New Fork River Gas Wells site River Restoration and Fish Habitat Improvement (Phase II)

A proposal to the Bureau of Reclamation's WaterSMART program Environmental Water Resources projects for Fiscal Year 2022

Notice of Funding Opportunity: R22AS00026

November 2022

Wyoming Game and Fish Department

5400 Bishop Blvd

Cheyenne, WY 82006

Project Managers: Paul Dey (307-777-4505), Luke Schultz (307-367-4353)

Email: paul.dey@wyo.gov, luke.schultz@wyo.gov

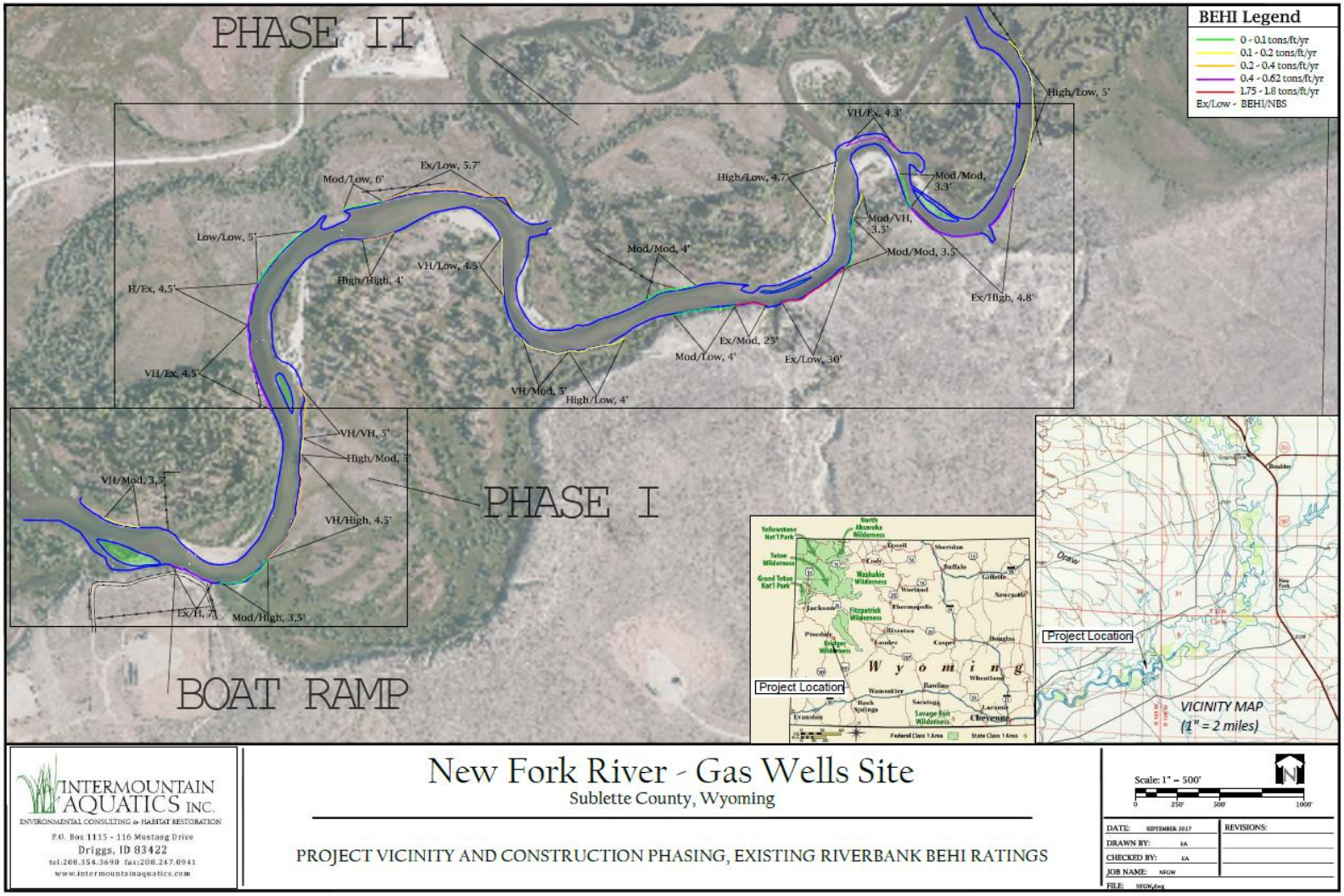
Table of Contents

Executive Summary

The Wyoming Game and Fish Department (Category A applicant), in cooperation with Trout Unlimited and the Bureau of Land Management – Pinedale Field Office is pursuing a 2-mile long river restoration on the New Fork River. The New Fork River is a focal conservation area and provides one of the most popular fishing waters in Wyoming and especially in the Pinedale region. Public Access is very limited in this ~40 mile section of the New Fork River, with less than ~15% of the river corridor occurring on publicly-managed lands. Furthermore, habitats in much of the river are degraded and limit fisheries, and high sediment contributions from bank instability impair stream function and input excess sediment into the downstream Fontenelle Reservoir. Ameliorating the degraded habitat conditions and improving stream function and floodplain connectivity in the Lower New Fork would be beneficial to many fishes, aquatic and riparian-obligate organisms, recreationists, and water users in the Upper Green River basin. Phase I of this project was completed in 2021 and included 0.6 miles of river restoration and the construction of a boat access area. Phase II will involve restoration on the remainder of the 2 miles of BLM-managed river and floodplain habitat, and will start either in fall 2022 or spring 2023. Bank stabilization and habitat restoration here will reduce erosion and sediment inputs by ~2,000 tons annually, restore riparian vegetation and natural wetland function, and improve holding cover and survival for adult trout. This project supports the Lower New Fork Riverscape Restoration Plan prepared by WGFD in 2020, and has incorporated stakeholder input and support from a variety of groups.

Project Location

Our work will occur on the New Fork River approximately 10 miles south of Boulder, WY, within Sublette County (Latitude: 42.671°, Longitude: -109.7764°; Map 1). This project is located within the New Fork River watershed, which is a focal watershed and river corridor identified in the Wyoming Game and Fish Department (WGFD) Statewide Habitat Plan (available at: https://wgfd.wyo.gov/Habitat/Habitat-Plans/Strategic-Habitat-Plan) and Wyoming State Wildlife Action Plan (available at: https://wgfd.wyo.gov/Habitat/Habitat-Plans/Wyoming-State-Wildlife-Action-Plan), as well as the locally-focused Lower New Fork Riverscape Restoration Plan. This watershed is located in the Upper Green River Basin of western Wyoming, and our work here will help implement these plans and will aid stream and riparian function, aquatic and terrestrial wildlife, and reduce sediment contributions in the watershed.



Map 1: Location and phasing for the New Fork River Gas Wells Habitat restoration.

Technical Project Description

The New Fork River is a focal conservation area and provides one of the most popular fishing waters in Wyoming and especially in the Pinedale region. Accordingly, angler pressure has increased considerably in recent years. Along its course from the Town of Pinedale to the confluence with the Green River, the New Fork River transitions from a relatively narrow stream with high quality habitat and trout numbers, to lower quality habitats with less trout in the relatively wide and shallow stream channel in its lower reaches. Downstream of Pinedale, the river does not fully support a coldwater fishery because of high sediment inputs from multiple sources and poor in-channel habitat conditions (over-widened and shallow) and water quality. In addition, bank instability throughout the Lower New Fork River, induced by a variety of causes, can contribute additional sediment and fails to provide quality riparian habitats and wetland function (Photo 1). Floodplain habitat conditions for riparian obligate terrestrial species has also deteriorated in the last century and a half. Ameliorating the degraded habitat conditions and improving stream function in the Lower New Fork would be beneficial to many fishes, in addition to other aquatic and riparian-obligate organisms. Stream conditions and restoration prospects are fully described in the Lower New Fork Riverscape Restoration Plan prepared by WGFD (2020).

The lower New Fork River passes through an area of high density natural gas fields downstream from the East Fork River confluence. Road density and traffic have increased considerably in the last 20 year concomitantly with the development of this field, and impacts from this development are noticeable on local hydrology and vegetation. Prior to ~2000, a boat access was located at an area known as the Gas Wells Site. This parcel includes ~2 miles of river channel and its associated floodplain and wetland habitat and is the largest piece of publicly (i.e., BLM)-managed land along the entire lower New Fork corridor. Due to extreme lateral instability and bank erosion, a boat ramp at the site eroded into the river as the channel migrated laterally in the last ~20 years.

