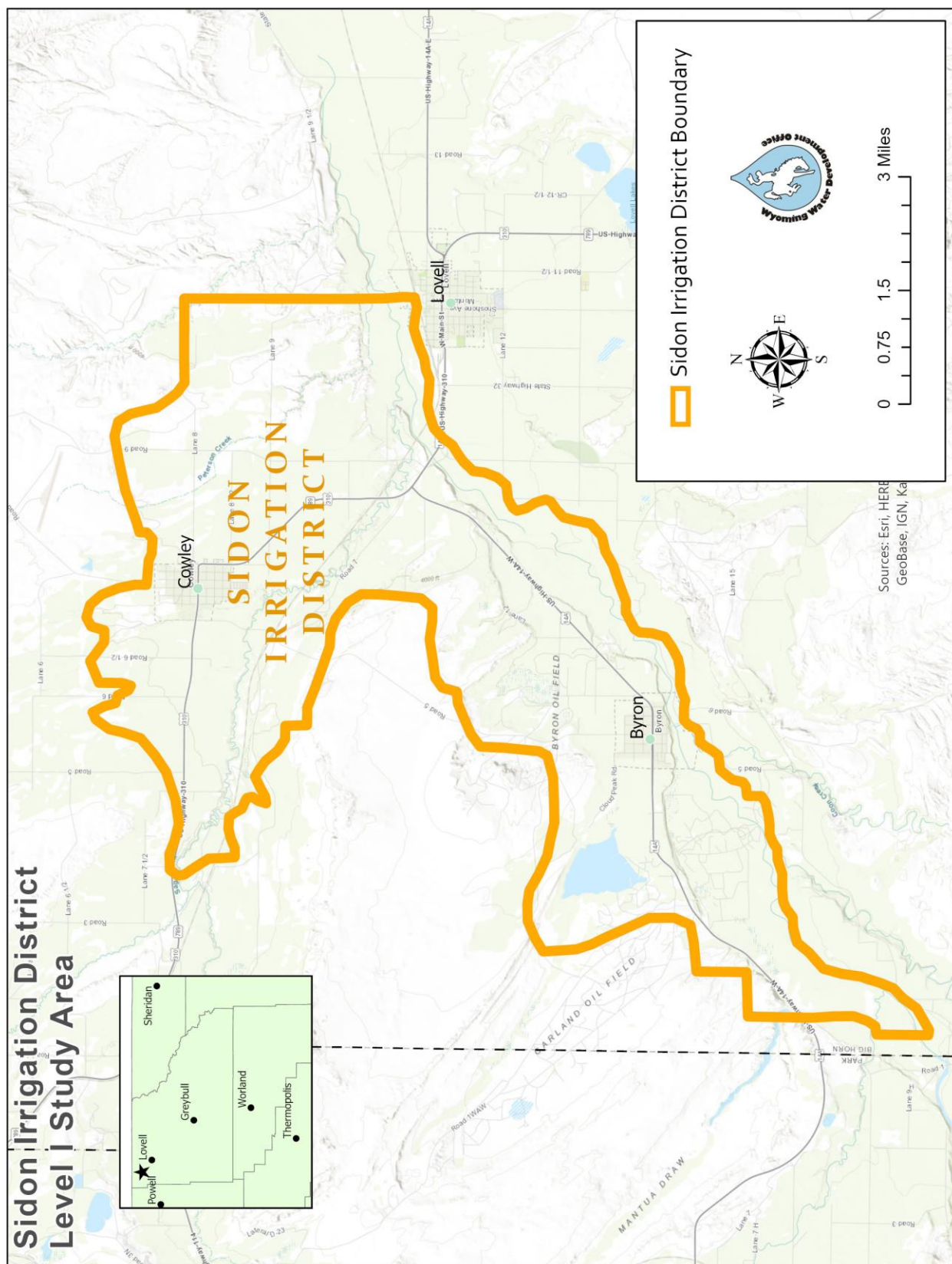
- (4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.?

Yes

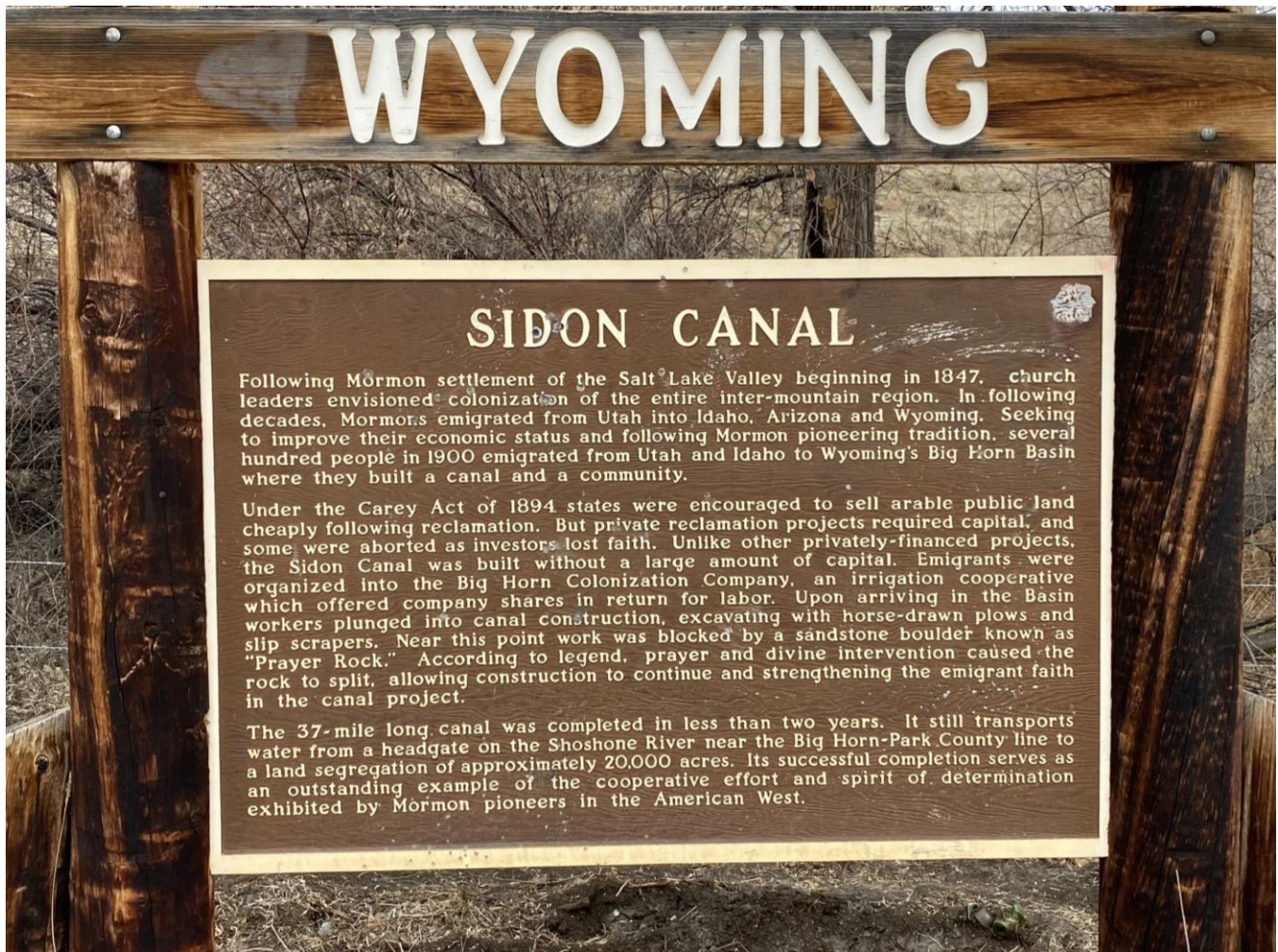
- a. If not, how is the difference subsidized?

N/A

PROJECT AREA MAP



Sidon Irrigation District LI Study-Site Visit Photos



Shoshone River diversion and headgate to Sidon Canal. The District reports that these structures are in good condition.



Bitter Creek serves as a supplemental supply for the District. Recent improvements at the Bitter Creek Diversion include concrete repair and a fish passage structure.



Erodible, porous soils create challenges for District operations especially along the lower canal. “The Cut” (**above left**) was previously piped. This is a critical choke point on the canal with stability issues and limited space for conducting maintenance. Spoil piles and alkali deposits from seepage (**above right**) along the lower canal.

RESOLUTION

Annual Meeting Sidon Irrigation District- February 08, 2022

Called to order at 12:00pm. Present: Brent Rageth, Ken Blackburn, Chris Crosby, Leslie Mayes, John Nation, Mike Gams, John Hatch, Rodney Crosby, John Gams, Casey Ellis, Jordan Brost, Casey Crosby, Wes Wilson, David Hessenthaler, Carson Hessenthaler.

Purpose: To adopt a resolution to apply for a Level I Reconnaissance Study with the Wyoming Water Development Commission. The meeting was also held to elect the board member for Voting District #1 and conduct the annual meeting.

Motion made by Ken Blackburn for the Sidon Irrigation District to apply to Wyoming Water Development Commission for the completion of a Level I Reconnaissance Study. Furthermore, the Sidon Irrigation District Commissioners authorize Brent Rageth, District President, to sign said application on behalf of all.

Motion seconded by Chris Crosby.

Being no further discussion the Motion passes unanimously.

After discussing other Sidon business, the meeting was adjourned at 3pm.

Signed: Marvin Brent Rageth

Marvin Brent Rageth – President

State of Wyoming

County of Big Horn

This instrument entitled Resolution was acknowledged before me on
2/25/22 by Marvin Brent Rageth.



Leslie B. Mayes

Notary exp. July 23, 2024

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

AGRICULTURAL WATER PROJECTS

Project Name: Tillard Canal Master Plan

Program: Rehabilitation

Project Type: Agricultural Irrigation Supply

County: Big Horn

Sponsor: Tillard Canal Company

WWDO Recommendation: Level I

Proposed Budget: \$TBD

Recommend waiving, for this Level only, the requirement that the Sponsor be a public entity.

Basis for the Funding Recommendation:

The Tillard Canal Company is requesting funding to develop a Level I Master Plan. As part of the planning process the Company would also like to explore opportunities for becoming a public entity. The Level I Study will provide a blueprint for the Company which considers alternatives for entity formation, evaluates infrastructure condition and prioritizes system rehabilitation needs.

Project Manager: Mabel Jones

I. PROJECT DESCRIPTION

The Tillard Canal Company is proposing to sponsor a Level I Master Plan to evaluate irrigation facilities and infrastructure associated with the canal and pumping systems and identify deficiencies and provide a schedule for improvements with cost estimates.

1. Existing and Prior Legislation:

The project Sponsors have not received funding for prior WWDO projects.

2. Describe the location of the project:

This project area is located directly northeast of the community of Basin, Wyoming and is accessed via State Highway 20 and Basin Garden Road. The canal is fed by water pumped from the Big Horn River in Big Horn County, Wyoming (44.402537, -108.026076).

3. Summarize the request:

The Tillard Canal Company (Company) is requesting a reconnaissance study to determine the current condition and future needs for agricultural water delivery to 12 landowners. The Big Horn River provides water to the canal via portable pumps. The canal is estimated to be seven miles in length and provides irrigation water by gravity flow to approximately 1,000 acres of crops and pasture. It is estimated that there are approximately 14 headgates on the canal. The Level I study will examine the condition of the irrigation conveyances and pumping equipment to provide the Company with guidance for planning and phasing future rehabilitation and upgrades. The study will also outline options for the Canal Company to become a public entity.

4. Summarize the reasons for the request:

The canal was built approximately 100 years ago. The canal is unlined with significant erosion from canal walls. Seepage from the canal is estimated to account for water losses up to 35%. Due to sedimentation and other canal conditions there are challenges in maintaining water at adequate elevations to feed the headgates which impedes water delivery to some users. The portable pumps have exceeded their lifespan and there are safety issues related

to daily maintenance and pulling the pumps during seasonal high flows or releases from Boysen Reservoir. The headgates are generally in good condition.

A comprehensive assessment of needs is lacking making it difficult for the Company to prioritize major maintenance and rehabilitation projects. The Company would also like to understand what options may be available for improving their pumping system.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? No

A. If not, is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

Level I study

2. Project Priority According to WWDO Criteria: Acct II - Priority 8: LI Reconnaissance Studies

3. Will the project serve at least 1,000 water righted acres? Yes

A. Number of Acres: 1053.32

4. Is the sponsor eligible for funding from other state or federal programs? No

A. If so, what are they? N/A

5. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system?

The Sponsor is not served by a regionalized water supply and is not interested in considering this.

6. Can the project be delayed or staged? Yes

A. Should it be? It is not recommended that this project be delayed.

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. Description of Direct Flow Supply

(1) Direct Flow Diversion Right (CFS): 23.96 CFS

(2) Direct Flow Source (Name of River, Stream, etc.): Big Horn River

(3) Type of Diversion (Headgate, Pump, etc.): Pumps

(4) Water Transmission System (Canal, Pipeline, etc.): Canal

B. Description of Stored Water Supply

(1) Name(s) of Storage Facility (Reservoir): N/A

(2) Location: N/A

(3) Amount of Stored Water Right (Acre-Feet): N/A

(4) Is any of the stored supply obtained from a federal facility? N/A

a. Percent of Total Supply from Federal Facility: N/A

b. Amount of Stored Supply from Federal Facility (Acre-Feet): N/A

c. Name(s) of Federal Facility: N/A

C. Description of Groundwater Supply

(1) Number of Wells: None

(2) Primary Supply Aquifer(s) or Formation(s): N/A

(3) Total Average Production Yield of All Wells (GPM): N/A

D. Water Rights

(1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights? Yes

E. System Capacity

(1) Maximum Capacity of the Water Supply System (Acre-Feet per Day or CFS): 23.96 CFS

(2) Increased Capacity Needed (If Known) (Acre-Feet per Day or CFS): None

F. Water Usage

(1) Estimate of Total Water Provided by the System Annually (Acre-Feet per Year): Unknown

(2) Average Day Demand (Acre-Feet per Day or CFS): Unknown

(3) Maximum Day Demand (Acre-Feet per Day or CFS): Unknown

2. Existing Service Area and On-Farm Information

A. Service Area Information

(1) How many total acres are in the district? 1053.32

(2) How many acres are assessed? 1053.32

(3) How many acres are irrigated? 1053.32

(4) What is the annual water delivery assessed (acre-feet per acre)? Per Acre

(5) How many individual land owners receive water? 12

B. On-Farm Information

(1) What is the normal irrigation season (e.g., May 1 – Sept. 30)? April 20 to October 10

(2) What type(s) of on-farm irrigation water applications is used (e.g., center pivot, side roll, flood, etc.)?
Center Pivot and Flood

(3) Briefly describe the main crops and cropping patterns:

Alfalfa Hay, Grass Hay, Small Grains, Sugar Beets, Pasture

(4) Describe the water measuring devices currently in use: None

(5) Percentage of Farm Turnouts with Measuring Devices: None

(6) Are water deliveries recorded? No

(7) Estimated System Water Losses (Percentage): 30-35%

(8) What water conservation measures are employed by the Sponsor? None

3. Financial Information

A. District Financing

(1) Is the assessment based on acres, acre-feet delivered, acre-feet of storage, or other (specify)?
Acres

(2) How is voting authority delegated to water users (e.g., shares, individuals, number of acres, etc.)?
Shares (1 vote per irrigated acre)

(3) What is the per-unit amount of the current assessment? \$16.50/Acre

(4) Is there is a basic service charge or first acre assessment in addition to assessments? If so, specify amount: No

B. Financial Statement

(1) Revenues

a. Annual Revenues Generated from Assessments:	\$ 17,124.05
b. Annual Revenues from Other Sources:	\$ 29.14
c. Total Annual Revenues:	\$ 17,153.19

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$ 13,888.59
b. Annual Payments for Debt Retirement:	\$ 0
c. Annual Payments to a Repair and Replacement Fund:	\$ 0
d. Annual Payments to an Emergency Fund:	\$ 0
e. Annual Payments for Other Purposes:	\$ 0
f. Total Annual Payments:	\$ 13,888.59

(3) Other

a. Balance in Repair and Replacement Fund:	\$ 0
b. Balance in Emergency Fund:	\$ 10,576.23
c. Explanation (If Needed):	

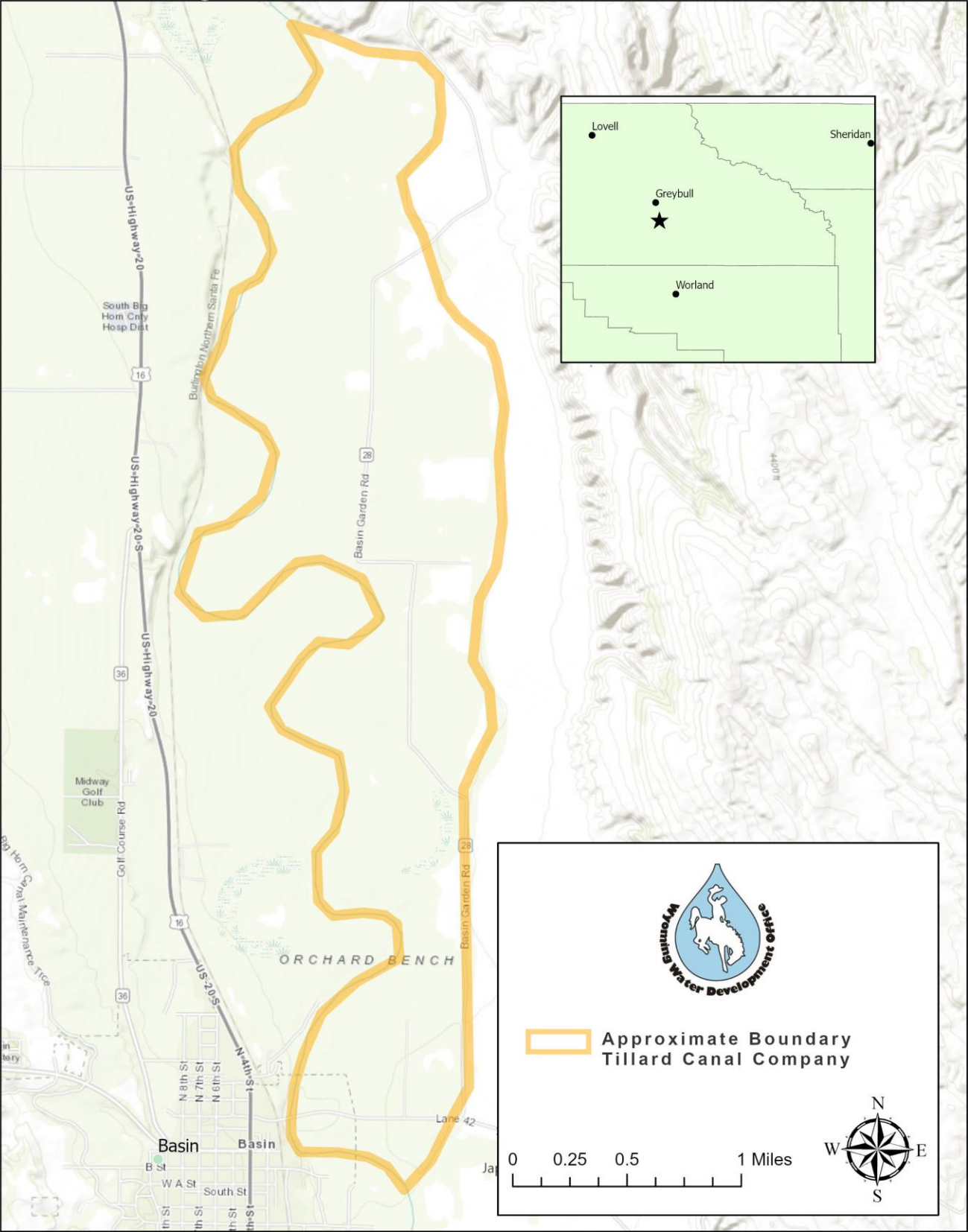
(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.?

