

WaterSMART Cooperative Watershed Management Program Phase I Grants

Funding Opportunity Announcement No. BOR-DO-19-F010

A Collaborative Effort Among Partners to Address Sediment Contributions to
the Shoshone River



November 13, 2019

Applicant and Project Manager:

Powell-Clarks Fork Conservation District (PCFCD)

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EXECUTIVE SUMMARY

Date of Submission: November 13, 2019

Applicant: Powell-Clarks Fork Conservation District, Powell, Park County WY (Working Group #3 committee member)

Location of Project: Sub-watersheds of the Shoshone Watershed HUC 8, Park County WY

Length of Project: Two years beginning approximately May 1, 2020

Estimated Completion Date: April 30, 2022

In 2016, due to a large sediment release from the Willwood Dam on the Shoshone River in northwestern Wyoming, thousands of fish were killed. The Wyoming Department of Environmental Quality (DEQ) initiated three working groups to find solutions and try and prevent further sediment releases from the dam. Working group #3 (WG3) focused on reducing the volume of sediment that accumulates at Willwood Dam through implementation of voluntary best management practices (BMPs) designed to reduce the introduction of sediment into the Shoshone River above the Willwood Dam. WG3 spent nearly three years developing a Watershed Plan to identify potential sources of sediment entering tributaries of the Shoshone River and overall implementation recommendations, conducted some preliminary monitoring at various locations within the watershed, and provided outreach through tours and workshops to landowners, homeowners and stakeholders within the Shoshone watershed. After the completion of two planning documents: *Working together to Protect the Shoshone River* (<https://arcg.is/0PmPvS>) and the *Sediment Watershed Plan for the Shoshone River from Buffalo Bill Reservoir to Willwood Dam*, referred to herein as Watershed Report (<https://arcg.is/1ymq19>), WG3 narrowed down watersheds that, based on initial monitoring results and known potential sediment contributors, indicated the largest amounts of sediment contributions to the Shoshone River.

This proposal is the next step for WG3 to carry out the goals outlined in the Watershed Plan, with a focus on the watersheds the group listed as highest priorities for potential sediment contributions; Sulphur Creek, Sage Creek and a portion of the main stem of the Shoshone River. WG3 would like to gather more information from these areas, work with stakeholders to determine projects that would reduce the amount of sediment coming from these areas, and expand on education and outreach.

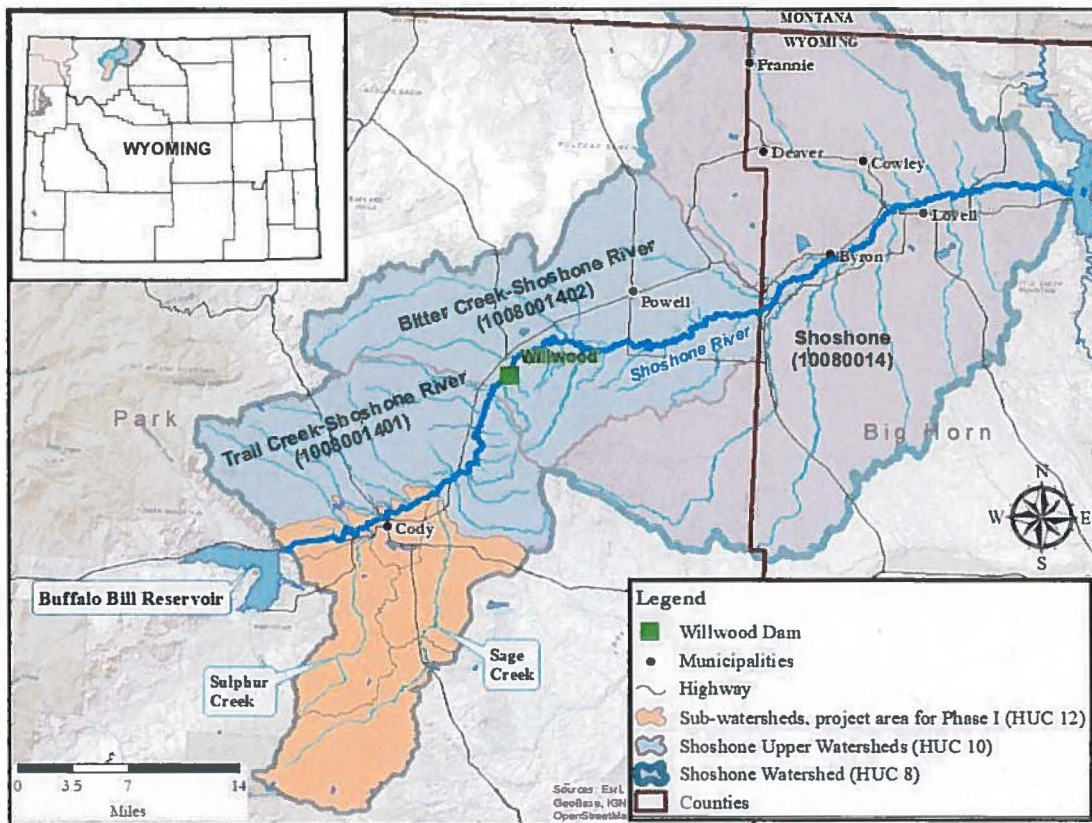
Although WG3 consists of stakeholders across a broad spectrum of disciplines and backgrounds, the group lacks staffing to carry out the intent of the Watershed Report. As an integral part of WG3, it was agreed that the Powell-Clarks Fork Conservation District would continue to lead local efforts to garner public awareness and support for implementing components of the Watershed Report. This includes housing staff necessary to implement the proposed project.