The WGFD initiated a project several years ago to address these issues at the Gas Wells site. Project partners included the BLM – Pinedale Field Office and Trout Unlimited (TU; Upper Green River Chapter and the Green River Project Manager). Phase I of this project was constructed in spring 2021 to target the downstream ~0.6 miles of the area to enhance habitat conditions and re-establish the river access area. At this time, and access area with boat ramp was also constructed to improve user experience for recreationists, bird watchers, and anglers along the river corridor. Phase II will address river and floodplain functional deficiencies in the remaining 1.4 miles of the project area. All told, this work will improve conditions along 2 miles of river and over 300 acres of floodplain habitat and improve public access to the river for fishing and wildlife viewing opportunities.

Hydrological and habitat surveys and the conceptual design for this project have been completed by Intermountain Aquatics, Inc. (Driggs, ID) and includes 33 work areas (typically eroding banks) to be completed in two (or more) phases. Each phase involves hiring a contractor to complete stream restoration; WGFD will lead the contracting process with considerable input from BLM and TU partners. The first phase on the lower 0.6 miles of the project reach addressed lateral channel migration into the former boat ramp and parking area. Constructed elements included a new boat ramp, parking area, and additional access facilities (signage, pit toilets). Strategically placed j-hook and toe wood structures along with constructed point bars were used to stabilize the streambank along the boat ramp and provide current breaks for launching and removal of boats at

the site. This phase also involved fencing the entire project area to exclude trespass cattle, which will help recover riparian vegetation, stabilize streambanks, and improve wildlife habitat.

Photo 1: Eroding and sloughing stream banks like this one are common throughout the New Fork Gas Wells site. Restoration actions will target these areas.

The remaining phase(s) will complete habitat restoration to address project objectives in the remainder of the area. Proposed actions include the use of a combination of J-hooks, wetland sod mats, brush mattresses, toe wood, and bankfull benches to stabilize eroding banks throughout the project. The design also includes narrowing the channel with constructed point bars and using bank resloping to further stabilize streambanks in key locations. The reach will be resurveyed again in 2022 and performance of structures from 2021 construction will be used to update and finalize designs for this reach. These assessments and design modifications will be completed by the WGFD Aquatic Habitat Section. Where needed, riparian revegetation will be used to provide additional bank stability and enhance wildlife habitat; re-vegetation work with local conservation groups (e.g., Green River Chapter TU) will bring additional public engagement into this project and the broader effort across the New Fork. These actions are described in detail in the Environmental Assessment prepared by BLM.

We anticipate three broad outcomes of our work:

Outcome #1 – Stabilize stream banks throughout the Gas Wells reach, and prevent loss of lands due to lateral stream migration.

Objective # 1 - Decrease bank erosion so that channel migration is <1 foot annually.
-Installing toe wood (Photo 2) along the river bends will dissipate stream energy, maintain natural low rates of bank erosion and protect the newly developed parking area. Associated toe wood structures, bank re-sloping, and constructed point bars upstream and downstream will enhance channel stability.

Objective #2 - Reestablish functional condition of riparian vegetation within 5 years
-Riparian fencing will be used to exclude trespass cattle, and aid the recovery of riparian vegetation to further enhance channel stability.
-Transplanted live willows and willow cuttings will be incorporated into bank treatments and within the riparian area on constructed bankfull benches.
-Sod transplants and seeding will be used to reclaim disturbed areas along stream banks, and irrigation will be used to fully achieve revegetation and function.

Photo 2 – Toe wood provides bank protection and cover for fish until vegetation establishes.

Outcome #2 - Reduce sediment loading within and along 2 miles of the New Fork River.

Objective #1 - Reduce sediment inputs from project area streambanks by 90% (from ~2000 tons/year) within 3 years
-Engineered natural channel designs will address sediment from specific eroding banks throughout the project reach.

Objective #2 - Increase riparian-obligate plant community widths to at least 16' on all banks.
-Plantings and riparian fencing will be used in conjunction to reestablish and increase vegetative cover along channel margins.

Outcome #3 – Improved water retention in the floodplain of the New Fork River.

Objective #1 – Enhanced floodplain connectivity from reduced bank angles and constructed bankfull benches
By narrowing channel morphology and constructing bankfull benches with improved riparian vegetation, floodplains will activate at lower discharges to inundate these habitats. These floodwaters can replenish floodplain aquifers and slowly release the water to extend the hydrograph over a longer time period than in degraded systems. High quality riparian wetlands are also very valuable to fishes and terrestrial wildlife.