The operation of the water system has been self-supporting. Landowners are voluntarily taking care of ditches and making repairs. Hiring help has been minimal due to landowner efforts.

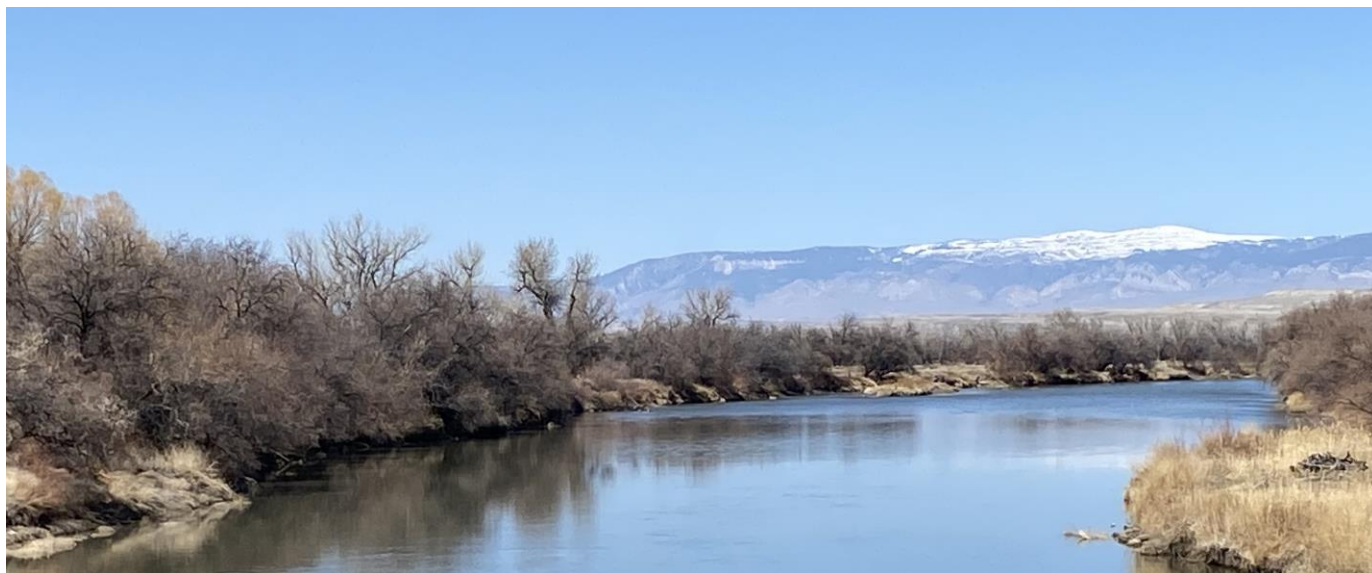
a. If not, how is the difference subsidized?

N/A

Tillard Canal Company Level I Study Area



Tillard Canal Company LI Study Site Visit Photos



Big Horn River looking downstream at the County Lane 42 Bridge east of Basin. The Tillard Canal Company Diversion is located approximately $\frac{3}{4}$ mile upstream of the bridge.



The Tillard Canal is fed by two portable pumps which are placed in the Big Horn River (**left**). The canal inlet tubes and pipes are shown on the **right**.



Top left: Approximately 14 headgates provide on farm delivery. **Top Right:** The Company provides water applied via pivot and flood irrigation to just over 1000 acres on the east side of the Big Horn River. **Bottom:** Splitter at the end of the Tillard Canal and wasteway to the Big Horn River.



RESOLUTION

2022 Tillard Canal Stockholders/Board of Directors Meeting Minutes
Meeting Held at the REA building in Basin, WY
Date: 1/29/2022

Individuals present:

Dave Johnson
Georgette Malcolm
Chuck Valceschini
Mike Laird
Jerry Hill & Becky Hill
Cole Hill & Trysta Hale

Meeting called to order by Becky Hill at 2:05 pm

Review of written minutes from 2021 stockholder's meeting.

Becky Hill requested change of 2021 minutes below.

- Cole Hill and Trysta Hale are grand children
- Kevin Stilson was appointed to board of directors not Jerry Hill

Chuck made motion to accept changes, seconded by Mike. Motion passed.

Financial Statement

Profit loss and balance statement was reviewed. Seen a profit of \$3,206.32.

Motion to accept by Chuck and Mike seconded. Motion passed.

Ditchrider Report

Kevin and Jerry assumed rolls as ditchrider. They did maintenance and repairs on pumps and canal. Jerry said burning canal went well since everyone helped. Dave and Mike mentioned that everyone should be called to help burn the canal this year. The spare 75 hp electric motor for the large pump was rebuilt.

The large pump's impeller was damaged and was down for three days. Small pump was used minimally. Small pump's discharge was moved to a better location. Canal had to be cleaned from the start of the pumps to approximately ¼ mile due to excessive vegetation build up (Kevin cleaned with his excavator). It will be necessary to have the canal cleaned before the 2022 season by larger equipment.

Old Business

The Wyoming Water Development Office was contacted for project application information. It was too late to apply in 2021.

Mike moved to proceed with the application and approve the fee. Chuck seconded.

Discussion below. Motion passed.

Application will be completed this year 2022 and the \$1,000 application fee was approved by the stockholders and board of directors. Becky Hill will continue to be the contact person for the Wyoming Water Development Project.

New Business

Discussion of the board of directors meeting occurring with the stockholders meeting. If further discussion is needed after this meeting the board of directors can call a special meeting directly following the first meeting.

Anyone who has interest in the land and/or is a leasee of the land can serve on the board of directors.

Motion by Mike and seconded by Chuck to change the bylaws to reflect this change.

Motion passed.

Election of Board Officers

Mike moved to appointed Cole, Chuck and Kevin to the board of directors. Georgette Seconded the motion. Motion passed.

Adjournment

Motion made by Mike to adjourn meeting and seconded by Chuck. Motion passed. Meeting was adjourned at 2:59 pm

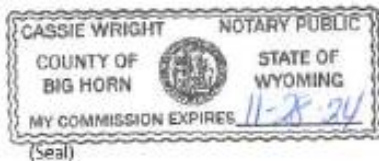
X Becky Hill

State of Wyoming

County of Big Horn

This instrument entitled 2022 Tillard Canal Stockholders Board of Directors Meeting Minutes was acknowledged before me on
Title of document being acknowledged

Feb 10, 2022 by Becky Hill, Secretary/Treasurer
Date Name of Person



Cassie Wright
Signature of Notarial Officer
Notary Public
Title (e.g. Notary Public) OR Rank (Rank if officer in active military)

My commission expires: 11-28-2024

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

AGRICULTURAL WATER PROJECTS

Project Name: Cody Canal Rehabilitation

Program: Rehabilitation

Project Type: Agricultural Irrigation Supply

County: Park

Sponsor: Cody Canal Irrigation District

WWDO Recommendation: Level II

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The sponsor is eligible for a Level II Rehabilitation Study on the irrigation system. The study is recommended to identify and develop design options for projects that reduce sediment, improve system efficiency, and replace critical infrastructure that have exceeded design life expectancy.

Project Manager: Mike Robertson

I. PROJECT DESCRIPTION

The Cody Canal Irrigation District has requested a Level II feasibility study to investigate design options that would help reduce sediment contributions back into the Shoshone River, a system with excess sediments that contributes to infrastructure issues to several entities along its course and affects fish populations in the river. A recent WWDC funded watershed study in the Lower Shoshone River identified several mitigation options for downstream irrigation districts to handle high sediment loads. Another WWDC funded watershed study is starting this year in the Upper Shoshone River Watershed with one goal being to evaluate options to convey water more efficiently and reduce sediments. Any efforts to reduce sediment contributions benefits all stakeholders in the Shoshone River watershed.

The district is also interested in improving efficiency and a previous study suggested that a re-regulating reservoir and expanding automation may be good options; the district proposes exploring these options in more detail. Designs that help reduce spillage into tributary streams could both improve system efficiency and reduce erosion in those drainages.

Another priority for this study is to evaluate options for the deteriorating structure on Sage Creek that diverts flow into the Lower Sage Creek lateral. The district would like to evaluate diverting flow from the main canal into a pipe that could supply flow directly into this and the Schultz and McNeil laterals. This would eliminate the need to use Sage Creek as a conduit and reduce erosion in the creek and improve conditions for fish populations. Alternatively, the existing structure could be replaced with one that facilitates fish passage to the upper sections of Sage Creek. The district would also like to obtain an updated cost estimate for converting several laterals into pipe, including the Holm, Moller, Bell, McNeil, Schultz, and Ross laterals.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Cody Canal ID Rehabilitation and Hydro	II	75	2005	II	\$ 250,000	2006
Cody Canal Rehab, GIS	III	33	2008	II	\$ 200,000	2010
Cody Canal Chute	III	63	2011	II	\$ 223,000	2016
Cody Canal Drop Structure	III	63	2011	II	\$ 50,000	2016
Cody Canal Rehabilitation 2013	III	141	2013	II	\$ 144,000	2018
Cody Canal Laterals	II	65	2017	II	\$ 180,000	2020
Cody Canal Rehabilitation 2019	III	55	2019	II	\$ 344,000	2024

2. Describe the location of the project:

The Cody Canal Irrigation District diverts direct flows from the South Fork Shoshone River and includes canals and laterals that supply 11,433 irrigated acres in and around Cody, Wyoming.

3. Summarize the request:

The Sponsor is requesting a rehabilitation study to examine several options that should improve efficient use of water and reduce the sediment load that the system contributes back into the Shoshone River. Efficiency projects could eliminate late season shortages and delivery challenges. The proposed study would expand on ideas discussed in previous studies, including on or off canal storage in a re-regulating reservoir, increased system automation, and any options that may reduce the need to spill into tributary streams. Two other components of the study would be to evaluate options for replacing the diversion structure on the Lower Sage Creek lateral, including the potential to bypass directing flow down Sage Creek itself and the district has requested updated cost estimates for several piping projects proposed in a 2018 study of the Cody Canal laterals.

4. Summarize the reasons for the request:

The sponsor would like to improve water efficiency in its main canal and laterals. This system relies on direct flows upstream of Buffalo Bill Reservoir and they are subject to shortages in low water years. There are also concerns with high sediments throughout the Shoshone River watershed and this study would provide opportunity to contribute to regional efforts to reduce sediment contributions wherever it is feasible.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes

A. If not, is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

N/A

2. Project Priority According to WWDO Criteria: Acct II - Priority 7: LII Feasibility Studies

3. Will the project serve at least 1,000 water righted acres? Yes

A. Number of Acres: 11,433

4. Is the sponsor eligible for funding from other state or federal programs? Yes

A. If so, what are they? The irrigation district has coordinated with Wyoming Game and Fish and the Cody Conservation District to evaluate potential funding sources and have also explored funding through Natural Resources Conservation Service for some components of this study.

5. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system?

Cody Canal ID and Lakeview ID both divert water from the South Fork Shoshone River and spill into tributaries that lead to the Lower Shoshone River and the Shoshone and Willwood Irrigation Districts. The Cody Canal ID would consider regional solutions that result in system improvements, reduced spillage to tributaries, increased water storage, and improved efficiencies to meet the water needs of its customers. Ultimately, reduced spillage will lead to reduced sediment supply and benefits to the Shoshone and Willwood Irrigation infrastructure.

6. Can the project be delayed or staged? Yes

A. Should it be? With the two WWDC funded watershed studies in the area and collaboration among several stakeholder groups (Cody CD, WGFD, NRCS, Trout Unlimited, and individual irrigation districts) there is great interest in creating system-wide solutions that reduce sediment and increase efficiency in water use. Several partners are willing to collaborate to find alternative funding sources to advance projects that meet these multiple goals, thus the timing to move forward on this project is very good and likely to provide substantial benefits to the project sponsor and the watershed as a whole. A delay is not recommended and may jeopardize the ability to capitalize on local and regional support and alternate funding sources.

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. Description of Direct Flow Supply

- (1) Direct Flow Diversion Right (CFS): 300 cfs
- (2) Direct Flow Source (Name of River, Stream, etc.): South fork Shoshone River
- (3) Type of Diversion (Headgate, Pump, etc.): Gravity headgate
- (4) Water Transmission System (Canal, Pipeline, etc.): Canals

B. Description of Stored Water Supply

- (1) Name(s) of Storage Facility (Reservoir): N/A
- (2) Location: N/A
- (3) Amount of Stored Water Right (Acre-Feet): N/A
- (4) Is any of the stored supply obtained from a federal facility? N/A
 - a. Percent of Total Supply from Federal Facility: N/A
 - b. Amount of Stored Supply from Federal Facility (Acre-Feet): N/A
 - c. Name(s) of Federal Facility: N/A

C. Description of Groundwater Supply

- (1) Number of Wells: N/A
- (2) Primary Supply Aquifer(s) or Formation(s): N/A
- (3) Total Average Production Yield of All Wells (GPM): N/A

D. Water Rights

- (1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights? Yes

E. System Capacity

- (1) Maximum Capacity of the Water Supply System (Acre-Feet per Day or CFS): 600 AF
- (2) Increased Capacity Needed (If Known) (Acre-Feet per Day or CFS): unknown

F. Water Usage

- (1) Estimate of Total Water Provided by the System Annually (Acre-Feet per Year): 60,000 AF
- (2) Average Day Demand (Acre-Feet per Day or CFS): 346 AF
- (3) Maximum Day Demand (Acre-Feet per Day or CFS): 600 AF

2. Existing Service Area and On-Farm Information

A. Service Area Information

- (1) How many total acres are in the district? 11,433
- (2) How many acres are assessed? 11,433
- (3) How many acres are irrigated? 11,433
- (4) What is the annual water delivery assessed (acre-feet per acre)? 5.25
- (5) How many individual land owners receive water? 2024

B. On-Farm Information

- (1) What is the normal irrigation season (e.g., May 1 – Sept. 30)? April 15 – Oct 15
- (2) What type(s) of on-farm irrigation water applications is used (e.g., center pivot, side roll, flood, etc.)?
Flood irrigation, side roll, center pivot

(3) Briefly describe the main crops and cropping patterns:

Sugar beets, malt barley, pasture and alfalfa

(4) Describe the water measuring devices currently in use:

Installing measuring weirs as farms and rangeland are subdivided with a Parshall flume

(5) Percentage of Farm Turnouts with Measuring Devices: 20

(6) Are water deliveries recorded? No

(7) Estimated System Water Losses (Percentage): 20

(8) What water conservation measures are employed by the Sponsor?

Water measuring devices and sprinkler only irrigation on new subdivisions

3. Financial Information

A. District Financing

(1) Is the assessment based on acres, acre-feet delivered, acre-feet of storage, or other (specify)?

Acres

(2) How is voting authority delegated to water users (e.g., shares, individuals, number of acres, etc.)?