This proposed project contributes to accomplish the goals of this Funding Opportunity Announcement (FOA) by 1) continuing to implement watershed goals of an Existing Watershed Group, 2) promoting water reliability and cooperation between stakeholders to reduce conflict, 3)

facilitating solutions to complex water issues and 4) developing plans that promote conservation stewardship.

This proposed project will not be located on a Federal facility.

BACKGROUND DATA



Watershed Description - WG3 was tasked with identifying sources of sediment contributing to the Shoshone River upstream of the Willwood Dam to Buffalo Bill Reservoir. The Willwood Dam falls within the Bitter Creek - Shoshone River Watershed HUC 10 (1008001402) and receives water from the upstream Trail Creek - Shoshone River Watershed HUC 10 (1008001401). 16 Individual sub-watersheds (primarily 12 digit HUC size) were evaluated from the Willwood Dam to Buffalo Bill Reservoir and were presented in the Watershed Report. Four 12 Digit HUC watersheds were chosen for this project based on known land uses and preliminary monitoring results indicating high contributions of sediment coming from watersheds, which are shown on the corresponding map in orange.

The overall acreage of the project area is 109,894 acres and is primarily privately owned with parcels of Bureau of Land Management and State lands intermixed.

Source of Water supply - The Shoshone River is a perennial river that originates at the confluence of the North Fork Shoshone and South Fork Shoshone Rivers at the Buffalo Bill Reservoir. From Buffalo Bill Reservoir to Willwood Dam (approximately 24 miles downstream), flows in the Shoshone River are regulated by releases from Buffalo Bill Reservoir. The Shoshone River also receives irrigation return flows from the Lakeview, Cody, and Heart Mountain Canals. Irrigation water is withdrawn from the Shoshone River for the Shoshone Irrigation District and the Willwood Irrigation District.

Water rights involved and Length of existence - All of the water rights on the Shoshone River, Sulphur and Sage Creeks are defined by Wyoming Water Right certificates.

Shoshone River - The Buffalo Bill Reservoir has State permit #492R and a Priority date of March 5, 1904. The Reservoir was completed in 1910 and releases water into the Shoshone River. The City of Cody uses the Shoshone River for its water supply and has State permit #5241 and a Priority date of April 18, 1903. There are also a number of private wells in the area that deliver water to individuals as well as subdivisions and businesses.

Sulphur Creek - Two irrigation canals have water releases into Sulphur Creek; Lakeview Canal and the Cody Canal. In the upper reaches of the watershed, above where the canals discharge into, Sulphur Creek is generally ephemeral and under natural conditions only receives flow in response to snowmelt and rainfall. The Lakeview Canal which provides water to the Sulphur Creek watershed has State permit #3000-10512 and a Priority date of December 31, 1900. The Lakeview Irrigation District has been in operation since 1900, with water rights to irrigate 9,425 acres. On average, 142 to 161 cfs (cubic feet per second) are diverted from the South Fork Shoshone River to supply irrigation water to the Lakeview Irrigation District. Water is diverted approximately 16.2 miles upstream of Buffalo Bill Reservoir and travels through 28-miles of open dirt ditch before terminating into an unnamed ephemeral tributary that flows into Sulphur Creek. This termination adds between 5 and 20 cfs of water into Sulphur Creek during the irrigation season.

The Cody Canal has an irrigation water release or spill, into Sulphur Creek that is used to regulate water levels in the Canal. The Cody Canal has State permit #1042 and a Priority date of August 7, 1895 and releases around 15 cfs into Sulphur Creek during the irrigation season.