Our objectives include:
1) Stabilize lateral migration of the New Fork River into the parking area at the Gas Wells site,
2) Reduce the ~2000 tons annually sediment inputs by 90% across the entire ~2 mile reach,
3) Increase floodplain connectivity by narrowing the active channel and reducing bank heights and bank angles.
4) Improve trout habitat by increasing channel diversity and improving stability, and
5) Improve public access by constructing an access area at the former boat ramp site.

Through our approach, we will address components of Secretarial Orders 3347 (Conservation Stewardship and Outdoor Recreation), 3356 (Hunting, Fishing, Recreational shooting, and Wildlife Conservation Opportunities and Cooperation with States), and 3366 (Increasing Recreational Opportunities on Lands and Waters Managed by the U.S. Department of the Interior). Specifically for this funding opportunity, we will target the third focus area of "Watershed management or restoration projects benefitting ecological values that have a nexus to water resources or water resources management," including all of the sub-categories within the description (e.g., riparian and streambank restoration, decreasing erosion, floodplain connectivity and increasing channel structure and complexity). Funding will be necessary to hire a contractor to implement and construct the designs for the restoration.

Performance Measures

WGFD monitors fish and wildlife populations and habitat conditions and trends throughout the Pinedale region at regular intervals. WGFD along with BLM partners will use the Bank Assessment for Non-point source Consequence of Sediment (BANCS; Rosgen, 2006) model for pre- and post-project monitoring to evaluate sediment contributions; pre-construction conditions were collected by IMA during the initial assessment to inform designs. This model provides reliable estimates of annual lateral migration of stream banks along outside bends; when combined with bank heights simple calculations generate estimates of total sediment inputs. Pre-construction assessments were conducted for Phase I in 2016 and were repeated again in 2021, which suggested dramatic reductions in annual erosion rates (from ~1-3 feet to <0.3feet annually). Assessments for subsequent phases will be collected in 2022 to compare to post-construction.

Fixed monitoring locations for channel stability (cross-sections) have been established throughout the reach; monitoring at cross sections will be done in at least two different years following bankfull or higher flows to document stability and performance of constructed features and the stream channel. Lateral and vertical measurements will collected to document post-construction erosion rates. Corrective maintenance will be done to address instabilities revealed through monitoring.

This project will also assess biotic responses to restoration. Fish populations are monitored at fixed locations in the Pinedale region, and will be repeated at least once within four years after construction, to determine fish population response. Spot creel surveys will be conducted to evaluate angler use at the site, and determine if improving access diffuses pressure throughout the river corridor. Pre-construction macroinvertebrate samples have been collected and will be compared to repeated post-construction samples to evaluate response of these benthic organisms to restoration. These efforts are being coordinated with the Sublette County Conservation District, which has an extensive invertebrate sampling dataset from throughout the New Fork River that provides control data.

Evaluation Criteria

Project Benefits

This project will produce clear ecological benefits to the fish, wildlife and habitats of Western Wyoming. As the New Fork River meanders out of the mountains and through the shrub-steppe habitats of the Upper Green River Basin, the riparian "ribbon of green" that winds through the arid landscape is often the only surface water for miles, and the wetland habitats in its floodplain are some of the only mesic sites for wetland obligate species. Because so much of this habitat along the New Fork River is degraded, providing habitat lift for even this relatively small project (2 miles) has a huge capacity overall for improving this corridor. Moose, amphibians, and waterfowl use the corridor year round, and it has seasonal benefits to sage grouse for early brood rearing and pronghorn and mule deer as they migrate through the project site. The upstream end of the project reach is less than a mile from a known sage grouse lek, so improvements to the habitat will directly benefit those broods that move the short distance to take advantage of the increased productivity in the floodplain. These effects are particularly pronounced in drought years.

Aquatic wildlife stands to benefits greatly from this project. Improved vigor of riparian wetlands, streambank vegetation and floodplain cottonwood galleries boosts terrestrial subsidies to aquatic

organisms and can fuel growth in local fish populations. Reducing erosion to the river also prevents sediment from choking out spawning areas and benthic macroinvertebrate production hotspots, increasing recruitment and improving growth. Developing alcove and backwater habitats helps survival of young fishes, and narrowing and deepening the main channel, along with the addition of cover in the form of toe wood and streambank vegetation, increases survival and holding cover for adult fishes. Adult habitat in particular is lacking in the over-widened New Fork River currently. Lastly, floodplain wetlands improved by this project provide valuable habitat for migrating and breeding waterfowl.