One vote per acre of land assessed

(3) What is the per-unit amount of the current assessment? \$24; \$120 min for 5 acres or less

(4) Is there is a basic service charge or first acre assessment in addition to assessments? If so, specify amount: No

B. Financial Statement

(1) Revenues

a. Annual Revenues Generated from Assessments:	\$ 421,670.78
b. Annual Revenues from Other Sources:	\$ 6,712.99
c. Total Annual Revenues:	\$ 428,383.77

(2) Expenditures

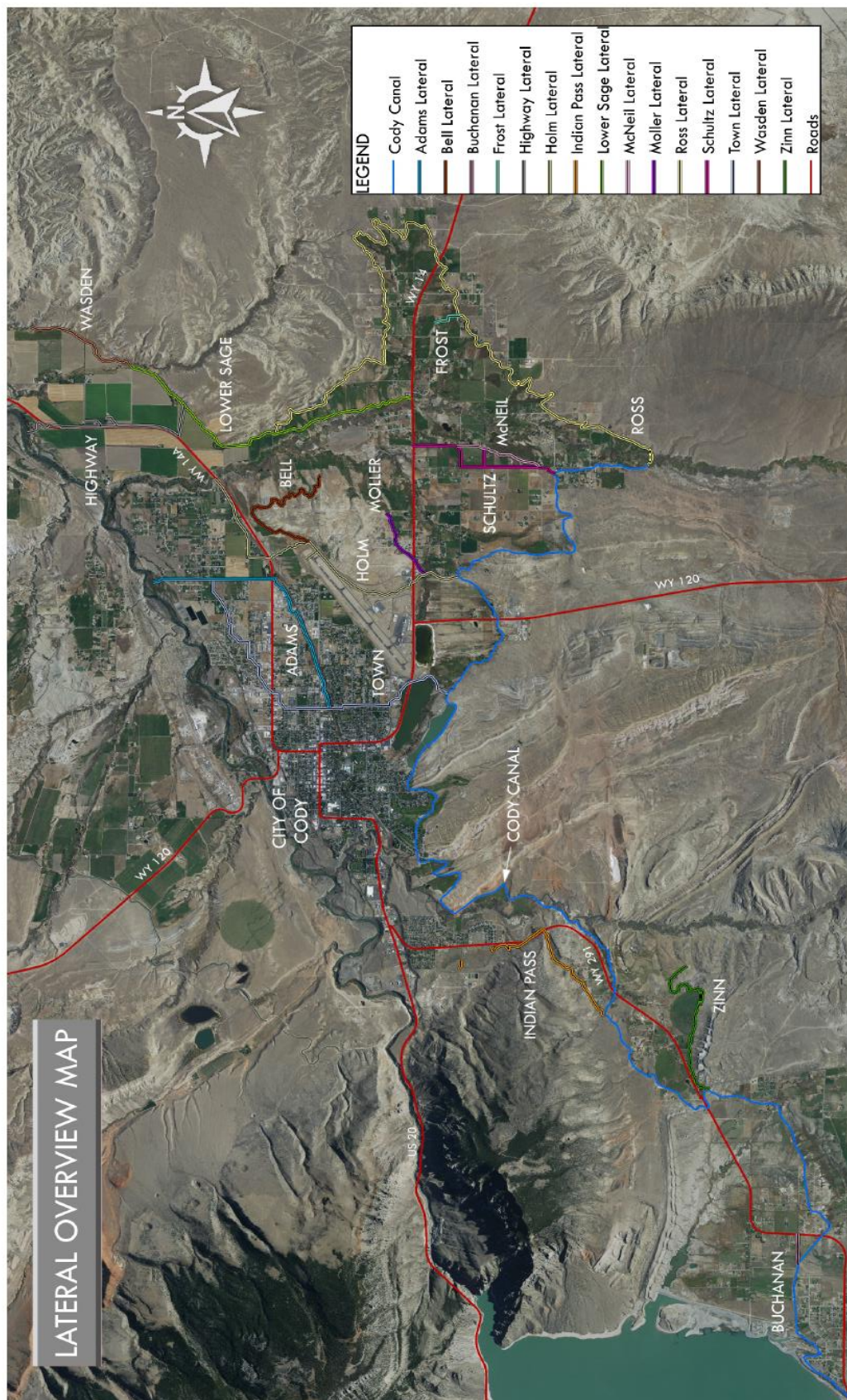
a. Annual Budget for Operation and Maintenance Expenses:	\$ 403,737.94
b. Annual Payments for Debt Retirement:	\$ 14,539.24
c. Annual Payments to a Repair and Replacement Fund:	\$
d. Annual Payments to an Emergency Fund:	\$
e. Annual Payments for Other Purposes:	\$
f. Total Annual Payments:	\$ 418,277.18

(3) Other

a. Balance in Repair and Replacement Fund:	\$ 458,180.42
b. Balance in Emergency Fund:	\$
c. Explanation (If Needed):	

(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.? Yes

PROJECT AREA MAP



PHOTOS



Photos 1-3. Replacement of some aging infrastructure can provide opportunities to improve system efficiency and reduce sediment contributions back to the river. Increased automation could also help with these efforts.

RESOLUTION

RESOLUTION

The Secretary of the Board of Commissioners of the Cody Canal Irrigation District, does hereby certify that the following resolution is a true and correct resolution that was duly adopted by the Board of Commissioners of the Cody Canal Irrigation District at a regular monthly meeting held on February 10, 2022:

RESOLVED, that the Cody Canal Irrigation District, by and through its Board of Commissioners, approves the submission of an application to the Wyoming Water Development Commission for a Level II Feasibility Study. The Application to be submitted by March 1, 2022 will be for a grant to assess water efficiency and upgrade infrastructure.

Signed this 28 day of February, 2022.

CODY CANAL IRRIGATION DISTRICT

By Mary Helen Reed
MARY HELEN REED, Secretary

STATE OF WYOMING)
) ss.
COUNTY OF PARK)

The foregoing instrument was acknowledged before me this 28 day of February, 2022, by Mary Helen Reed, Secretary of CODY CANAL IRRIGATION DISTRICT, on behalf of the District.

Diana Johnston
Notary Public

My commission expires: 5/2/2023



Wyoming Water Development Commission
Attn: Julie Gondzar
Cheyenne Wyoming

April 7, 2022

Highland Irrigation District
Pinedale Wyoming

Julie,

It is with regret that I am informing you of the Highland irrigation District's intention to withdraw our application for a Level II Project feasibility study. With the completion of our Level I study due this summer, the upcoming irrigation season, a new ditch rider to train and two new commissioners being elected this winter, the HID commissioners have decided not to add anything new to our agenda. We hope to reapply in 2023.

Sincerely,

A handwritten signature in blue ink, appearing to read 'John Walter', is written over the printed name.

John Walter, HID President

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

AGRICULTURAL WATER PROJECTS

Project Name: Lakeview Irrigation District Rehabilitation

Program: Rehabilitation

Project Type: Agricultural Irrigation System

County: Park

Sponsor: Lakeview Irrigation District

WWDO Recommendation: Level II

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The sponsor is eligible for a Level II Rehabilitation Study on the irrigation system. The study is recommended to identify and develop design options for projects that reduce sediment, improve system efficiency, and replace critical infrastructure that has exceeded design life expectancy.

Project Manager: Mike Robertson

I. PROJECT DESCRIPTION

The Lakeview Irrigation District has requested a Level II feasibility study to improve efficiency with a primary goal of eliminating late season shortages. Previous studies have noted high seepage losses in sections of the main canal and the proposed study would focus on those areas and evaluate options including piping these sections. Other potential design options that the district is interested in investigating include on or off canal storage, system automation, or water exchange with the Cody Canal Irrigation District.

The district is interested in design options that would help reduce sediment contributions back into the Shoshone River, a system with excess sediments that contributes to infrastructure issues to several entities along its course and affects fish populations in the river. A recent WWDC funded watershed study in the Lower Shoshone River identified several mitigation options for downstream irrigation districts to handle high sediment loads. Another WWDC funded watershed study is starting this year in the Upper Shoshone River Watershed with one goal being to evaluate options to convey water more efficiently and reduce sediments. Any efforts to reduce sediment contributions benefits all stakeholders in the Shoshone River watershed. Designs that help reduce spillage into tributary streams could both improve system efficiency and reduce erosion in those drainages; the district would also like to consider design options that would isolate stormwater from the canal.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Lakeview Irrigation Master Plan	II	57	2012	II	\$ 250,000	2014
Lakeview Irrigation District Rehabilitation 2014	III	100	2014	II	\$ 154,770	2019
Lakeview Irrigation District Rehabilitation 2016	III	55	2016	II	\$ 194,300	2021
Lakeview Carter Creek Siphon/Spillway 2019	III	55	2019	II	\$ 351,000	2024

2. Describe the location of the project:

The Lakeview Irrigation District diverts direct flows from the South Fork Shoshone River and includes canals and laterals that supply 10,200 irrigated acres south and west of Cody, Wyoming.

3. Summarize the request:

The Sponsor is requesting a rehabilitation study to examine several options that should improve efficient use of water and reduce the sediment load that the system contributes back into the Shoshone River. Efficiency projects could eliminate late season shortages and delivery challenges. The proposed study would more accurately define areas of high seepage in the main canal and consider alternatives to reduce it. This study would also expand on ideas discussed in previous studies, including on or off canal storage, increased system automation, an exchange with Cody Canal Irrigation District, and any options that may reduce the need to spill into tributary streams.

4. Summarize the reasons for the request:

The sponsor would like to improve water efficiency in its main canal. This system relies on direct flows upstream of Buffalo Bill Reservoir and they are subject to shortages in low water years. There are also concerns with high sediments throughout the Shoshone River watershed and this study would provide opportunity to contribute to regional efforts to reduce sediment contributions wherever it is feasible.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes

A. If not, is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

N/A

2. Project Priority According to WWDO Criteria: Acct II - Priority 7: LII Feasibility Studies

3. Will the project serve at least 1,000 water righted acres? Yes

A. Number of Acres: 10,200

4. Is the sponsor eligible for funding from other state or federal programs? Yes

A. If so, what are they? The irrigation district has coordinated with Wyoming Game and Fish and the Cody Conservation District to evaluate potential funding sources and have also explored funding through Natural Resources Conservation Service for some components of this study.

5. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system?

Lakeview ID and Cody Canal ID both divert water from the South Fork Shoshone River and spill into tributaries that lead to the Lower Shoshone River and the Shoshone and Willwood Irrigation Districts. The Lakeview ID would consider regional solutions that result in system improvements, reduced spillage to tributaries, increased water storage, and improved efficiencies to meet the water needs of its customers. Ultimately, reduced spillage will lead to reduced sediment supply and benefits to the Shoshone and Willwood Irrigation infrastructure.

6. Can the project be delayed or staged? Yes

A. Should it be? With the two WWDC funded watershed studies in the area and collaboration among several stakeholder groups (Cody CD, WGFD, NRCS, Trout Unlimited, and individual irrigation districts) there is great interest in creating system-wide solutions that reduce sediment and increase efficiency in water use. Several partners are willing to collaborate to find alternative funding sources to advance projects that meet these multiple goals, thus the timing to move forward on this project is very good and likely to provide substantial benefits to the project sponsor and the watershed as a whole. A delay is not recommended and may jeopardize the ability to capitalize on local and regional support and alternate funding sources.

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. Description of Direct Flow Supply

- (1) Direct Flow Diversion Right (CFS): 270 cfs
- (2) Direct Flow Source (Name of River, Stream, etc.): South fork Shoshone River
- (3) Type of Diversion (Headgate, Pump, etc.): Gravity headgate
- (4) Water Transmission System (Canal, Pipeline, etc.): Canals

B. Description of Stored Water Supply

- (1) Name(s) of Storage Facility (Reservoir): N/A
- (2) Location: N/A
- (3) Amount of Stored Water Right (Acre-Feet): N/A
- (4) Is any of the stored supply obtained from a federal facility? N/A
 - a. Percent of Total Supply from Federal Facility: N/A
 - b. Amount of Stored Supply from Federal Facility (Acre-Feet): N/A
 - c. Name(s) of Federal Facility: N/A

C. Description of Groundwater Supply

- (1) Number of Wells: N/A
- (2) Primary Supply Aquifer(s) or Formation(s): N/A
- (3) Total Average Production Yield of All Wells (GPM): N/A

D. Water Rights

- (1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights? Yes

E. System Capacity

- (1) Maximum Capacity of the Water Supply System (Acre-Feet per Day or CFS): 240 AF
- (2) Increased Capacity Needed (If Known) (Acre-Feet per Day or CFS): unknown

F. Water Usage

- (1) Estimate of Total Water Provided by the System Annually (Acre-Feet per Year): 25,960 AF
- (2) Average Day Demand (Acre-Feet per Day or CFS): 220 AF
- (3) Maximum Day Demand (Acre-Feet per Day or CFS): 240 AF

2. Existing Service Area and On-Farm Information

A. Service Area Information

- (1) How many total acres are in the district? 10,200
- (2) How many acres are assessed? 10,200
- (3) How many acres are irrigated? 10,200
- (4) What is the annual water delivery assessed (acre-feet per acre)? N/A
- (5) How many individual land owners receive water? 512

B. On-Farm Information

- (1) What is the normal irrigation season (e.g., May 1 – Sept. 30)? April 15 – Oct 15
- (2) What type(s) of on-farm irrigation water applications is used (e.g., center pivot, side roll, flood, etc.)?

Center pivot, gated pipe, flood

(3) Briefly describe the main crops and cropping patterns:

Hay, grain, pasture

(4) Describe the water measuring devices currently in use:

Weirs, pressure flumes

(5) Percentage of Farm Turnouts with Measuring Devices: 70-80%

(6) Are water deliveries recorded? No

(7) Estimated System Water Losses (Percentage): 20

(8) What water conservation measures are employed by the Sponsor?

Water measuring devices installed new subdivisions; sprinkler only irrigation on some new subdivisions.

3. Financial Information

A. District Financing

(1) Is the assessment based on acres, acre-feet delivered, acre-feet of storage, or other (specify)?

Acres

(2) How is voting authority delegated to water users (e.g., shares, individuals, number of acres, etc.)?

Voting is by acre, pursuant to Wyoming statutes

(3) What is the per-unit amount of the current assessment? \$19.50; \$97.50 <5 acres; \$195 5-10 acres

(4) Is there is a basic service charge or first acre assessment in addition to assessments? If so, specify amount: \$50

B. Financial Statement

(1) Revenues

a. Annual Revenues Generated from Assessments:	\$ 244,670.00
b. Annual Revenues from Other Sources:	\$ 13,036.53
c. Total Annual Revenues:	\$ 257,706.53

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$ 175,754.99
b. Annual Payments for Debt Retirement:	\$
c. Annual Payments to a Repair and Replacement Fund:	\$
d. Annual Payments to an Emergency Fund:	\$
e. Annual Payments for Other Purposes:	\$
f. Total Annual Payments:	\$ 175,754.99

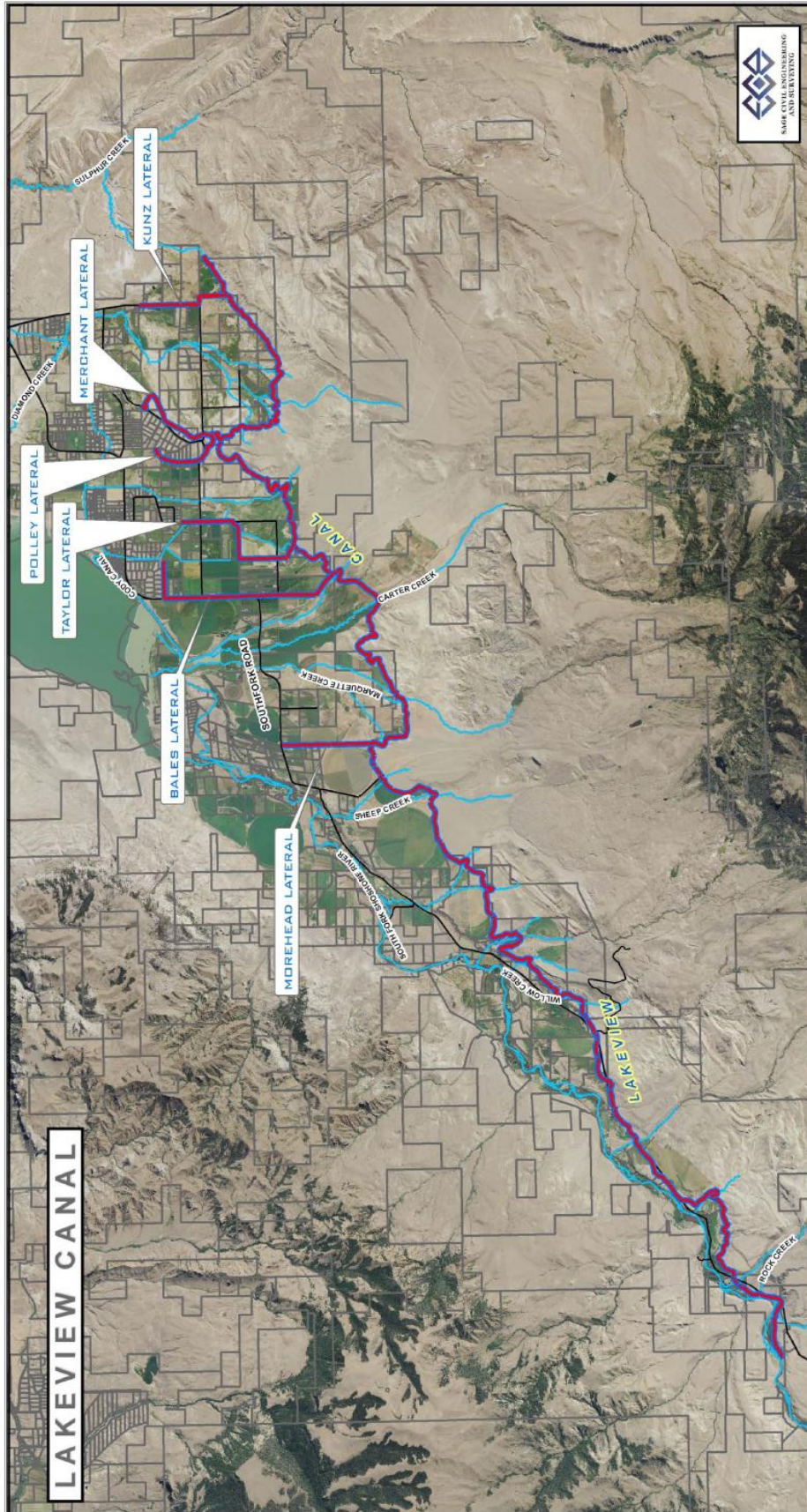
(3) Other

a. Balance in Repair and Replacement Fund:	\$ 409,164.98
b. Balance in Emergency Fund:	\$
c. Explanation (If Needed):	

(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.? Yes

a. If not, how is the difference subsidized?

PROJECT AREA MAP



PHOTOS



Photo 1. Excess sediments are common in this system.



Photo 2. Evidence of substantial seepage along the main canal.



Photo 3. Excess sediments around an outlet pipe.



Photo 4. Sediment enters the main canal and laterals via bank erosion.

RESOLUTION

RESOLUTION

The Secretary of the Board of Commissioners of the Lakeview Irrigation District, does hereby certify that the following resolution is a true and correct resolution that was duly adopted by the Board of Commissioners of the Lakeview Irrigation District at a regular monthly meeting held on February 9, 2022:

RESOLVED, that the Lakeview Irrigation District, by and through its Board of Commissioners, approves the submission of an application to the Wyoming Water Development Commission for a Level II Feasibility Study. The Application to be submitted by March 1, 2022 will be for a grant to assess water efficiency and upgrade infrastructure.

Signed this 28 day of February, 2022.

LAKEVIEW IRRIGATION DISTRICT

By Mary Helen Reed
MARY HELEN REED, Secretary

STATE OF WYOMING)
) ss.
COUNTY OF PARK)

The foregoing instrument was acknowledged before me this 28 day of February, 2022, by Mary Helen Reed, Secretary of LAKEVIEW IRRIGATION DISTRICT, on behalf of the District.