Four stage river channels will be constructed throughout the project reach that include floodplain terraces, a floodplain above bankfull, a bankfull channel and a low flow or inner berm channel. The inner berm channel is particularly important for promoting drought resiliency in the river. By clearly defining the inner berm ("channel within the channel"), fish habitat is boosted even during low flow periods. This feature allows the reach to support a greater population of fish despite seasonal low flows that are anticipated with climate change. The inner berm channel is also critical for sediment transport through the reach and to minimize aggradation of sediment sourced from upstream.

Restoring functioning floodplain and hydrologic connectivity stores water as alluvial groundwater and also boosts forage productivity to the river habitats downstream, which benefits livestock producers in addition to wildlife. By lowering banks, floodplain wetlands are naturally wetted by spring flows, and less irrigation water is necessary to produce the same forage biomass. Improved functioning wetlands downstream of this project as a result of improved floodwater access also represent forage banks that ranchers can utilize during drought years, without the need to develop extra water diversion infrastructure.

River use has increased considerably in recent years, and demographic changes in the West suggest that these trends will continue. The development of a boat ramp and access area in the first phase of this project is a great benefit to these users. Improving habitat further increases the value of this area to consumptive and non-consumptive users alike. Indirectly, the river access also aids river health by concentrating use in a single spot and preventing user-developed access points and river launches.

Collaborative Project Planning

This project is supported and detailed in the Lower New Fork Riverscape Restoration Plan which was prepared by WGFD in conjunction with Trout Unlimited and the US Fish and Wildlife Service's Partners for Fish and Wildlife program. The plan represents several years of planning and discussions with multiple agency and private landowner stakeholders to map out about 2 decades of restoration strategies and projects on the New Fork River to address identified ecosystem function maladies. The New Fork Gas Wells Habitat Restoration is one of the centerpiece projects in the plan.

Within the New Fork Gas Wells Habitat Restoration itself, WGFD has worked closely with TU and the Bureau of Land Management – Pinedale Field Office to develop and coordinate the project's activities. The BLM led the NEPA process to bring additional public engagement into this effort; these efforts are described in detail in the Environmental Assessment (here) prepared by BLM. Neighboring landowners were also engaged in the planning for this project and are in

support of our efforts. These landowners include Jensen Ranches and John Scott, who have also provided input into the planning process.

Stakeholder Support

This project is supported by a diverse set of stakeholders including state, federal, and county agencies, non-government organizations, and adjacent private landowners. Wyoming Game and Fish is joined by the Pinedale Field office of BLM, Wyoming Trout Unlimited (TU), and the Sublette County Conservation District in the planning and monitoring of this work. Local angling groups (i.e., Upper Green River chapter of TU) are also very excited about the project and we have heard excellent feedback from recreational users about the initial phase of this work. Although the work will entirely occur on federal lands, the project stands to benefit landowners upstream and downstream. Furthermore, our river access work here connects similar river restoration work upstream and downstream of the project so that river users can enjoy these improvements. Funding partners include the Wyoming Game & Fish Habitat Trust Fund, the Wyoming Wildlife and Natural Resource Trust, The Wyoming Department of Environmental Quality Section 319 (non-point source pollution) Task Force, the Central Utah Project Completion Act Office, the Jonah Interagency Office, Wyoming Landscape Conservation Initiative, BLM watershed sources, and the Wyoming Governor's Big Game License Coalition. The federal Wallop-Breaux boating access fund was used to complete aspects of Phase I that dealt with the boat ramp and parking area.

Readiness to Proceed

Following completion of phase 2 designs for this project in summer 2022, we will submit Army Corps of Engineers and Wyoming Department of Environmental Quality permitting applications in the winter of 2022/23 in preparation for initiating construction in late 2023 or early 2024. Phase 2 designs will be relatively straightforward because a design set has already been completed for the entire reach but the Phase 2 reach work is being adjusted based on what was learned from Phase 1 work. NEPA approval has been completed by the BLM in 2019. Our timeline is:

2015-16 – Site assessment and designs performed by Intermountain Aquatics
2017 – Planning, NEPA documentation development, project fundraising
2018 – Planning and working with BLM to develop NEPA
2019 – Environmental Assessment completed, coordination with BLM, materials mobilized, designs revised, permitting initiated, BLM completed riparian exclosure fencing on western property boundaries at site
2020 – Contracting led by WGFD with considerable help from BLM, material mobilization by WGFD and the hired contractor (Aqua Terra Restoration, LLC)
2021 – Implementation and evaluation of Phase I, WGFD supervised contractor for project implementation, fundraising for Phase II.
2022 – Post-runoff evaluation of structures following two runoff events; design revisions based on in-stream performance. Evaluations of the biotic community's response post-construction. Invertebrate and fisheries monitoring will be led by Sublette County Conservation District and WGFD, respectively. Fundraising and project planning for Phase II.
2022 or early 2023 – Materials for Phase II construction will be mobilized to the site including rock, root wads, and woody slash.
Late 2023 or early 2024 –Anticipated construction of Phase II to complete restoration on the remaining 1.4 miles of river/floodplain, evaluation of habitat structures and stream geomorphology, fisheries, and benthic macroinvertebrates following construction.

Performance Measures

As mentioned above, WGFD will be the lead agency in evaluating the project. Several metrics will be used to assess effectiveness in terms of physical, biological, and social benefits. Specifically, the Bank Assessment for Non-point source Consequence of Sediment (BANCS; Rosgen, 2006) model will be used to quantify pre- and post-project sediment contributions. This model provides reliable estimates of annual lateral migration of stream banks along outside bends; when combined with bank heights simple calculations generate estimates of total sediment inputs in cubic yards or tons. Fixed monitoring locations for channel stability (cross-sections) throughout the reach will be informative for evaluating changes to habitat quality and to assess structure performance. This project will also assess biotic responses to restoration in terms of fish populations, benthic macroinvertebrates, and river user experience.

Presidential/DOI Priorities

Following Executive Order 14008, this project increases the resiliency of the New Fork River to climate change by increasing riparian cover along the stream bank and constructing inner berm/low flow channels that provide habitat during drought conditions. Narrowed river channels not only more effectively move sediment but they decrease evaporative demand and water loss. Likewise, increased floodplain connectivity enhances storage of water in floodplain aquifers where it is less prone to evaporative loss and where it is released slowly to enhance late season flows. Long term, we anticipate in-stream structures (e.g., toe wood) to last 30-50 years, and once riparian vegetation re-establishes, changes to the stream should last indefinitely.

This project will conserve and restore healthy lands and soils. Vigorous wetland and floodplain vegetation also provide natural fire breaks and reduce the likelihood of catastrophic wildfire in this arid landscape. Well-functioning wetlands also sequester carbon in vegetation and organic matter deposits in deep hydric soils.

Project Budget

Design and Planning		**Total**	**Notes**
WGFD Trust Fund		$ 27,000	Intermountain Aquatic designs
BLM		$ 10,000	boundary/archeological survey
WGFD Trust Fund		$ 5,000	Wetland delineation
Trout Unlimited		$ 2,000	in-kind project management
Wyoming Game and Fish		$ 10,000	in-kind project management
	Total	**$ 54,000**	
Implementation - phase I (lower ~2/3 mile of stream restoration and boat access area)			
River Restoration (rock placement, toe wood, revegetation)		$ 345,000	
Boat Ramp and parking area		$ 42,000	
Construction costs (mobilization, management, contingency)		$ 54,000	
	Total	**$441,000**	**Completed May 2021**
Implementation - Phase II (remainder of the ~2 miles)			
Vegetation planting, brush mattresses		$ 20,000	
Bank shaping, channel narrowing		$ 125,000	
Toe wood, j-hook structures		$ 330,000	
Construct island		$ 50,000	
Construction costs (mobilization, management, contingencies)		$ 50,000	
Monitoring, project Management (for ~10 years post-implementation)		$ 30,000	
	Total	**$ 605,000**	**Total cost for this phase**
	GRAND TOTAL (all phases)	**$ 1,100,000**	

BOR WaterSMART Request: $100,000.00

Secured Cash Funding		**Contribution**	**Notes**
Jonah Interagency Office		$ 85,000	Spring 2019 award
WGFD Trust Fund		$ 41,147	2017 award (design)
WWNRT		$130,000	2020 award
WY Governors' Big Game License Coalition		$ 20,000	2020 award
*WY DEQ 319 funds – multiple awards		$ 226,845	'18, '19, '20, and '21 awards
*Wallop-Breaux Access		$210,000	2020 award
*Central Utah Project Completion Act Office		$ 83,700	2020 award
*BLM watershed sources		$ 97,000	2019, 21 awards
	Subtotal	**$893,692**	
**Federal Funding Source*			
In-Kind Contributions			
BLM (project admin)		$ 10,000	
WGFD H&A (heavy equipment time)		$ 50,000	
WGFD in-kind (planning, assessment, design, monitoring)		$ 25,000	
WGFD Wood, Slash, Rock contributions		$ 10,000	
Trout Unlimited (project support)		$ 2,000	
WYDOT Slash Donation		$ 10,000	
Remaining expenses to acquire			
Other cash/in-kind TBD (WWNRT, BLM Salinity Control, etc.)		$199,000	Multiple apps submitted and to be submitted