Diana Johnston
Notary Public

My commission expires: 5/2/2023



2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

MUNICIPAL/JOINT POWERS WATER BOARD WATER SYSTEMS

Project Name: Shoshoni Groundwater Supply & Transmission

Program: Rehabilitation

Project Type: Municipal Water System

County: Fremont

Sponsor: Town of Shoshoni

WWDO Recommendation: Level II

Proposed Budget: \$TBD

Note: Sponsor reached out to the WWDO on March 2nd (one day after the application deadline) indicating that their application would be late due to extenuating circumstances. Application materials were received by the office on March 9th. The sponsor is willing to answer any questions that the Commission might have with regards to the late submission.

Basis for the Funding Recommendation:

The Town of Shoshoni is an eligible entity for Wyoming Water Development Commission funding. Recommendation #1 from the August 2021 Shoshoni Water Master Plan Level I Study was to determine the exact cause, and finding the correct solution for, the continued transmission line breaks between Well No. 6 and the water storage tank. It was recommended that the Town pursue a 2023 Level II feasibility study to investigate the situation and determine possible solution(s) to the problem.

Project Manager: Keith E. Clarey, P.G.

I. PROJECT DESCRIPTION

The Town of Shoshoni has requested a Level II feasibility study to investigate the repeated surging and breaking of the transmission line from the wells to town and to prepare solution(s) to the problem.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Shoshoni Water Supply	II	123	1990	II	\$ 75,000	1993
Shoshoni Water Supply	III	231	1991	II	\$ 740,000	1996
Shoshoni Water Master Plan	I	150	2020	I	\$ 157,000	2023

2. Describe the location of the project:

The Town of Shoshoni is located in Fremont County and lies within the Wind River Basin. The Town has a population of 515 people and they are served through 370 taps within the corporate limits. The Town is supplied with Wind River Formation groundwater from four wells located west of the Town and the wells have a total average yield of 785 gpm. The supplied groundwater is treated by chlorination and stored in an above-ground welded steel tank with a capacity of 500,000 gallons also located west of the Town. The 10-inch PVC transmission line conveys water from the wells to the tank and then to the town's distribution system.

3. Summarize the request:

During the recently completed August 2021 Shoshoni Level I Water Master plan, it was determined that the natural groundwater gases (methane, carbon dioxide, etc.) produced by Well No. 6 are likely contributing to the spiral breaking of the transmission line between the wells and the tank. It was decided that further study of the surging could benefit the town's ability to create a better design for relieving the pressure as well as assuring that any surges

do not break the transmission line. [Recommendation #1 from the Level I master plan: Determining the exact cause, and finding the correct solution for, the continued transmission line breaks between Well No. 6 and the water storage tank.]

4. Summarize the reasons for the request:

A proposed 2023 Level II feasibility study is needed to investigate the cause(s) of the transmission line repeatedly surging and breaking between the wells and the tank. This study would also prepare and recommend mitigation solutions to prevent the problem with system improvements.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes
2. Project Priority According to WWDO Criteria: Acct II - Priority 7: LII Feasibility Studies
3. Will the project serve at least 15 water taps? Yes
 - A. Number of Taps: 370
4. Is the sponsor eligible for funding from other state or federal programs? Yes
 - A. If so, what are they (RUS, SRF, other)? RUS, SRF, others
5. Is the Sponsor under any federal (EPA) mandates to improve its system? No
6. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system? The Town of Shoshoni is not part of a regionalized water supply system. Geographic features preclude regionalization for Shoshoni.
7. What is monthly water bill for 5,000 gallons? \$31.00 (10,000 gallons minimum)
 - A. 20,000 Gallons? \$61.00
8. Can the project be delayed or staged? No
 - A. Should it be? No

III. PERTINENT INFORMATION

1. Existing Water Supply System

- A. EPA Public Water System (PWS) Identification Number: WY5600053C
- B. Groundwater
 - (1) Number of Wells: 4
 - (2) Primary Supply Aquifer(s) or Formation(s): Wind River Formation (sandstone beds)
 - (3) Total Average Production Yield of All Wells (GPM): 785
- C. Surface Water
 - (1) Source Name(s): N/A
 - (2) Type of Diversion(s) (Headgate, Infiltration Gallery, Pumps, Etc.): N/A
 - (3) Total Average Diversion Yield (CFS or GPM): N/A
- D. Springs
 - (1) Name of Spring(s): N/A
 - (2) Total Average Production Yield of All Springs (CFS or GPM): N/A
- E. Water Rights
 - (1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights? Yes

F. Transmission Pipeline

- (1) Maximum Capacity of the Transmission Pipeline(s) (Gallons per Day): 881,280 gpd (at 5 fps flow)
- (2) Increased Capacity Needed (If Known) (Gallons per Day): Unknown
- (3) Approximate Distance from Source(s) to Distribution System: 5.4 miles
- (4) Transmission Pipe Diameter(s): 10-inch (1993), 8-inch (1978), 6-inch (1954)
- (5) Type of Transmission Pipe Material(s): PVC, cast iron, ductile iron
- (6) Age of Transmission Pipeline(s): 27 years
- (7) Condition of Transmission Pipeline(s): 10" Medium, 8" Poor, 6" Poor
- (8) Does the applicant possess clear title to transmission corridor easements? Yes

G. Water Storage

- (1) Raw (Volume and Tank Description): N/A
- (2) Treated (Volume and Tank Description): 500,000-gallon above-ground welded steel

H. Treatment

- (1) Specify Water Treatment (None, Chlorination, Filtration, Etc.): Chlorine

2. Existing Water Distribution System

- A. Is the water use metered? Yes
- B. Are the billings based on meter readings? Yes
- C. Identify unmetered usage (e.g., irrigation of parks, cemeteries, fire protection, etc.): Parks, city facilities, fire protection
- D. Average Day Demand Water Usage (Gallons per Capita per Day): 168
- E. Maximum Day Demand Water Usage (Gallons per Capita per Day): 583 (300,000 gpd/515 people)
- F. Peak Hourly Demand Water Usage (Gallons per Capita per Day): 385
- G. Distribution Pipe Diameter(s): 6-inch
- H. Type of Distribution Pipe Material(s): PVC
- I. Age of Distribution Pipeline(s): 31 years
- J. Condition of Distribution Pipeline(s): Good
- K. Estimated System Water Losses (Percentage): Less than 15%
- L. Describe any fire flow protection that the system provides: The system has fire hydrants places at regular intervals on the distribution system. The fire hydrant system was modeled and the supply is adequate.
- M. What water conservation measures are employed? None
- N. Is there an independent raw water irrigation system? No
 - (1) Raw Water System Capacity (Gallons per Day): N/A
 - (2) Average Annual Raw Water Usage (Gallons per Year): N/A

3. Demographic Information and Existing Water Service Area

- A. Population (2010 Census): 649
- B. Current Population Estimate: 515 (2022)
- C. Does the applicant have a comprehensive planning boundary? Yes
 - (1) If so, what is the estimated additional population that may be served in the future? 100
- D. How many taps are served within the corporate limits/JPB service area? 370
- E. How many taps are served outside of the corporate limits/JPB service area? None
- F. Identify names of other water system served: None
- G. Identify any existing planning reports (municipal or county) that address growth management in the project area. Provide titles and how copies of the reports could be obtained: None

4. Financial Information

A. Rates

(1) Tap Fee(s) – Residential: \$750

(2) Tap Fee(s) – Commercial: \$750

(3) Average Residential Monthly Water Bill and Corresponding Gallons Used: Unknown

(4) Water Rates (Provide rates for all tiers and categories of use. Attach additional pages as needed.):

\$31.00/10,000 gallons, \$3.00 for each 1,000 gallons above the base rate.

(5) Identify any local conditions that affect water rates (e.g., flow-through for frost prevention, etc.):

Flow-through for frost prevention from November to March each year.

B. Financial Statement (of Water Utility)

(1) Revenues

a. Annual Revenues Generated from Water Sales:	\$	178,000
b. Annual Revenues from Tap Fees:	\$	3,150
c. Annual Revenues from Other Sources:	\$	0
d. Total Annual Revenues:	\$	181,150

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$	159,199
b. Annual Payments for Debt Retirement:	\$	9,299
c. Annual Payments to a Repair and Replacement Fund:	\$	10,000
d. Annual Payments to an Emergency Fund:	\$	0
e. Annual Payments for Other Purposes:	\$	0
f. Total Annual Payments:	\$	178,498

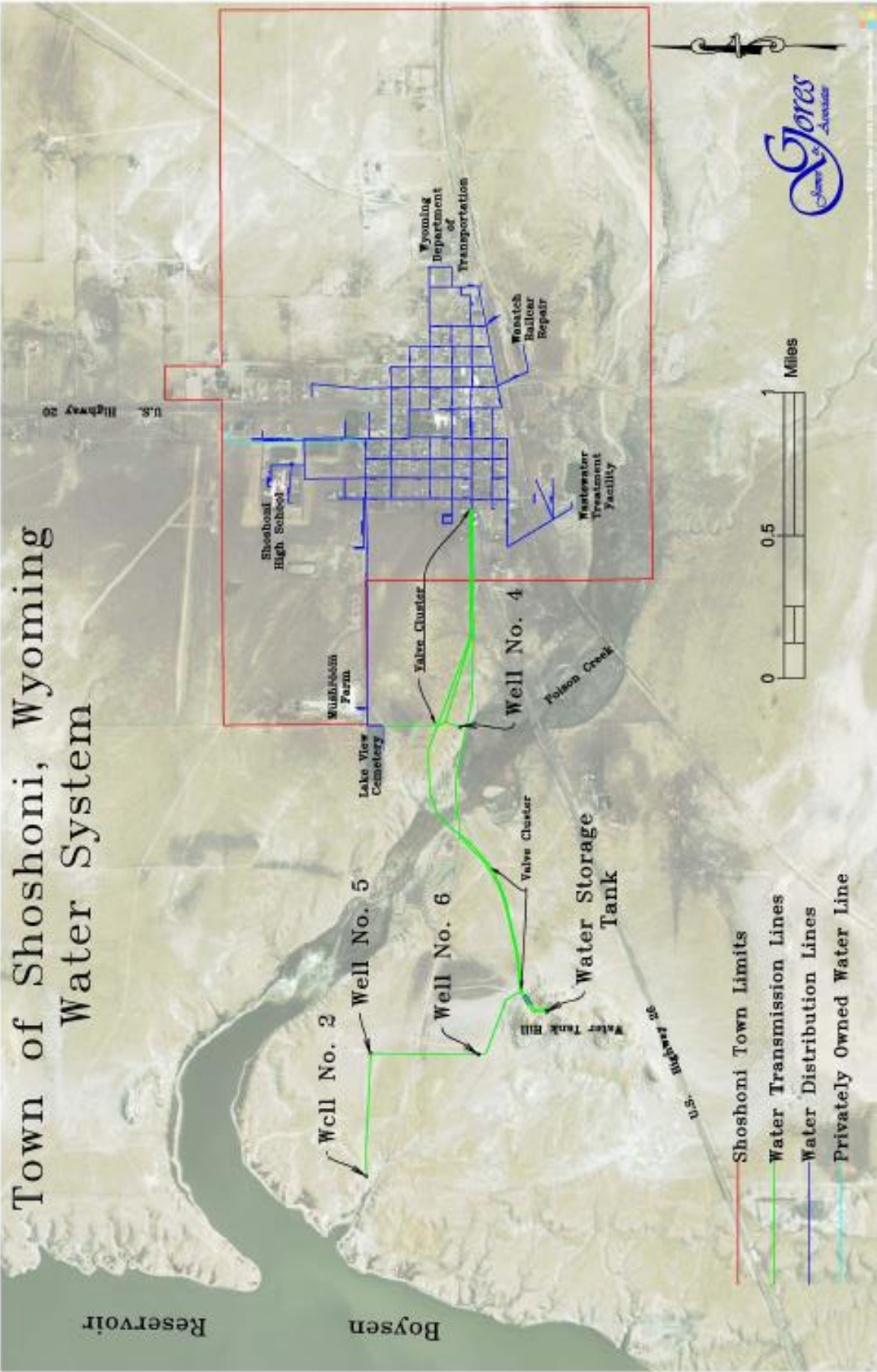
(3) Other

a. Balance in Repair and Replacement Fund:	\$	3,512
b. Balance in Emergency Fund:	\$	41,807
c. Annual Cost of Water Quality Testing:	\$	5,000

(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.? Yes

a. If not, how is the difference subsidized? N/A

PROJECT AREA MAP



PHOTOS



Shoshoni Town Hall, 102 West 2 Street, Shoshoni, WY 82649

RESOLUTION

RESOLUTION NO. 22-002

A RESOLUTION TO REQUEST FUNDING FROM THE WYOMING WATER DEVELOPMENT COMMISSION (WWDC) FOR LEVEL II FUNDING FOR THE TOWN OF SHOSHONI, WYOMING

WHEREAS, the Shoshoni Town Council is the governing body, duly authorized to conduct business on behalf of the Town; and

WHEREAS, the Town of Shoshoni oversees the water system for the health, safety and benefit of all residents on the system; and

WHEREAS, The Town of Shoshoni has completed a comprehensive system master plan; and

WHEREAS, the WYOMING WATER DEVELOPMENT COMMISSION (WWDC) requires that certain criteria be met, as described in the WWDC's rules and regulations governing the program, and to the best of our knowledge this application meets those criteria;

NOW, THEREFORE, BE IT RESOLVED that the Town of Shoshoni by this resolution authorizes and approves the request submitted to the Wyoming Water Development Commission for the Shoshoni Level II project and make request for necessary funding.

BE IT FURTHER RESOLVED that the Shoshoni Town Council hereby authorizes and assumes the responsibility to affect this action.

BE IT FINALLY RESOLVED, that the Mayor of the Town of Shoshoni is directed and authorized to execute all documents necessary to implement this resolution.

CERTIFICATION

I, THE UNDERSIGNED, of the Town of Shoshoni hereby certify that in a meeting of the Shoshoni Town Council, which is composed of five (5) members, of whom 5 () members of the Shoshoni Town Council, constituting a quorum, were present at a meeting duly and specially called, noticed, convened, and held this 22ND day of February, 2022; that the foregoing resolution was adopted by the affirmative vote of 5 () members of the Shoshoni Town Council, and that the said resolution has not been rescinded or amended in any way.

Done at Shoshoni, Wyoming this 22nd day of February, 2022.


Joel Highsmith, Mayor

ATTEST:


Christopher Koonja, Clerk/Treasurer



2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

AGRICULTURAL WATER PROJECTS

Project Name: Upper Sunshine Outlet Works Rehab

Program: Rehabilitation

Project Type: Irrigation District

County: Park

Sponsor: Greybull Valley Irrigation District

WWDO Recommendation: Level II

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

The Greybull Valley Irrigation District, an eligible sponsor, is requesting a Level II Feasibility study to evaluate rehabilitation alternatives for the outlet works on Upper Sunshine Reservoir. The study would evaluate the current condition of the outlet works and make recommendations to enhance dam safety, reduce operating and maintenance costs, and modernize critical infrastructure that has exceeded design life expectancy.

Project Manager: Andrew Linch

I. PROJECT DESCRIPTION

The Greybull Valley Irrigation District (Sponsor) is requesting a Level II feasibility study to evaluate rehabilitation alternatives for the outlet works on Upper Sunshine Reservoir. Upper Sunshine is located on public and private land in the Upper Greybull River watershed on Sunshine Creek approx. 11 miles southwest of Meeteetse, WY. The dam was constructed between 1936 and 1939 and provides 52,987.5 acre-feet of late season irrigation water. The Sponsor also owns and operates Roach Gulch and Lower Sunshine reservoirs to provide additional water to district members.

The original outlet works for the dam is a 72" square guard gate on the upstream end of a 72" diameter steel pipe that extends through the embankment. The guard gate rolls on steel wheels inside a concrete control structure at the bottom of the reservoir and is controlled by the original 1930's steel cable and winch system. In previous attempts to operate this gate, the rapid buildup of silt has caused the gate to become stuck in the closed position. Because of this and concerns that the archaic winch system will not be able to re-open the gate, the Sponsor has not utilized this gate for at least the last 5 years and thus been unable to complete needed inspection and maintenance on the downstream components and valves.

The original downstream outlet control, employed a unique manifold system with five separate gate valves of differing sizes which theoretically provided the reservoir with the ability to release the various flows needed to meet irrigation demand. In the mid-1970's this complex outlet works system was mostly abandoned due to undesirable flow conditions and cavitation problems and replaced with a 36" Howell-Bunger valve which is currently being used to make irrigation releases. One of the original 1930's era gate valves is also still being utilized on the 36" pipe to shut off releases during the non-irrigation season.

Maintaining this critical infrastructure has become an increasingly difficult and expensive responsibility for the Sponsor, and thus they are interested in a study to evaluate options to rehabilitate or replace the aging outlet works components at this site. The study would also investigate dam safety, silt control, modernization, automation, permitting, and economics based on conceptual designs refined as part of the project.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Greybull Valley Dam & Reservoir Project	III	28	1994	I	\$ 3,000,000	
Greybull Valley Dam & Reservoir Project	III	59	1996	I	\$ 37,000,000	
Greybull Valley Dam & Reservoir Project	III	88	2002 2005	I	\$ -7,942,542	
GVID Hydroelectric	II	7	2002	I	\$ 60,000	
GVID Hydroelectric	III	121	2007	I	\$ 476,000*	
GVID Hydroelectric	III	14	2012	1	\$ -326,000**	
GVID Diversion Dam	II	85	2007	II	\$ 100,000	
GVID Upper Sunshine Diversion Rehab	II	33	2008	II	\$ 100,000	
GVID Upper Sunshine Diversion Rehab	III, Ph I	38	2009	II	\$ \$300,000	
GVID Upper Sunshine Diversion Rehab	III Ph II	63	2011	II	\$ 3,600,000 67% grant 33% loan	
GVID GIS Rehab	II	33	2008	II	\$ 150,000	
Greybull Valley Hydropower	II	57	2012	I	\$ 85,000	

*100% loan for design and permitting only

**This reduced the 2007 appropriation to \$150,000

2. Describe the location of the project:

The project is at Upper Sunshine Reservoir, 11 miles southwest of Meeteetse, WY on private land.