Budget Narrative

We are requesting funding in the amount of **$100,000.00** for completion of the remaining phase(s) of this work. Including the work completed in Phase I, we estimate the total project cost to be $1,100,000.00 include design, construction, and in-kind project management costs. Of this, we anticipate **$605,000.00** in construction costs to complete the remaining 1.4 miles of river restoration. Of these costs, the vast majority will be used to hire a contractor to complete construction of the project, but many steps will be taken to reduce the overall cost of this work and maximize its cost efficiency. These include acquiring and mobilizing materials to the site ourselves, and utilizing in-house heavy equipment crews to complete project components. Construction costs were estimated by the design engineers, and involved evaluating costs of projects with similar scope to make a reasonable assessment of cost. Typically, in a river the size of the New Fork, construction costs are in the $75-135 per foot range, depending on complexity of the work and material costs. However actual bids might come in above or below the estimates, and we will seek numerous alternatives to reduce final costs while still constructing a quality project.

During planning and Phase I of construction, several costs were incurred: a total of **$41,147.00** was expended to complete final designs for Phase I, conceptual designs for the remaining phases, and wetland delineations to aid in permitting. An additional **$391,567.00** was expended for the construction of Phase I (as of November 10, 2021). However, all expenditures for Phase II will be incurred after all funds have been secured.

Non-federal cost share on this project are available from a variety of secured and future sources. Secured sources are listed in the project budget above and include the Wyoming Governor's Big Game License Coalition ($20,000 secured), the Jonah Interagency Office ($85,000 secured), the Wyoming Wildlife and Natural Resource Trust ($130,000 secured in 2020), and the WGFD Habitat Trust Fund ($41,147 secured 2016-18). Some of these funds were expended in the initial phase of the project, but all sources are available for additional asks in the coming years and we are already anticipating asks for the second phase.

Several federal sources are also secured to help fund the remaining phases of this work including the Wyoming DEQ 319 (Non-Point Source Pollution) Task Force ($226,845 over 2018-21 funding cycles), the Central Utah Project Completion Act Office (83,700 awarded in 2021), the Wallop-Breaux boating access fund ($210,000 awarded in 2021; used for construction of the access area), and multiple BLM sources (totaling $97,000).

Personnel costs, fringe benefits, agency employee travel and equipment are included as in-kind expenses. Several WGFD, TU, and BLM employees will work collaboratively to complete planning, NEPA documentation, implementation, and post project monitoring. These contributions will be in-kind from each of the organizations however, BOR WaterSMART funds requested here will not be used to hire (or pay) any agency personnel to complete the project.

Materials and supplies for completing in-stream work will be acquired utilizing local networks to acquire otherwise disposed of wood and rock. These include using excavated willows from agricultural ditch maintenance, excavated rock from roadway and right-of-way improvements, and root wads and trees from recent storms that resulted in accumulated blowdowns.

All costs associated with Phase II of this project are anticipated to be contractual expenses, which might include hiring trucking companies to mobilize material to the site, renting equipment to perform in-stream and riparian construction, or hiring a contractor to construct any or all components of the remaining river restoration. Details of how these tasks will be completed are currently uncertain and will depend on billing rates of contractors in 2022 or 2023, fuel costs to perform project components in house, and total funding available. Design revisions have been used in other projects, and might be considered here, if project bids for construction are above estimated project costs. For instance, in other projects we have revised project designs from including soil lifts to including brush bank treatments or other cost effective techniques. Because of this, we do not provide a breakdown of individual costs, but rather use estimated costs from similar work.

All environmental and regulatory compliance costs will be handled by Wyoming Game and Fish personnel during the permitting of this project. These costs might include in-kind wetland delineations, permitting letters, and any costs associated with acquiring the permits.