3. Summarize the request:

The request is for a Level II study to investigate rehabilitation or replacement options for the outlet works at Upper Sunshine reservoir.

4. Summarize the reasons for the request:

The outlet works at Upper Sunshine reservoir are past their designed service life and are nearing 100 years old. The Sponsor has requested this Level II study to explore rehabilitation options before the outlet works fail, to ensure continued dam safety and to reduce operation and maintenance costs with automation.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes

A. If not, is the recommendation for a Level I study or Level I or II study for a dam and reservoir project?

N/A

2. Project Priority According to WWDO Criteria: Acct II - Priority 7: LII Feasibility Studies
(Use Attachment III of the operating criteria.)

3. Will the project serve at least 1,000 water righted acres? Yes

A. Number of Acres: 64,000

4. Is the sponsor eligible for funding from other state or federal programs? No

A. If so, what are they? N/A

5. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system?

N/A

6. Can the project be delayed or staged? Yes

A. Should it be? No

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. Description of Direct Flow Supply

(1) Direct Flow Diversion Right (CFS): 2,450

(2) Direct Flow Source (Name of River, Stream, etc.): Greybull River and Wood River

(3) Type of Diversion (Headgate, Pump, etc.): Gravity Headgate

(4) Water Transmission System (Canal, Pipeline, etc.): Canal

B. Description of Stored Water Supply

(1) Name(s) of Storage Facility (Reservoir): Upper Sunshine

(2) Location: Park County on the Wood River

(3) Amount of Stored Water Right (Acre-Feet): 142,629

(4) Is any of the stored supply obtained from a federal facility? No

a. Percent of Total Supply from Federal Facility: N/A

b. Amount of Stored Supply from Federal Facility (Acre-Feet): N/A

c. Name(s) of Federal Facility: N/A

C. Description of Groundwater Supply

(1) Number of Wells: N/A

(2) Primary Supply Aquifer(s) or Formation(s): N/A

(3) Total Average Production Yield of All Wells (GPM): N/A

D. Water Rights

(1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights?

Yes

E. System Capacity

(1) Maximum Capacity of the Water Supply System (Acre-Feet per Day or CFS): 1,600 cfs

(2) Increased Capacity Needed (If Known) (Acre-Feet per Day or CFS): N/A

F. Water Usage

(1) Estimate of Total Water Provided by the System Annually (Acre-Feet per Year): 133,000

(2) Average Day Demand (Acre-Feet per Day or CFS): 400 Acre-Feet

(3) Maximum Day Demand (Acre-Feet per Day or CFS): 800 Acre-Feet

2. Existing Service Area and On-Farm Information

A. Service Area Information

- (1) How many total acres are in the district? 80,000
- (2) How many acres are assessed? 64,000
- (3) How many acres are irrigated? 64,000
- (4) What is the annual water delivery assessed (acre-feet per acre)? \$4.08
- (5) How many individual land owners receive water? 470

B. On-Farm Information

- (1) What is the normal irrigation season (e.g., May 1 – Sept. 30)? April 1st to Oct 1st
- (2) What type(s) of on-farm irrigation water applications is used (e.g., center pivot, side roll, flood, etc.)?
Flood and Center Pivot
- (3) Briefly describe the main crops and cropping patterns:
Beets, Beans, Barley, Corn, & Hay
- (4) Describe the water measuring devices currently in use:
Parshall Flumes with level transducers transmitted to District SCADA
- (5) Percentage of Farm Turnouts with Measuring Devices: N/A
- (6) Are water deliveries recorded? Yes. Daily
- (7) Estimated System Water Losses (Percentage): 5-10%
- (8) What water conservation measures are employed by the Sponsor?
Use of Center Pivots and automation to track flow, water levels and deliveries

3. Financial Information

A. District Financing

- (1) Is the assessment based on acres, acre-feet delivered, acre-feet of storage, or other (specify)?
Acre-Feet of storage
- (2) How is voting authority delegated to water users (e.g., shares, individuals, number of acres, etc.)?
One vote per Acre-Feet of water owned
- (3) What is the per-unit amount of the current assessment? \$4.08
- (4) Is there is a basic service charge or first acre assessment in addition to assessments? If so, specify amount:
No

B. Financial Statement

(1) Revenues

a. Annual Revenues Generated from Assessments:	\$	840,000
b. Annual Revenues from Other Sources:	\$	0
c. Total Annual Revenues:	\$	840,000

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$	390,000
b. Annual Payments for Debt Retirement:	\$	450,000
c. Annual Payments to a Repair and Replacement Fund:	\$	0
d. Annual Payments to an Emergency Fund:	\$	0

e. Annual Payments for Other Purposes:	\$	0
f. Total Annual Payments:	\$	840,000

(3) Other

a. Balance in Repair and Replacement Fund:	\$	0
b. Balance in Emergency Fund:	\$	0
c. Explanation (If Needed):		

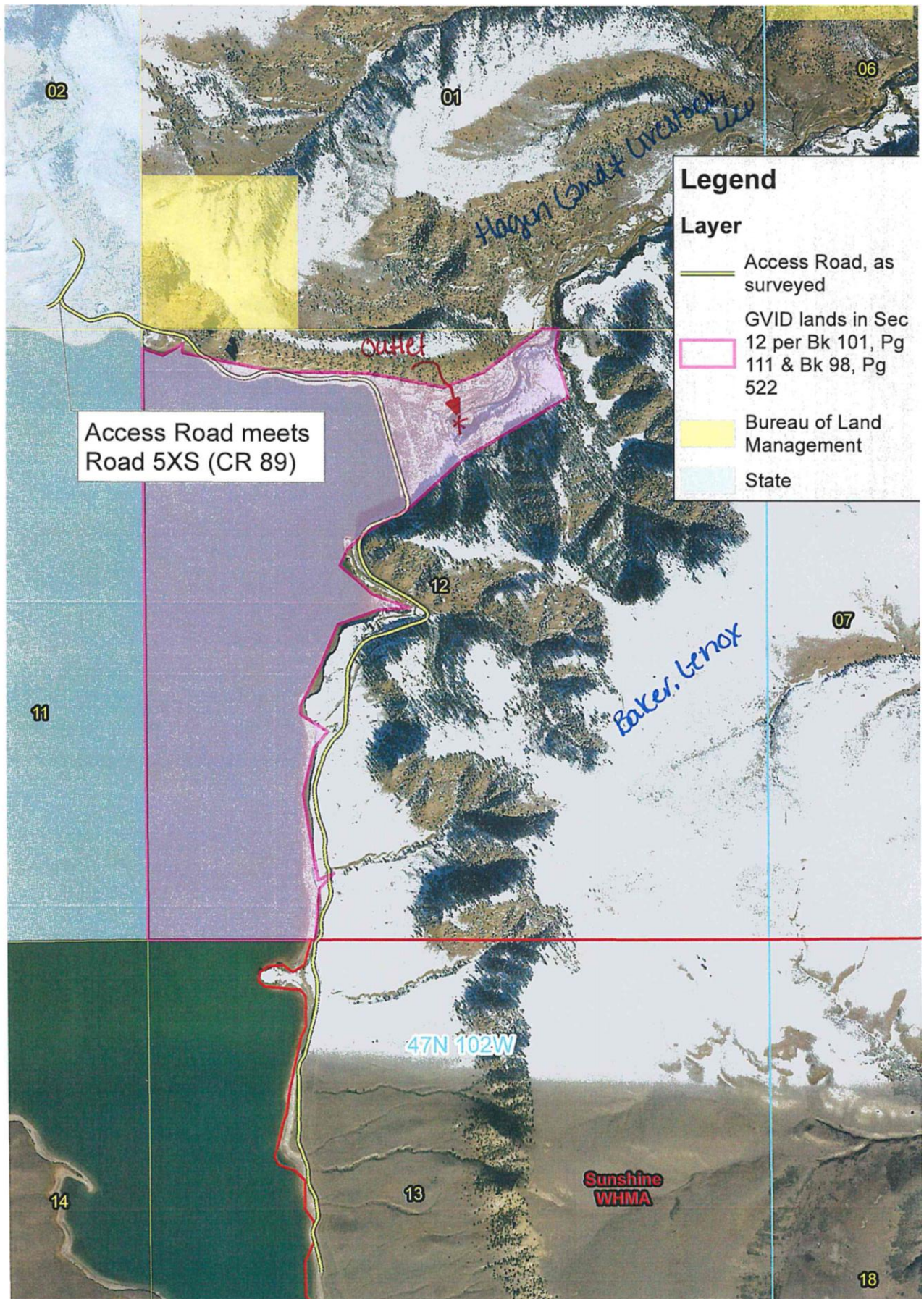
(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.?

Yes

a. If not, how is the difference subsidized?

N/A

Upper Sunshine Reservoir, Meeteetse, WY







Greybull Valley Irrigation District

Resolution 22-1

BE IT RESOLVED by the Board of Commissioners of the Greybull Valley Irrigation District, that Greybull Valley Irrigation District seeks funding for Level II Study from the Wyoming Water Development Commission for the study of Upper Sunshine Outlet Works Rehab.

DATED this 17th day of February, 2022.

A handwritten signature in blue ink, appearing to read "William Schlenker", is written over a horizontal line.

William Schlenker, Chairmen

This resolution was adopted at a lawfully called meeting of the Greybull Valley Irrigation District Commissioners, at which a quorum was present. The resolution was approved by a majority of the members of the Greybull Valley Irrigation District Commissioners.

DATED this 17th day of February, 2022.

A handwritten signature in black ink, appearing to read "Darrell Horton", is written over a horizontal line.

Darrell Horton, Secretary/Treasurer

State of Wyoming

County of Big Horn

This Resolution 22-01 signed and sworn to (or affirmed) before me on
Title of document being signed & sworn eg. affidavit

2/17/2022 by William Schenker & Darrell Horton
Date Name(s) or Person(s) Making Statement



Melissa Leonhardt
Signature of Notarial Officer
notary public
Title (e.g. Notary Public) OR Rank (Rank if officer in active military)

My commission expires: April 11, 2024

2023 WATER DEVELOPMENT PROGRAM RECOMMENDATION

AGRICULTURAL WATER PROJECTS

Project Name: Willwood ID Rehabilitation

Program: Rehabilitation

Project Type: Agricultural Irrigation Supply

County: Park & Big Horn

Sponsor: Willwood Irrigation District

WWDO Recommendation: Level II

Proposed Budget: \$TBD

Basis for the Funding Recommendation:

In 2015, a Level I study was completed for the Willwood Irrigation District. Additionally, the Willwood Dam was evaluated in a separate 2009 study. A recommended level II study will build upon the two studies evaluating the district's infrastructure and the Willwood Dam for rehabilitation needs, sediment issues, and consider alternatives for potential replacement of the Dam.

Project Manager: Chace A. Tavelli

I. PROJECT DESCRIPTION

The Willwood Irrigation District (WID) struggles to deliver water to their users due to the age and configuration of the Willwood dam and canal system. Over the last 5 years considerable coordination with partners have identified operation and system improvement opportunities that need further development. The projects include comparison of continued operation of, and sediment mobilization at, Willwood Dam; rehabilitation needs of the dam; and the feasibility of an alternate diversion replacing the dam. In addition, identification of efficiency projects on the District's canal, laterals, and infrastructure would eliminate mid-season peak delivery shortages and delivery challenges. Efficiency projects could include eliminating seepage in the canal system; rehabilitation/replacement of existing structures; modification to the canal's alignment in areas; and addressing sediment inputs into the canal system from tributaries that drain into the canal.

1. Existing and Prior Legislation:

<u>Project</u>	<u>Level</u>	<u>Chapter</u>	<u>Session</u>	<u>Account</u>	<u>Appropriation</u>	<u>Reversion Year</u>
Willwood Irrigation District Rehabilitation 2016	III	55	2016	II	\$ 533,000*	2021
Willwood Irrigation District Rehabilitation 2014	III	100	2014	II	\$ 164,000*	2019
Willwood Irrigation District Master Plan	I	74	2014	II	\$ 160,000	2016
Willwood Dam Rehabilitation	III	14	2012	II	\$ 1,410,000**	2017
Willwood Dam Rehabilitation	III	63	2011	II	\$ 210,000**	2016
Willwood Rehabilitation 2010	III	63	2011	II	\$ 754,000*	2015
Willwood Rehabilitation 2010	III	68	2010	II	\$ 746,000*	2015
Willwood Rehabilitation 2009	III	38	2009	II	\$ 284,000*	2014
Willwood Rehabilitation GIS, PII	II	33	2008	II	\$ 150,000	2010
Willwood Rehabilitation GIS, PI	II	85	2007	II	\$ 250,000	2008
Willwood ID Master Plan	I	75	2005	II	\$ 50,000	2006

* 100% grant for invoiced materials. The sponsor is responsible for all other project costs

**67% grant, 33% loan

2. Describe the location of the project:

Willwood Irrigation District lies south of the Shoshone River, south of Powell, WY.

3. Summarize the request:

The Willwood Irrigation District is requesting a Level II study to follow up on their 2015 Level I study and to have an updated evaluation of the Willwood Dam for rehabilitation needs, sediment issues, and potential replacement alternatives.

4. Summarize the reasons for the request:

The Level I was completed in 2015 and the district is ready for a Level II follow up as they have identified several projects that require a feasibility level of design and cost estimation. Additionally, in 2009, Willwood Dam was evaluated for rehabilitation projects and sediment removal. The District is interested in knowing the current rehabilitation needs of the existing dam as well as alternatives for replacing the dam with a new diversion.

II. WWDC ELIGIBILITY CONSIDERATIONS

1. Is the Sponsor a public entity? Yes

A. If not, is the recommendation for a Level I study or Level I or II study for a dam and reservoir project? N/A

2. Project Priority According to WWDO Criteria: Acct II - Priority 7: LII Feasibility Studies

3. Will the project serve at least 1,000 water righted acres? Yes

A. Number of Acres: 11,600

4. Is the sponsor eligible for funding from other state or federal programs? Yes

A. If so, what are they? NRCS, BOR

5. Is the Sponsor currently served by a regionalized water supply system (specify)? Or will the Sponsor consider regional solutions to the purpose and needs of its water supply system? N/A

6. Can the project be delayed or staged? Yes

A. Should it be? No

III. PERTINENT INFORMATION

1. Existing Water Supply System

A. Description of Direct Flow Supply

(1) Direct Flow Diversion Right (CFS): 74

(2) Direct Flow Source (Name of River, Stream, etc.): Shoshone River

(3) Type of Diversion (Headgate, Pump, etc.): Gravity Weir Dam

(4) Water Transmission System (Canal, Pipeline, etc.): Canal

B. Description of Stored Water Supply

(1) Name(s) of Storage Facility (Reservoir): Buffalo Bill Reservoir

(2) Location: Park County; West of Cody, WY

(3) Amount of Stored Water Right (Acre-Feet): 330,710

(4) Is any of the stored supply obtained from a federal facility? Yes

a. Percent of Total Supply from Federal Facility: 100%

b. Amount of Stored Supply from Federal Facility (Acre-Feet): 330,710

c. Name(s) of Federal Facility: Buffalo Bill Reservoir

C. Description of Groundwater Supply

- (1) Number of Wells: N/A
- (2) Primary Supply Aquifer(s) or Formation(s): N/A
- (3) Total Average Production Yield of All Wells (GPM): N/A

D. Water Rights

- (1) For the water source supply (or supplies) described above, does the Sponsor possess valid and/or adjudicated water rights? Yes

E. System Capacity

- (1) Maximum Capacity of the Water Supply System (Acre-Feet per Day or CFS): 320 CFS
- (2) Increased Capacity Needed (If Known) (Acre-Feet per Day or CFS): Unknown

F. Water Usage

- (1) Estimate of Total Water Provided by the System Annually (Acre-Feet per Year): 110,000
- (2) Average Day Demand (Acre-Feet per Day or CFS): 635 acre-ft – 320.15 CFS Average Canal Flow
- (3) Maximum Day Demand (Acre-Feet per Day or CFS): 825 acre-ft – 415.94 CFS Peak Demand

2. Existing Service Area and On-Farm Information

A. Service Area Information

- (1) How many total acres are in the district? 11,600
- (2) How many acres are assessed? 11,600
- (3) How many acres are irrigated? 11,600
- (4) What is the annual water delivery assessed (acre-feet per acre)? 6.9
- (5) How many individual land owners receive water? 203

B. On-Farm Information

- (1) What is the normal irrigation season (e.g., May 1 – Sept. 30)? April 15 – October 15
- (2) What type(s) of on-farm irrigation water applications is used (e.g., center pivot, side roll, flood, etc.)? Flood, Tubes, Gated Pipe, Wheel Lines, Center Pivots, Drip Systems
- (3) Briefly describe the main crops and cropping patterns:
Sugar Beets, Dry Beans, Malt Barley, Alfalfa Hay, Feed Corn
- (4) Describe the water measuring devices currently in use:
Pressure sensor at the Willwood Diversion Dam. Lookdown sensor for main canal, Cipolletti weirs at laterals, Parshall flume at turnouts, electronic flow meters, staff gages, Rubicon gates with discharge and canal flow
- (5) Percentage of Farm Turnouts with Measuring Devices: 70%
- (6) Are water deliveries recorded? Yes
- (7) Estimated System Water Losses (Percentage): Unknown
- (8) What water conservation measures are employed by the Sponsor?
Willwood Irrigation District Canal is regulated to meet irrigation demands. Open laterals that have significant water loss have been converted to buried pipe. Lining of canals has been done in areas to help reduce or contain seepage.

3. Financial Information

A. District Financing

- (1) Is the assessment based on acres, acre-feet delivered, acre-feet of storage, or other (specify)? Acres

(2) How is voting authority delegated to water users (e.g., shares, individuals, number of acres, etc.)?

Voting is by number of water righted acres

(3) What is the per-unit amount of the current assessment? \$31.50

(4) Is there is a basic service charge or first acre assessment in addition to assessments? If so, specify amount: Yes / \$25.00 – Board Voted April 2022 Meeting -2023 Service Fee will go to \$100.00 per user

B. Financial Statement

(1) Revenues

a. Annual Revenues Generated from Assessments:	\$ 370,533.93
b. Annual Revenues from Other Sources:	\$ 6,000.00
c. Total Annual Revenues:	\$ 376,533.93

(2) Expenditures

a. Annual Budget for Operation and Maintenance Expenses:	\$ 317,000.00
b. Annual Payments for Debt Retirement:	\$ 43,894.25
c. Annual Payments to a Repair and Replacement Fund:	\$ 0
d. Annual Payments to an Emergency Fund:	\$ 0
e. Annual Payments for Other Purposes:	\$ 0
f. Total Annual Payments:	\$ 360,894.25

(3) Other

a. Balance in Repair and Replacement Fund:	\$ 339,936.01
b. Balance in Emergency Fund:	\$ 80,592.11
c. Explanation (If Needed):	Annual Payment to Repair and Replacement is two accounts: system rehabilitation is \$3.00 per acre from assessment, and Equipment Depreciation is \$2.00 per acre from assessment. Total of \$5.00 x 11,603.23 acres. If needed these funds can also be used as Balance in Emergency Fund.

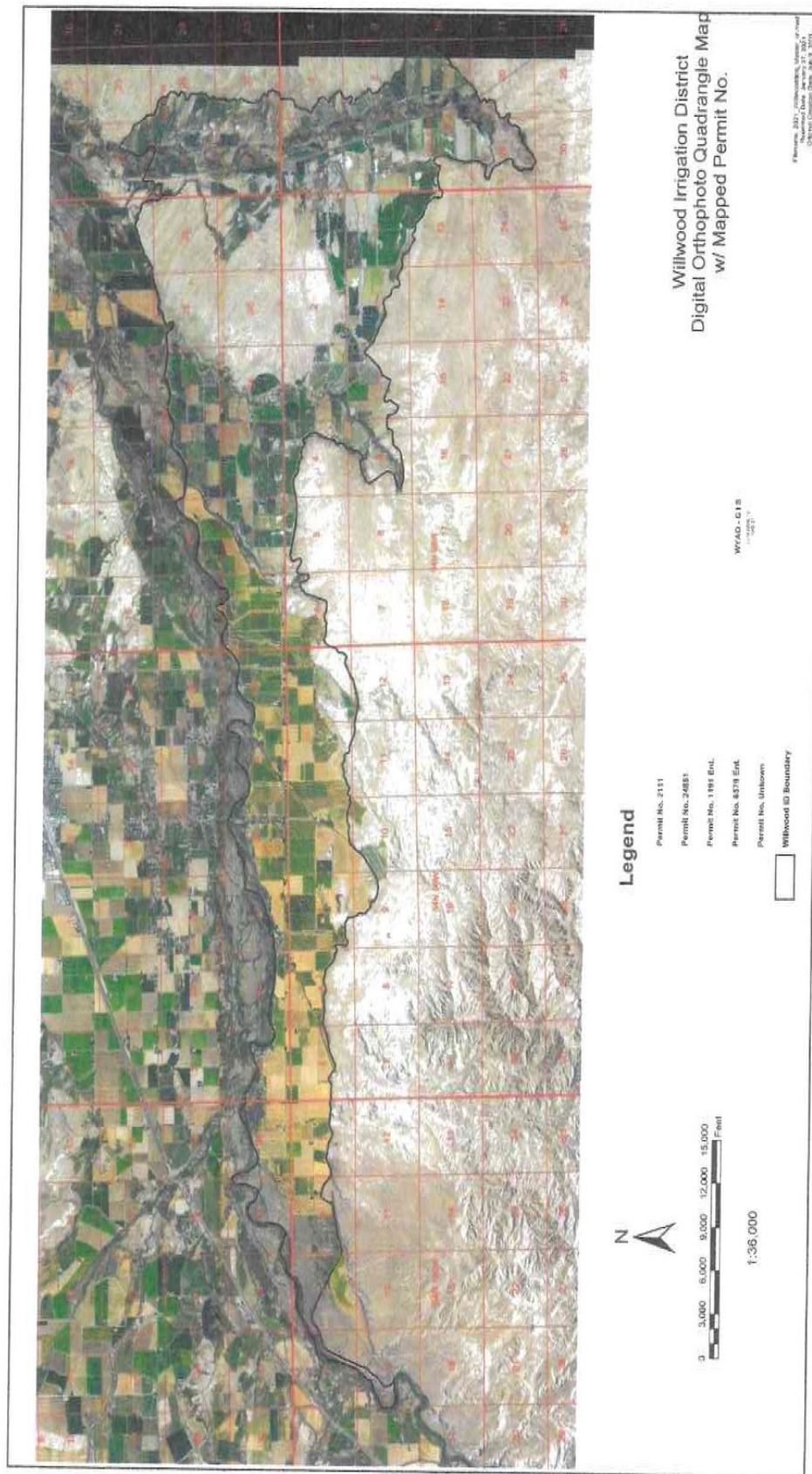
(4) Is the operation of the water system self-supporting in terms of revenues offsetting costs for operation, maintenance, debt retirement, replacement funds, emergency funds, etc.?

Yes

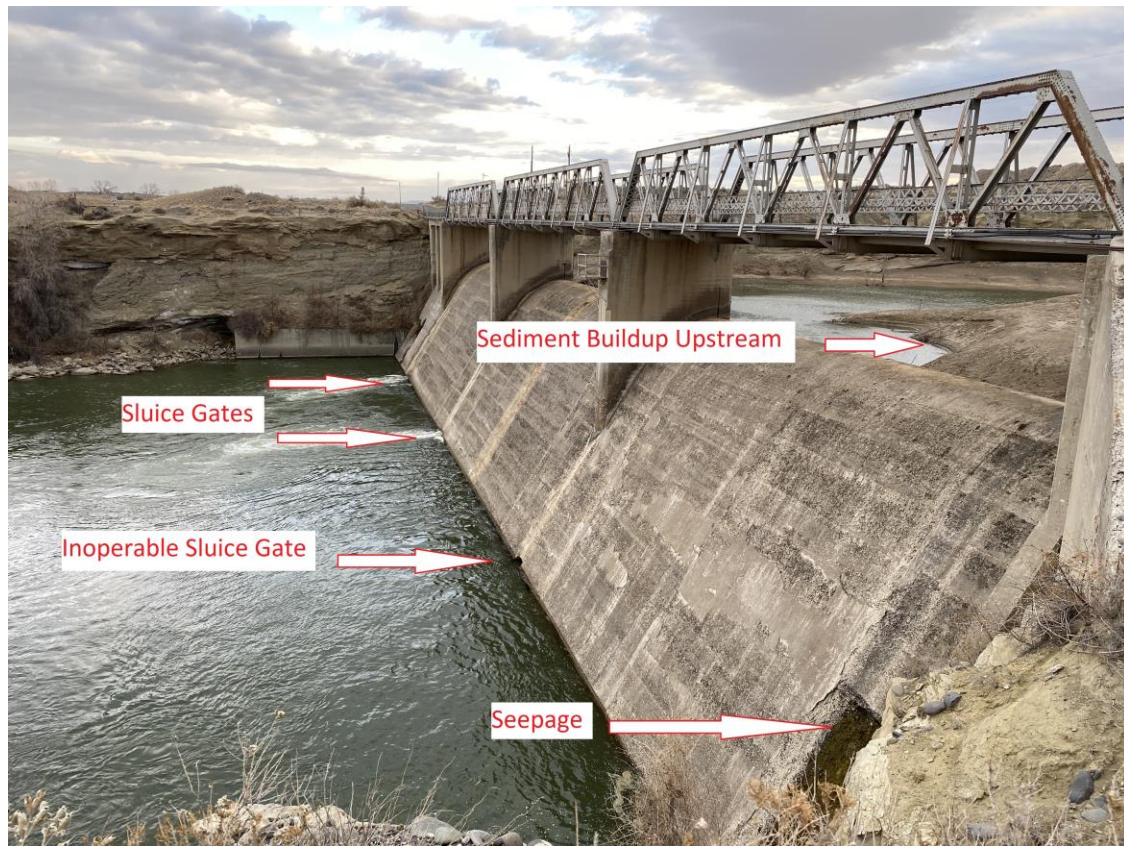
a. If not, how is the difference subsidized?

N/A

PROJECT AREA MAP



PHOTOS



Willwood Dam Downstream



Willwood Dam Upstream



Drop Structure



Seepage Mitigation Project



Chute Example



Tributary Contributing Sediment

RESOLUTION



A RESOLUTION AUTHORIZING THE WILLWOOD IRRIGATION DISTRICT TO SPONSOR A WYOMING WATER DEVELOPMENT PROGRAM LEVEL II FEASIBILITY STUDY.

WITNESSETH

Whereas, the Willwood Irrigation District Board of Commissioners is the Governing Body of the Willwood Irrigation District and desires to participate in the Wyoming Water Development Program by submitting a Level II Feasibility Study application; and

Whereas, the Willwood Irrigation District Board of Commissioners recognizes the need for the project to evaluate irrigation efficiency opportunities and dam operation alternatives for the Willwood Irrigation District; and

Whereas, the application and project were discussed at the February 10, 2022 Willwood Irrigation District regular Board Meeting at the Willwood Irrigation District office in Powell, Wyoming; and


Whereas, the Willwood Irrigation District Commissioner Roger Smith moved to approve sponsorship for the Wyoming Water Development Program Level II Feasibility Study application and Willwood Irrigation District Commissioner Neil Christofferson seconded this motion; no discussion followed, and all ayes carried the motion; and

Whereas, the Willwood Irrigation Commissioners states that Travis Moger is hereby designated as an authorized representative of the Willwood Irrigation District to act on behalf of the Governing Body on matters relating to this grant application that do not need Board approval; and

Whereas, the Wyoming Water Development Program requires certain criteria be met, as described in the Wyoming Water Development Commission rules and regulations governing the program, and to the best of the Willwood Irrigation District's knowledge the proposed application meets those criteria; and

Now, therefore be it resolved, that the Willwood Irrigation District Board of Commissioners sponsors the submittal of the Wyoming Water Development Program Level II Feasibility Study application.

Passed, approved this 10th day of February 2022.


Willwood Irrigation District Chairman

2/28/22
Date

WYOMING NOTARY ACKNOWLEDGMENT

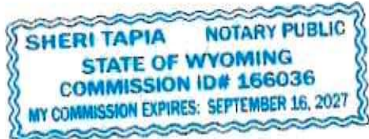
State of Wyoming

County of Farm

This instrument was acknowledged before me on 2-28 2022 (date) by

TRAY PIMENTEL (name(s) of person(s)).

(Seal)



[Signature]

Signature of Notarial Officer

NOTARY PUBLIC

Title and Rank

My commission expires: 9-16-2027

**MEMORANDUM OF UNDERSTANDING BETWEEN
THE WYOMING WATER DEVELOPMENT COMMISSION AND
THE UNIVERSITY OF WYOMING, OFFICE OF RESEARCH AND ECONOMIC
DEVELOPMENT
FOR THE OFFICE OF WATER PROGRAMS**

1. **Parties.** The parties to this Memorandum of Understanding (MOU) are the Wyoming Water Development Commission (WWDC), whose address is 6920 Yellowtail Road, Cheyenne, Wyoming 82002, and the University of Wyoming, Office of Research and Economic Development (University), whose address is Dept. 3355, 1000 E. University Avenue, Laramie, Wyoming 82071.
2. **Purpose.** The purpose of this MOU is to further the water resources objectives of the University, the WWDC and other agencies by providing WWDC support for funding of the Office of Water Programs within the Office of Research and Economic Development at the University of Wyoming.
3. **Term of MOU.** This MOU is effective when all parties have executed it and all required approvals have been granted. The term of the MOU is from July 1, 2022, and shall remain in full force and effect through June 30, 2024.
4. **Payment.**
 - A. The total payment provided by the WWDC to the University shall not exceed one hundred seventy-five thousand dollars (\$175,000.00). Payments shall be made to the University of Wyoming Office of Sponsored Programs in the form of two (2) annual payments (fiscal years 2023 and 2024) of eighty-seven thousand, five hundred dollars (\$87,500.00) to commence July 1, 2022. Payment shall be made from Water Development Account I.
5. **Responsibilities of University.** The University shall:
 - A. Work with the Director of the Wyoming Water Development Office to identify research needs of state and federal agencies regarding Wyoming's water resources, including available funding under the National Institutes of Water Resources (NIWR);
 - B. Serve as a point of coordination for and to encourage research activities by the University of Wyoming to address the research needs identified in subsection A of this section;
 - C. Work with the WWDC, Legislative Select Water Committee (SWC) and the Water Research Program (WRP) Advisory Committee to identify research topics regarding Wyoming's water resources and draft the request for proposal (RFP);

- D. Following approval of the RFP by the WWDC and SWC, solicit research proposals addressing the research and training activities identified in subsection C of this section;
- E. Conduct external peer reviews of the proposals received and work with the WRP Advisory Committee to review and rank projects for final consideration and approval by the WWDC and SWC; and
- F. In conjunction with the Wyoming Water Development Office, submit a report annually prior to each legislative session to the SWC and the WWDC on the activities of the office.
- G. By May 1, 2024, an accounting estimate of funds not anticipated to be used shall be provided to the WWDC.

6. **Responsibilities of WWDC.** The WWDC shall:

- A. Provide payment to the University in accordance with Section 4, above.

7. **General Provisions.**

- A. **Amendments.** Either party may request changes in this MOU. Any changes, modifications, revisions, or amendments to this MOU which are mutually agreed upon by the parties to this MOU shall be incorporated by written instrument, executed and signed by all parties to this MOU.
- B. **Applicable Law.** The construction, interpretation, and enforcement of this MOU shall be governed by the laws of the State of Wyoming. The Courts of the State of Wyoming shall have jurisdiction over any action arising out of this MOU and the parties. The venue shall be the First Judicial District, Laramie County, Wyoming.
- C. **Audit/Access to Records.** The WWDC and any of its representatives shall have access to any books, documents, papers, and records of the University which are pertinent to this MOU.
- D. **Availability of Funds.** Each payment obligation of either party is conditioned upon the availability of government funds which are appropriated or allocated for the payment of this obligation. If funds are not allocated and available for the continuance of the services performed by either party, the MOU may be terminated by either party at the end of the period for which the funds are available. Each party shall notify the other party at the earliest possible time of the services which will or may be affected by a shortage of funds. No penalty shall accrue to either party in the event this provision is exercised, and neither party shall be obligated or liable for any future payments due or for any damages as a result of termination under

this section. This provision shall not be construed to permit either party to terminate this MOU to acquire similar services from another party.

- E. Entirety of Agreement.** This MOU, consisting of four (4) pages, represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations, and agreements, whether written or oral.
- F. Prior Approval.** This MOU shall not be binding upon either party unless this MOU has been reduced to writing before performance begins as described under the terms of this MOU, and unless this MOU is approved as to form by the Attorney General or her representative.
- G. Severability.** Should any portion of this MOU be judicially determined to be illegal or unenforceable, the remainder of the MOU shall continue in full force and effect, and the parties may renegotiate the terms affected by the severance.
- H. Sovereign Immunity.** The State of Wyoming, the WWDC and University do not waive sovereign or governmental immunity by entering into this MOU, and each fully retains all immunities and defenses provided by law with respect to any action based on or occurring as a result of this MOU.
- I. Third Party Beneficiary Rights.** The parties do not intend to create in any other individual or entity the status of third-party beneficiary, and this MOU shall not be construed so as to create such status. The rights, duties and obligations contained in the MOU shall operate only between the parties to this MOU, and shall inure solely to the benefit of the parties to this MOU. The provisions of this MOU are intended only to assist the parties in determining and performing their obligations under this MOU.

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8. **Signatures.** The parties to this MOU, through their duly authorized representatives, have executed this MOU on the dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this MOU as set forth herein.

The Effective Date of this MOU is the date of the signature last affixed to this page.

WYOMING WATER DEVELOPMENT COMMISSION

Mark Kot, Chairman

Date

Liisa Anselmi-Dalton, Secretary

Date

**UNIVERSITY OF WYOMING, OFFICE OF RESEARCH
AND ECONOMIC DEVELOPMENT**

Diana G. Hulme
Interim Vice President for Research & Economic Development

Date

ATTORNEY GENERAL'S OFFICE: APPROVAL AS TO FORM

Meg Pope #221249
Megan Pope, Senior Assistant Attorney General

4/19/22
Date

WATER RESEARCH PROGRAM

BACKGROUND AND APPROXIMATE SCHEDULE

BACKGROUND

The University of Wyoming Water Research Program (WRP) is a cooperative State-Federal-University water-related research and training program.

In late 1999, the WRP was initiated to oversee the coordination of Wyoming's participation in the National Institutes for Water Resources program. The primary purposes of the WRP are:

- Support and coordinate research relative to important water resource problems of the State.
- Support the training of scientists and students in relevant water resource fields.
- Promote the dissemination and application of the results of water-related research.

State support for the WRP includes direct funding through the Wyoming Water Development Commission and active State participation in identifying research needs and project selection. A key element of the WRP is its focus on State needs. Benefits of the WRP to the State of Wyoming include:

- Support of water related research, both short term and long term.
- Addressing water issues important to the State.
- Support of water related training and education.
- Availability of personnel with water expertise to assist in addressing technical questions.

The Office of Water Programs (OWP)/WRP Advisory Committee consists of representatives from State and Federal Agencies involved in water related activities. The Committee solicits and identifies research needs, reviews and ranks proposals, and monitors progress of awarded projects.

SCHEDULE

Late April/Early May-Advisory Committee convenes to discuss research topics and drafting of the RFP for the upcoming year

May- RFP is presented at the WWDC/SWC meeting and approved by both the WWDC and SWC.

August/September -RFP distributed to University of Wyoming researchers.

Early October- Research proposal deadline.

October/November- Outreach to Advisory Committee to recruit volunteers to peer review the proposals received. Peer review takes place.

October (odd numbered years)/November (even numbered years)- Advisory Committee meets to review and rank proposals. After this meeting, a recommendation is prepared for the WWDC.

November-Recommendation is presented to the WWDC with the Committee's rankings of the projects. The WRP recommendation becomes a part of the Omnibus Water Bill – Planning.

December/January–Omnibus Water Bill-Planning legislation drafted

January to March–Planning bill acted on by Wyoming State Legislature

March/April: WRP Memorandum of Understanding is approved by WWDC and SWC. New WRP projects can begin.