Environmental and Cultural Resources Compliance

The project will involve earth-disturbances to rebuild and adjust stream pattern, dimension and profile. In some cases this will involve excavating the stream channel to restore dimension and in other cases it will involve filling to narrow the channel and promote habitat quality and sediment transport. Outside of the channel, small depressional wetlands will be created to generate additional fill and increase total wetland areas in the floodplain. While these techniques result in some temporary disturbance to riparian wetlands, the modified channel dimensions and depressional wetland features will result in a substantial net gain in wetland acres in the project reach – likely 1-4 total acres of enhanced and new wetland areas.

No threatened or endangered species occur in the project area, and the BLM's environmental assessment outlines and describes mitigation efforts to minimize impacts to sensitive wildlife species. Similarly, archeological surveys have been conducted throughout the Gas Wells site and the EA states that no significant buildings or sites are present or will be disturbed with this work.

The project is not known to have any adverse effects on low income or minority populations. It also does not limit access to ceremonial sacred sites or have any other impacts on tribal lands.

We have developed an invasive species management plan in conjunction with this project to limit the spread of noxious weeds during construction and also to chemically or physically remove these species should they establish following the project.

Required Permits or Approvals

This project will require approval from the US Army Corps of Engineers and the Wyoming Department of Environmental Quality for completion; we plan to submit these permitting letters in Winter 2022/23 to obtain approval approximately 6 months before the project will begin. WGFD has a solid track record of completing these permits and anticipates a smooth process again with this application.

Letters of Project Support

WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006
Phone: (307) 777-4600 Fax: (307) 777-4699
wgfd.wyo.gov

November 29, 2021

Bureau of Reclamation
Attn: Mr. Josh German and/or Ms. Robin Graber
P.O. Box 25007, MS 86-69200
Denver, CO 80225

RE: WaterSMART: Environmental Water Resources Projects for Fiscal Year 2022 (R22AS00026)

To whom it may concern,

The Wyoming Game and Fish Commission (Commission), by and through the Wyoming Game and Fish Department (Department) is a State government entity with the authority and capability to enter into agreements for Federal assistance. If this project is awarded, the Department commits to adhering to the financial and legal obligations associated with the receipt of federal financial assistance including coordinating with the Bureau of Reclamation to meet established deadlines identified in the grant or cooperative agreement.

Officials authorized to sign agreements on behalf of the Commission and Department include:

- Brian R. Nesvik, Director
- John Kennedy, Deputy Director
- Meredith Wood, Chief Fiscal Officer

Employees authorized to submit and approve federal assistance documents for this project include:

- Casi Crites, Grant Section Supervisor
- Ryan Mueller, Grant Analyst

The New Fork Gas Wells River Restoration project is a multi-faceted project with significant support from the Department and partners including: U.S. Fish and Wildlife Service; Bureau of Land Management; Wyoming Department of Environmental Quality; Wyoming Wildlife Natural Resources Trust; Trout Unlimited; Wyoming Landscape Conservation Initiative; Wyoming Governor's Big Game License Coalition; and other private entities. As outlined in the application, the Department is confident in our ability to satisfy a 25% non-Federal cost share requirement.

If you have any questions or concerns, please contact me at 307-777-4618 or by email at Meredith.Wood@wyo.gov.

Sincerely,

Meredith Wood
Chief Fiscal Officer

December 6, 2021

Bureau of Reclamation
Financial Assistance Operations
P.O. Box 25007, MS 84-27815
Denver, CO 80225

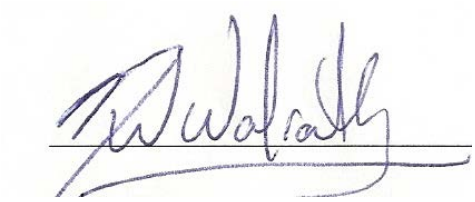
RE: WaterSMART Environmental Water Resources Program Grant

I am writing to express my support of the Wyoming Game and Fish Department's (WGFD) proposal for WaterSMART grant funding for the *New Fork Gas Wells Project*. Trout Unlimited is in full support of the project and is an active project partner of the project.

The projects objectives of sediment reduction, habitat improvement, and eliminating the need for a push up irrigation diversion are in line with Trout Unlimited's mission: To conserve, protect, and restore North America's coldwater fisheries and their watersheds.

TU has been project partners with the WGFD and others on many competed successful projects in the Upper Green River basin and on the New Fork River. This project will add to the already impressive list of projects.

If Reclamation chooses to fund this grant, TU will continue to collaborate with WGFD on finalizing project designs, completing construction and post project monitoring.



Nick Walrath
Green River Project Manager
Trout Unlimited
520 Wilkes Dr. 3A
Green River, WY 82935