**MEMORANDUM OF UNDERSTANDING BETWEEN
THE WYOMING WATER DEVELOPMENT COMMISSION AND
THE UNIVERSITY OF WYOMING, OFFICE OF RESEARCH AND ECONOMIC
DEVELOPMENT**

1. **Parties.** The parties to this Memorandum of Understanding (MOU) are the Wyoming Water Development Commission (Commission), whose address is 6920 Yellowtail Road, Cheyenne, Wyoming 82002, and the University of Wyoming, Office of Research and Economic Development (University), whose address is Dept. 3355, 1000 E. University Avenue, Laramie, Wyoming 82071.

2. **Purpose.** The purpose of this MOU is to further the water resource research objectives of the University, the Commission, and other agencies by providing Commission support for research regarding Wyoming's water resources. The water resources research needs will be defined by the Commission and Legislative Select Water Committee (SWC) following consideration of input received from the Water Research Program (WRP) Advisory Committee.

3. **Term of MOU.** This MOU is effective when all parties have executed it and all required approvals have been granted (Effective Date). The term of the MOU is from May 12, 2022 or the Effective Date, whichever is later, through June 30, 2026.

4. **Payment.**
 - A. The total payment provided by the Commission to the University shall not exceed three hundred ten thousand, two hundred seventy-seven dollars (\$310,277.00). Payment shall be made to the University of Wyoming Office of Sponsored Programs within forty-five (45) days after submission of invoice pursuant to Wyo. Stat. § 16-6-602 in the form of one (1) payment of three hundred ten thousand, two hundred seventy-seven dollars (\$310,277.00).

5. **Responsibilities of University.** The University shall:
 - A. Conduct the following new research projects (FY2022 WRP solicitation) as approved by the Commission and SWC on January 26 and 27, 2022 respectively:

"Economic Impacts of Curtailment and Demand Management in the Wyoming Colorado River Basin"; Hansen, Coupal, and Paige, three (3) year duration. University match: one hundred two thousand, eight hundred thirty-nine dollars (\$102,839.00). Commission amount: one hundred forty thousand, two hundred seventy-seven dollars (\$140,277.00).

"Evaluation of Critical Minerals (CMs) Deposits, Mainly Lithium (Li) and Rare Earth Elements (REEs), in Wyoming as well as the Economic Viability of Mining These

Resources"; Fan, two (2) year duration. University match: one hundred sixteen thousand, eighty-nine dollars (\$116,089.00). Commission amount: one hundred seventy thousand dollars (\$170,000.00).

- B. Provide the Commission with copies of all reports produced as a result of WRP activities.
- C. Provide the Commission an accounting estimate of funds by May 1, 2026 for funds not anticipated to be used.

6. **General Provisions.**

- A. **Amendments.** Either party may request changes in the MOU. Any changes, modifications, revisions or amendments to this MOU which are mutually agreed upon by the parties to this MOU shall be incorporated by written instrument, executed and signed by all parties to this MOU.
- B. **Applicable Law.** The construction, interpretation and enforcement of this MOU shall be governed by the laws of the State of Wyoming. The Courts of the State of Wyoming shall have jurisdiction over any action arising out of this MOU and over the parties. The venue shall be the First Judicial District, Laramie County, Wyoming.
- C. **Availability of Funds.** Each payment obligation of either party is conditioned upon the availability of government funds which are appropriated or allocated for the payment of this obligation. If funds are not allocated and available for the continuance of the services performed by either party, the MOU may be terminated by either party at the end of the period for which the funds are available. Each party shall notify the other party at the earliest possible time of the services which will or may be affected by a shortage of funds. No penalty shall accrue to either party in the event this provision is exercised, and neither party shall be obligated or liable for any future payments due or for any damages as a result of termination under this section.
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- F. **Severability.** Should any portion of this MOU be judicially determined to be illegal or unenforceable, the remainder of the MOU shall continue in full force and effect, and the parties may renegotiate the terms affected by the severance.

- G. Sovereign Immunity.** The State of Wyoming, the Commission, and University do not waive sovereign immunity by entering into this MOU, and each fully retains all immunities and defenses provided by law with respect to any action based on or occurring as a result of this MOU.
- H. Third Party Beneficiary Rights.** The parties do not intend to create in any other individual or entity the status of third-party beneficiary, and this MOU shall not be construed so as to create such status. The rights, duties and obligations contained in this MOU shall operate only between the parties to this MOU and shall inure solely to the benefit of the parties to this MOU. The provisions of this MOU are intended only to assist the parties in determining and performing their obligations under this MOU.

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The Effective Date of this MOU is the date of the signature last affixed to this page.

WYOMING WATER DEVELOPMENT COMMISSION:

Mark Kot, Chairman

Date

Liisa Anselmi-Dalton, Secretary

Date

**UNIVERSITY OF WYOMING, OFFICE OF RESEARCH
AND ECONOMIC DEVELOPMENT:**

Diana G. Hulme
Interim Vice President for Research & Economic Development

Date

ATTORNEY GENERAL'S OFFICE: APPROVAL AS TO FORM

Meg Pope #221250
Megan Pope, Senior Assistant Attorney General

4/19/22
Date

REQUEST FOR PROPOSALS

University of Wyoming Office of Water Programs Water Research Program FY2023

The Office of Water Programs/Water Research Program (OWP/WRP) welcomes proposals covering topics involved in Wyoming's water resources. Each proposal shall include a "Non-technical Statement of Relevance" with an explanation of:

- how the study could be used by governmental agencies in the management of Wyoming's water resources,
- how this project will meet the research needs of State and Federal agencies regarding Wyoming's water resources,
- how this project will support water related training and education,
- specifically, how technology transfer will occur.

Principal Investigators are encouraged to consult with state agencies concerning the following topics prior to submitting proposals. Letters of support from local, state and federal agencies are also encouraged to be submitted with proposals.

Proposals will be evaluated on the following:

- Benefits
- Likelihood of success
- Scientific merit
- Methods
- Timeline
- Overall presentation

Protecting Public Health

Wyoming citizens and out-of-state visitors enjoy fishing, boating, swimming, floating and other recreational opportunities provided by Wyoming's lakes, reservoirs, rivers and streams. However, recreational activities, particularly those that result in full-body immersion, can pose a risk to public health if individuals are exposed to pollutants in the water that cause adverse health effects. In addition, pollutants in surface water and groundwater used for drinking water can pose a risk to human health.

- **Water borne pathogens** (as typically measured by the indicator *E. coli*) cause the majority of Wyoming's surface water quality impairments. Research addressing pathogens is of significant importance to the State of Wyoming. Additional tools are needed to better allow state and local water managers, regulators, conservation groups and others to minimize public health risk by 1) better assessing and prioritizing public health risk, 2) identifying sources of pathogens, and 3) identifying effective management measures to reduce pathogens and mitigate public health risk. In particular, the following topics are identified as priority research areas:
 - Studies related to evaluating the ability of indicators other than *E. coli* (e.g.

enterococci, coliphage) to accurately assess public health risk from waterborne pathogens in Wyoming waterbodies.

- Epidemiological studies relating pathogen levels to incidence of water borne pathogen exposure and illness in Wyoming streams and rivers.
- Studies that evaluate the effectiveness of conservation practices in reducing pathogen (*E. coli*) loading to surface waters.

- **Nutrients** (nitrogen and phosphorus), in appropriate amounts, are essential to healthy aquatic ecosystems. However, excessive nutrients, or nutrient pollution, can lead to harmful cyanobacteria blooms (HCBs) in lakes or reservoirs. HCBs are dense concentrations of cyanobacteria or blue-green algae that pose a risk to human, pet and livestock health. HCBs can produce poisons called cyanotoxins and may be associated with other irritants that can cause adverse health effects such as rashes, itching, numbness, nausea, fatigue, disorientation, abdominal pain, vomiting and diarrhea. In extreme cases, cyanotoxins may lead to pet or livestock death. HCBs can also cause fish kills and interfere with drinking water supplies. Recreational use health advisories were issued on 28 Wyoming reservoirs in 2021 due to HCBs. Research on nutrient pollution and HCBs would help state and local entities better identify, assess and respond to HCBs in order to reduce public health risk from exposure to cyanotoxins and other cyanobacteria- related irritants.

Excess nutrient pollution in surface water and groundwater used for drinking water can also represent a public health risk. High nitrates in drinking water can affect the ability of the blood to carry oxygen and can cause methemoglobinemia. Understanding sources of nutrient pollution within a watershed (e.g., wastewater, fertilizer, animal waste) can help local, state, and federal agencies protect water quality for drinking water.

The following topics are identified as priority research areas:

- Studies evaluating the effectiveness of conservation practices or advanced treatment septic systems in reducing nutrient loading to surface waters and groundwater.
 - Studies on the types and levels of toxins (or other compounds causing health effects) in cyanobacteria blooms in Wyoming surface waters.
 - Studies evaluating the health risks to humans, pets, livestock and wildlife associated with cyanobacteria blooms with and without toxins.
 - Studies related to the presence of benthic cyanobacteria blooms and potential toxin production in streams and rivers.
 - Studies evaluating the risks of using irrigation water from lakes and reservoirs where HCBs are occurring.
 - Studies evaluating sources of nutrient pollution in areas of the state where high nitrates are being detected in groundwater used for drinking water.
 - Studies that help management agencies understand and use methods to identify nutrient sources (e.g., nutrient isotope analysis).
- **Antibiotic Pollution** is increasing worldwide and there is an increasing concern over the fate and transport of these substances in surface waters. Research on these and similar medication toxins would help state and local health officials determine if and where in Wyoming this issue is emerging. In particular, the following topics are identified as priority research areas:
 - Studies on the types and magnitude of antibiotic and/or other medication toxins in

- Wyoming surface waters.
- Studies related to the fate and transport of antibiotic and/or medication toxins in Wyoming surface waters.

Dam Operation and Sediment Management and Transport

The accumulation of sediment in stream systems and behind dams presents challenges. Effective dam operations require the ability to meet water user needs while still protecting downstream uses (e.g., fisheries, aquatic life). Additional research is needed to help understand how to prevent heavy sediment releases and how to effectively respond when they occur. Areas of research include, but are not limited to:

- Additional studies describing the fate and transport of sediments in Wyoming's erosive watersheds and what measures can assist with reducing sediment inputs.
- Further studies on using "flushing flows" to address downstream sediment deposition following releases.
- Studies on economically feasible ways to remove sediment accumulated behind dams.
- Information on ways to most effectively manage sediment at dams and reservoirs to protect and maintain downstream surface waters.
- Best management practices (BMPs) for reducing sediment transport from contributing watersheds.
- Studies evaluating the negative impacts of sediment deposition on land use and land features, such as rangelands and wetlands.
- Analysis of data collected in response to addressing sediment releases from Willwood Dam. Using data gathered from previous and ongoing OWP/WRP projects, the United States Geological Survey (USGS), Wyoming Department of Environmental Quality (WY DEQ), Wyoming Game and Fish Department (WY G&F) and local conservation districts, complete needed data analysis to help address monitoring objectives of Working Groups 2 and 3 (<https://wyowillwood.org/working-groups/>).

Proposals may also address dam infrastructure issues and dam operation.

Investigating the Hydrologic and Physical Effects of Voluntary Fallowing of Fields

Extended drought conditions in the Southwest have had major effects on water supplies, especially reservoir levels. In the Upper Colorado River basin, which includes the Green and Little Snake River basins, this may result in eventual curtailment of water rights per existing interstate compacts. In an attempt to enhance water levels, the Upper Colorado River basin states, including Wyoming, are currently analyzing the public's interest and the technical feasibility of a temporary, compensated and voluntary demand management program. A major component of this program could include fallowing fields. Information gathered to date has identified the need for further research and data gathering. Research results should have applicability to other basins in Wyoming. Areas of research include:

- The short- and long-term effects, both beneficial and detrimental, of fallowing fields on stream health, including quality and quantity of flow. Research should consider both split season and full season fallowing as well as sprinkler and basic flood irrigation methods. Research should also include analyzing the effects of fallowing on the local shallow aquifers.
- The effects of fallowing on harvest yields. Research should take into account same-year yields of fields that are fallowed for half a season and/or the post-season effects on yields

of fields fallowed in the prior season(s).

- The effects, both beneficial and detrimental, on field health related to invasive species due to fallowing. Research should consider split season and full season fallowing time frames as well as flood and sprinkler irrigation methods

Understanding and Responding to Future Change in Hydrologic Variability

Hydrologic variability is predicted to change as climate variability changes. Climate projections indicate Wyoming will become significantly hotter by 2040-2069 (<https://wgfd.wyo.gov/habitat/habitat-resources>). Precipitation projections are less certain but it is possible there will be increases in springtime flooding, droughts and intensity of precipitation events. Soil moisture projections are also uncertain but with an increase in climate variability, evapotranspiration is likely to increase as well. Better understanding of future changes in hydrologic variability and assessment of on-the-ground management actions will help the State of Wyoming plan for how best to mitigate and adapt to those changes. Areas of research include:

- Evaluating and/or developing models to best predict watershed-specific frequencies, magnitudes, durations and timing of snowfall, rainfall and runoff affecting baseflows, bankfull flows, flooding and droughts in Wyoming.
- Assessing and prioritizing watersheds by their vulnerability to future hydrologic variability.
 - Identify watersheds most susceptible to increased flooding, droughts and evapotranspiration and to reduced availability of water for agricultural, municipal, industrial, domestic and other beneficial uses. This could include assessment of past, current and projected future categorization of streams as ephemeral, intermittent or perennial.
 - Identify watersheds most likely to experience higher rates of erosion and/or sedimentation due to changes in frequency or magnitude of bankfull and flood flows.
 - Determine which watersheds are most likely to show adverse effects to stream, riparian and wetland habitats and species due to changes in water quantity, hydrologic connectivity and water quality (including water temperature).
 - Assess potential for increased threats of invasive aquatic and riparian species due to changes in water quantity, water quality (including water temperature) and habitat availability and/or condition.
 - Develop remote sensing, GIS and/or other tools to identify, monitor and show stream, riparian, wetland and watershed vulnerability to change in hydrologic variability. Such tools will be most useful if they can be updated as additional information and modeling projections become available.
- Identify and assess watershed-specific effects (beneficial and detrimental) of on-the ground restoration and management actions to mitigate long-term change in hydrologic variability and its effects. For example:
 - Upland, wetland and stream restoration to affect water quality and timing and quantity of water availability.
 - Actions that favor native species over invasive aquatic and riparian species.

Proposals may build upon research needs for specific areas of the state (ie. Upper Colorado River Basin).

Enhanced Streamflow Estimation and Water Supply Forecasting

The Wyoming Water Strategy (2015) identified the need to better understand watershed, atmospheric, and climatic variables and their effects on streamflows and water supply, as well as the need to update, improve and/or develop water supply forecasts in river basins of Wyoming.

Areas of research include:

- Innovation of new approaches to complement or replace existing methods of streamflow estimation and flow forecasting tools that analyze the response of various combinations of climate, water demand and land use on streamflow as well as general watershed hydrology. New and improved tools will aid in watershed planning, water management planning, and feasibility studies. Particular emphasis should be placed on:
 - Developing new or improving weighted averaging approaches for combining regional regression methods and partial-year concurrent discharge measurements for estimating year-round mean monthly flows and exceedance flow statistics in small basins without long-term gauging stations. Ideally approaches will include statistical tools, such as confidence intervals, to characterize inherent uncertainty of such streamflow estimates.
 - Use of geospatial models and statistical analyses to better understand the important drivers of streamflow (including drivers that determine whether a stream is intermittent or perennial in a given basin) in small stream basins (<50 square miles).
 - Calibration of forecasting tools in hybrid plains/mountain streams with highly variable climates during low flow years. This could include an evaluation of temperature predictions in relation to water demand factors as well as research aimed at enhancing understanding of transitional zones (i.e. foothills that typically receive intermittent to seasonal snowpack) and lower-elevation (i.e. high plains) contributions to streamflow. Two examples of basins of interest in Wyoming that have large datasets that can contribute to the initiation of research are the Tongue River and Upper North Platte River Basins.



WYOMING WATER DEVELOPMENT COMMISSION
LEVEL III CONSTRUCTION REPORT
May-2022



PROJECT: Gillette Regional Extensions - Phase II **SPONSOR:** City of Gillette

PROJECT DESCRIPTION: Project design, permitting, land procurement, construction engineering and construction for Eight Mile ISD and Stone Gates Estates ISD

WWDC MANAGER: Bryan Clerkin

FUNDING

WWDC Appropriation:	\$ 2,237,800.00 67.0%	WWDC Account:	Account I
WWDC Grant Amount:	\$ 2,237,800.00 67.0%	Session Law:	2016/2017
WWDC Loan Amount:	\$ - 0.0%	Reversion Date:	6/30/2022

Funding Source #2:	Campbell County Capital Facilities Tax
Amount:	\$ 1,102,200.00 33.0%

Total Project Budget:	\$ 3,340,000.00 100.0%
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ENGINEERING-Eight Mile ISD

Engineer:	HDR	Agreement Date:	Jul-06-2017
Design Fee:	\$ 171,173.00		
Construction Fee:	\$ 151,417.50		
Total Fee:	\$ 322,590.50		

ENGINEERING-Stone Gates Estates ISD

Engineer:	DOWL	Agreement Date:	Jul-06-2017
Design Fee:	\$ 118,745.00		
Construction Fee:	\$ 58,920.00		
Total Fee:	\$ 177,665.00		

CONSTRUCTION-Eight Mile ISD

Bid Opening Date:	Oct-23-2019	Number of Bids:	4
Low Bidder:	Hot Iron, Inc.	Range of Bids:	\$1.11M-\$1.53M
Engineer's Estimate:	\$1,380,000	Agreement Date:	Nov-15-2019
Contractor Amount:	\$1,152,590.75	Construction Time:	65 days

CONSTRUCTION-Stone Gates Estates ISD

Bid Opening Date:	May-14-2019	Number of Bids:	2
Low Bidder:	Hot Iron, Inc.	Range of Bids:	\$705K-\$1.23M
Engineer's Estimate:	\$ 865,795.00	Agreement Date:	May-21-2019
Contractor Amount:	\$659,030.08	Construction Time:	110 days

MISCELLANEOUS COSTS (Easements, Permits, Title Of Opinion, Title Search etc.)

Misc. Costs	\$ 90,412.02
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WYOMING WATER DEVELOPMENT COMMISSION
LEVEL III CONSTRUCTION REPORT
May-2022



PROJECT: Gillette Regional Extensions - Phase II **SPONSOR:** City of Gillette

PROJECT CLOSEOUT

Final Project Cost:	\$	2,402,288.35	Date:	Jun-15-2021
WWDC Funding Share:	\$	1,568,206.16		
Other Funding Sources:	\$	834,082.19		
WWDC Reverted Funding:	\$	669,593.84		

PROJECT STATUS

This project is complete and closed out.



WYOMING WATER DEVELOPMENT COMMISSION
LEVEL III CONSTRUCTION REPORT
April-2022



PROJECT: Hanover Irrigation District Cottonwood **SPONSOR:** Hanover Irrigation District
Spill/Check Replacement 2018

PROJECT DESCRIPTION: Design and construction of a spill/check structure

WWDC MANAGER: Sol Brich

FUNDING

WWDC Appropriation:	\$	277,380.00	43.0%	WWDC Account:	II
WWDC Grant Amount:	\$	277,380.00	43.0%	Session Law:	2018
WWDC Loan Amount:	\$	-	0.0%	Reversion Date:	7/1/2023

Funding Source #2:	BOR WaterSmart				
Amount:	\$	275,000.00	42.6%		

Funding Source #3:	Sponsor				
Amount:	\$	93,004.00	14.4%		

<u>Total Project Budget:</u>	\$	645,384.00	100.0%		
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ENGINEERING

Engineer:	Western Heritage	Agreement Date:	Feb-26-2019
Design Fee:	\$ 51,244.00		
Construction Fee:	<u>\$ 50,790.00</u>		
Total Fee:	\$ 102,034.00		

CONSTRUCTION

Bid Opening Date:	Apr-16-2020		Number of Bids:	4	
Low Bidder:	Copper Mountain Irrigation, LLC		Range of Bids:	\$543K-\$1.05M	
Engineer's Estimate:	\$	550,000.00	Agreement Date:	Jul-09-2020	
Contractor Amount:	\$	543,350.00	Construction Time:	120	

MISCELLANEOUS COSTS (Easements, Permits, Title Of Opinion, Title Search etc.)

Misc. Costs	\$	-			
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PROJECT CLOSEOUT

Final Project Cost:	\$	645,384.00	Date:	Aug-12-2021
WWDC Funding Share:	\$	277,380.00	43.0%	
Other Funding Sources:	\$	368,004.00	57.0%	
WWDC Reverted Funding:	\$	136,620.00		

PROJECT STATUS

The Sponsor received a WWDC loan, however they were able to complete the project without using the loan and the loan funds are being reverted. The project has been completed and closed.



WYOMING WATER DEVELOPMENT COMMISSION
LEVEL III CONSTRUCTION REPORT



PROJECT: Heart Mountain Irrigation District
Rehabilitation 2017

SPONSOR: Heart Mountain Irrigation District

PROJECT DESCRIPTION: Materials to convert an open ditch to pipe, construct structures, turnouts and conveyance features.

WWDC MANAGER: Jeffrey Kaiser

FUNDING

WWDC Appropriation:	\$ 410,000.00	WWDC Account:	Account II
WWDC Grant Amount:	\$ 410,000.00	Session Law:	2017
WWDC Loan Amount:	\$ -	Reversion Date:	2022

WWDC reimburses Sponsor for 100% of invoiced materials costs only
Sponsor is responsible for project Labor, Equipment and Engineering

Total Project Budget: \$ 410,000.00

ENGINEERING

Engineer: Sage Civil Engineering	Agreement Date:	N/A
Design Fee:	N/A	
Construction Fee:	N/A	
Total Fee:	\$ -	

CONSTRUCTION

Bid Opening Date:	Nov-22-2017	Number of Bids:	2
Low Bidder:	Big Horn Truck and Equipment	Range of Bids:	\$33.9K - \$45.7K
Engineer's Estimate:	\$ 54,584.00	Agreement Date:	N/A
Contractor Amount:	\$ 33,938.23	Construction Time:	N/A

MISCELLANEOUS COSTS (Easements, Permits, Title Of Opinion, Title Search etc.)

Misc. Costs \$ 5,004.23

PROJECT CLOSEOUT

Final Project Cost:	\$ 38,942.46	Date:	Jun-01-2018
WWDC Funding Share:	\$ 38,942.46		
Other Funding Sources:	\$ -		
WWDC Reverted Funding:	\$ 371,057.54		

PROJECT STATUS

The District completed one of three laterals involved in this project. The second two will not be constructed due to changes in the District structure and processes. This project is completed and closed out.



WYOMING WATER DEVELOPMENT COMMISSION
LEVEL III CONSTRUCTION REPORT



PROJECT: Midvale Irrigation District
Rehabilitation 2019

SPONSOR: Midvale Irrigation District

PROJECT DESCRIPTION: This project is to replace open ditch with PVC pipe on two lateral segments.

WWDC MANAGER: Jeffrey Kaiser

FUNDING

WWDC Appropriation:	\$ 559,000.00	WWDC Account:	Account II
WWDC Grant Amount:	\$ 559,000.00	Session Law:	2019
WWDC Loan Amount:	\$ -	Reversion Date:	2024

WWDC reimburses Sponsor for 100% of invoiced materials costs only
Sponsor is responsible for project Labor, Equipment and Engineering

Total Project Budget: \$ 559,000.00

ENGINEERING

Engineer:	Apex Surveying, Inc.	Agreement Date:	N/A
Design Fee:	N/A		
Construction Fee:	N/A		
Total Fee:	\$ -		

CONSTRUCTION

Bid Opening Date:	Aug-13-2020	Number of Bids:	2
Low Bidder:	Ferguson/Copper Mountain	Range of Bids:	\$254K to \$295K
Engineer's Estimate:	\$ 244,605.90	Agreement Date:	N/A
Contractor Amount:	\$ 254,077.40	Construction Time:	N/A

MISCELLANEOUS COSTS (Easements, Permits, Title Of Opinion, Title Search etc.)

Misc. Costs \$ 4,219.60

PROJECT CLOSEOUT

Final Project Cost:	\$ 258,297.00	Date:	Aug-17-2021
WWDC Funding Share:	\$ 258,297.00		
Other Funding Sources:			
WWDC Reverted Funding:	\$ 300,703.00		

PROJECT STATUS

Design and construction of Wyoming 5-Mile A Lateral will not be needed due to the sponsor re-evaluating the condition of this lateral and determining it is functioning efficiently. The project is therefore considered complete and closed out at this time, the remaining funds for the 5-Mile A Lateral will be reverted to the WWDC Account II.



WYOMING WATER DEVELOPMENT COMMISSION
LEVEL III CONSTRUCTION REPORT



PROJECT: Pioneer Transmission Pipeline 2017
Project

SPONSOR: Pioneer Water and Sewer District

PROJECT DESCRIPTION: The project consists of designing and constructing a new 12-inch (or equivalent) water transmission pipeline (designated as Line A).

WWDC MANAGER: Jeffrey Kaiser

FUNDING

WWDC Appropriation:	\$	1,246,200.00	67.0%	WWDC Account:	Account I
WWDC Grant Amount:	\$	1,246,200.00	67.0%	Session Law:	2017
WWDC Loan Amount:	\$	-	0.0%	Reversion Date:	2022

Funding Source #2: SRF

Amount: \$ 613,800.00 33.0%

Total Project Budget: \$ 1,860,000.00 100.0%

ENGINEERING

Engineer: 609 Consulting, LLC	Agreement Date:	Apr-15-2018
Design Fee:	\$	162,609.00
Construction Fee:	\$	969,312.35
Total Fee:	\$	1,131,921.35

CONSTRUCTION

Bid Opening Date:	Jan-29-2020	Number of Bids:	5
Low Bidder:	71 Construction	Range of Bids:	\$1.65M - \$2.37M
Engineer's Estimate:	\$ 1,319,250.00	Agreement Date:	Feb-14-2020
Contractor Amount:	\$ 1,457,290.00	Construction Time:	210 days

MISCELLANEOUS COSTS (Easements, Permits, Title Of Opinion, Title Search etc.)

Misc. Costs \$ 16,800.25

PROJECT CLOSEOUT

Final Project Cost:	\$	2,606,011.60	Date:	Jul-29-2021
WWDC Funding Share:	\$	1,138,415.23		
Other Funding Sources:	\$	560,711.99		
WWDC Reverted Funding:	\$	107,784.77		

PROJECT STATUS

This project is completed and closed out.



WYOMING WATER DEVELOPMENT COMMISSION
LEVEL III CONSTRUCTION REPORT



PROJECT: Wheatland ID Tunnel Dam Rehab **SPONSOR:** Wheatland Irrigation District

PROJECT DESCRIPTION: Resurfacing repairs and other repairs to the District's Tunnel Dam.

WWDC MANAGER: Larry Mallo

FUNDING

WWDC Appropriation:	\$ 6,058,452.79	WWDC Account:	II
WWDC Grant Amount:	\$ 4,059,163.37	Session Law:	2019, 2020, 2021
WWDC Loan Amount:	\$ 1,999,289.42	Reversion Date:	2024

Funding Source #2: Wheatland Irrigation District
Amount: Unknown

Total Project Budget: \$ 6,058,452.79

ENGINEERING

Engineer:	Wenck Associates	Agreement Date:	May-03-2019
Design Fee:	\$ 383,000.00		
Construction Fee:	\$ 395,148.00		
Total Fee:	\$ 778,148.00		

CONSTRUCTION

Bid Opening Date:	Jun-15-2020	Number of Bids:	5
Low Bidder:	Dietzler	Range of Bids:	\$5.3M to \$6.4M
Engineer's Estimate:	\$ 5,385,617.00	Agreement Date:	Jul-06-2020
Contractor Amount:	\$ 5,275,304.79	Construction Time:	243 days

MISCELLANEOUS COSTS (Easements, Permits, Title Of Opinion, Title Search etc.)

Misc. Costs

PROJECT CLOSEOUT

Final Project Cost:	\$ 6,058,452.79	Date:	03/01/2022
WWDC Funding Share:	\$ 6,058,452.79		
Other Funding Sources:	Unknown		
WWDC Reverted Funding:	\$ -		

PROJECT STATUS

There were additional costs (both eligible and ineligible) above those known to the WWDO. The District ultimately settled with the Engineer and the Contractor on the additional costs, and covered those costs out of their own funds. This project is completed and closed out.

**AMENDMENT NINE TO PROJECT AGREEMENT
GILLETTE MADISON PIPELINE PROJECT**

1. **Parties.** This Amendment is made and entered into by and between the State of Wyoming, acting by and through the WYOMING WATER DEVELOPMENT COMMISSION (COMMISSION), whose address is: 6920 Yellowtail Road, Cheyenne, WY 82002 and CITY OF GILLETTE, Campbell County, Wyoming, a duly organized municipality existing under the laws of that state (SPONSOR), whose address is: CITY OF GILLETTE, 201 East 5th Street, Gillette, WY 82716.
2. **Purpose of Amendment.** This Amendment shall constitute the ninth amendment to the Project Agreement between the COMMISSION and the SPONSOR. The purpose of this Amendment is to modify the PROJECT by extending the reversion date of unexpended PROJECT funds.

The original Project Agreement, dated September 3, 2009, was to implement the provisions of 2009 Wyo. Sess. Laws, Ch. 103, authorizing the design, groundwater exploration and drilling, permit procurement, PROJECT land procurement, construction engineering and construction of municipal wells, transmission pipeline, and pump stations.

Amendment One, dated July 29, 2010, was to implement the provisions of 2010 Wyo. Sess. Laws, Ch. 115, modifying the PROJECT by increasing the amount of the appropriation, providing for an appropriation, and changing the conditions for disbursing funds.

Amendment Two, dated August 18, 2011, was to implement the provisions of 2011 Wyo. Sess. Laws, Ch. 61, modifying the PROJECT by increasing the amount of the appropriation, providing for an appropriation, and changing the conditions for disbursing funds.

Amendment Three, dated August 22, 2012, was to implement the provisions of 2011 Wyo. Sess. Laws, Ch. 61 and 2012 Wyo. Sess. Laws, Chs. 26 and 27, modifying the PROJECT by increasing the amount of the appropriation, providing for an appropriation, and changing the conditions for disbursing funds.

Amendment Four, dated September 17, 2013, was to implement the provisions of 2013 Wyo. Sess. Laws, Ch. 156, modifying the PROJECT by increasing the amount of the appropriation, providing for an appropriation, and changing the conditions for disbursing funds.

Amendment Five, dated April 7, 2015, was to implement the provisions of 2014 Wyo. Sess. Laws, Ch. 26, modifying the PROJECT by increasing the amount of the appropriation, providing for an appropriation, and changing the conditions for disbursing funds.

Amendment Six, dated June 4, 2015, was to implement the provisions of 2015 Wyo. Sess. Laws. Ch. 142, redirecting unobligated or unexpended Abandoned Mine Lands funding to the PROJECT, increasing the amount of the appropriation, providing for an appropriation, changing the conditions for disbursing funds, and extending the reversion date of unexpended PROJECT funds.

Amendment Seven, dated July 1, 2017, was to extend the reversion date of unexpended PROJECT funds.

Amendment Eight, dated April 21, 2020, was to extend the reversion date of unexpended PROJECT funds, and change conditions for disbursing funds.

3. **Term of the Amendment.** This Amendment shall commence upon the date the last required signature is affixed hereto (Effective Date), and shall remain in full force and effect through the term of this Project Agreement, as amended, unless terminated at an earlier date pursuant to the provisions of the Project Agreement, or pursuant to federal or state statute, rule or regulation.

4. **Amendments.**

- A. **Reversion of Unexpended Funds.** The reversion date for unexpended funds as set forth in Section 4.U. of the original Project Agreement is hereby amended to read as follows:

“4.U. The SPONSOR agrees that it will complete the PROJECT and that it shall be responsible for operation and maintenance of the PROJECT in accordance with accepted engineering practices. The SPONSOR shall be responsible for all costs, including labor, for all operation, maintenance and repairs. In addition, the SPONSOR shall complete the PROJECT no later than the reversion date of July 1, 2024 and shall have settled all claims and paid all PROJECT expenses by that date. No funds will be paid by the COMMISSION after the reversion date specified and the SPONSOR shall be solely responsible for payment of any expenses incurred or claims received after said date.”

5. **Special Provisions.**

- A. **Same Terms and Conditions.** With the exception of items explicitly delineated in this Amendment, all terms and conditions of the original Project Agreement between the COMMISSION and the SPONSOR, including but not limited to sovereign immunity, shall remain unchanged and in full force and effect.
- B. **Counterparts.** This Amendment may be executed in counterparts. Each counterpart, when executed and delivered, shall be deemed an original and all counterparts together shall constitute one and the same Amendment. Delivery by

the SPONSOR of an originally signed counterpart of this Amendment by PDF shall be followed up immediately by delivery of the originally signed counterpart to the COMMISSION.

- C. **Return of Executed Amendment to Commission.** The SPONSOR shall not execute any agreements or incur any project costs that are covered under this Amendment until this Amendment is fully executed and returned to the COMMISSION.

6. **General Provisions.**

- A. **Entirety of Agreement.** The original Project Agreement, consisting of nine (9) pages; Amendment One, consisting of three (3) pages; Amendment Two, consisting of three (3) pages; Amendment Three, consisting of four (4) pages; Amendment Four, consisting of four (4) pages; Amendment Five, consisting of five (5) pages; Amendment Six, consisting of five (5) pages; Amendment Seven, consisting of three (3) pages; Amendment Eight, consisting of six (6) pages, and this Amendment Nine consisting of four (4) pages, represent the entire and integrated agreement between the parties and supersede all prior and contemporaneous negotiations, representations and agreements, whether written or oral.

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7. **Signatures.** The parties to this Amendment, through their duly authorized representatives, have executed this Amendment on the dates set out below, and certify that they have read, understood, and agreed to the terms and conditions of this Amendment.

The Effective Date of this Amendment is the date of the signature last affixed to this page.

WYOMING WATER DEVELOPMENT COMMISSION

Mark Kot, Chairman

Date

Liisa Anselmi-Dalton, Secretary

Date

CITY OF GILLETTE

Eric Hanson, Mayor

Date

Cindy Staskiewicz, City Clerk

Date

ATTORNEY GENERAL'S OFFICE: APPROVAL AS TO FORM

Megan Pope,
Senior Assistant Attorney General

Date

2022 WWDC/SWC MEETING SCHEDULE
(Revised January 2022)

<u>Date</u>	<u>Day</u>	<u>Program Item</u>
<u>JANUARY</u>		
January 25-26, 2022	Tues-Wed	WWDC Workshop/Meeting (Final Funding Recs, Review draft bills) (Cheyenne)
January 27, 2022	Thursday	Select Water Committee Meeting (Review draft bills) (Cheyenne)
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<u>MARCH</u>		
March 15, 2022	Tuesday	WWDC Workshop (Cheyenne)
March 16, 2022	Wednesday	WWDC Meeting (Election of Officers, Level I, II III, SWPP contract approval)
<hr/>		
<u>MAY</u>		
May 11, 2022	Wednesday	WWDC/SWC Workshop (Cheyenne)
May 12, 2022	Thursday	WWDC/SWC Joint Meeting, (New Level I & II Apps Review/Approval, SRF-IUP)
<hr/>		
<u>AUGUST</u>		
August 17-19, 2022	Wed-Friday	WWDC/SWC Workshop/Summer Tour/Meeting (Afton)
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<u>OCTOBER</u>		
October 3-5, 2022	Mon-Wed	Consultant Selection Interviews (Cheyenne)
October 6, 2022	Thursday	WWDC Meeting, Selection Approval (Cheyenne)
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<u>NOVEMBER</u>		
November 1, 2022	Tuesday	WWDC/SWC Workshop (Casper)
November 2-3, 2022	Wed-Thurs	WWDC/SWC Joint Meeting (Preliminary Funding Recs prior to WyoLeg) (Casper)
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DECEMBER

December 13-14, 2022	Tues-Wed	WWDC Workshop/Meeting – Review draft bills (Cheyenne)
December TBD, 2022	TBD	SWC – Review draft bills (Cheyenne)