Sage Creek - During the irrigation season, Sage Creek is used to convey water for the Cody Canal to water users in the Sage Creek and Dry/ Homesteader Creek watersheds. The Cody canal releases 15 to 20 cfs into Sage Creek at the Canal crossing and then withdraws between 30 and 40 cfs at the Ross Lateral head gate, which is located immediately downstream of Highway 14. Spring Creek, a tributary to Sage Creek, is also used as an emergency spill to regulate water levels in the Cody Canal. Sage Creek also receives irrigation return flows from Cody canal laterals, field pipes, ephemeral draws, and in the form of springs that are charged by irrigation return flows.

Current water uses

Shoshone River - The land uses in this portion of the watershed include the industrial and residential development within the City of Cody, irrigated cropland and pasture, grazing, modification of the river channel, and recreation.

1. Approximately 3,864 acres of the watershed is occupied by the City of Cody footprint. Industrial developments include an active CertainTeed Gypsum processing plant and the reclaimed Husky Refinery. The Husky Refinery occupied a footprint of 276 acres in the watershed from 1938 to the 1980's, and the southern border of the refinery is located along the banks of the Shoshone River. The refinery also had a channel spanning water diversion structure, which has not been fully reclaimed.
2. The Cody canal provides 44 million gallons of water a month to the City of Cody during irrigation season (April to October). The Cody Canal also picks up storm water runoff and sediment from the Red Lake area and City streets (16th to 23rd Streets).
3. Irrigated cropland is prevalent throughout this portion Shoshone making up 23% of the land use in the watershed.
4. The River corridor has also been directly altered by the construction of the historic water treatment ponds, a City dump, and the Husky Refinery. The historic water treatment ponds represent the most significant channel alteration within this section of the Shoshone River.
5. Aquatic recreation is very popular in this section of the river. Commercially guided rafting trips occur daily during the summer months and private kayaking and rafting and fishing occur throughout the year. This section of the Shoshone River provides between \$19.4 and \$35.2 million dollars in economic benefits to Park County.

Sulphur Creek - The land uses in the watershed include range improvement and livestock grazing, irrigated pasture land, oil and gas development, mining, rural and urban development, and recreation.

1. Livestock grazing has been a major resource-use activity on public, state, and private lands with the Sulphur Creek watershed over the last 100 years. In support of grazing and agricultural development, livestock reservoirs and irrigation systems have been developed.
2. Oil and gas development, the Half Moon oil field, occurs on several hundred acres in the upper half of the watershed.
3. Gypsum mining was conducted on 200 acres by Celotex/ CertainTeed Gypsum from the 1970s to the 1990s. The gypsum mine footprint is considered to be fully reclaimed. Bentonite mining was conducted by American Colloid in the 1980s on approximately 44 acres. These bentonite mined areas were reclaimed according to the standards of the time period; however, the reclamation would be considered poor by today's reclamation standards.
4. Rural and urban development occur in the lower half of the Sulphur Creek watershed. The lower third of the watershed falls within the City of Cody footprint and contains residential subdivisions and industrial development, along with paved roads and storm drains.

5. The extensive amount of public lands makes this watershed very popular for hunting, hiking, and off-highway vehicle use.

Sage Creek - Land uses within the Sage Creek watershed vary greatly between the Upper and Lower sub-watershed.

1. Land uses within the Upper Sage Creek watershed include livestock grazing and irrigated pasture land, oil and gas development, and recreation.
2. Irrigated pasture land is prevalent in the Lower Sage Creek watershed. Other land uses include livestock grazing, small acreage subdivisions, the City of Cody and the City of Cody landfill, and a gravel mine.

Water issues faced in the affected watershed

In 2007 and 2016, large quantities of sediment were released that resulted in fish kills, loss of aquatic invertebrates, the release of tires and other trash, and deposition of large amounts of sediment downstream. In 2007, a malfunction in the Willwood Dam caused a large sediment plume to be released, killing thousands of fish. In 2016, Willwood Irrigation District (WID) conducted scheduled and required maintenance on the penstock and canal gates on Willwood Dam. When the water levels were lowered for repairs, 96,000 cubic yards or 6,857 dump truck loads of very fine sand and silt were released downstream of the dam. Additional repairs are going to be necessary in the next five to ten years, which will require the sluicing or dredging of 360,000 cubic yards of sediment.

Aquatic wildlife in the watershed is diverse, and its management and conservation are important to the overall quality of the environment and life within the basin. The Shoshone River and its tributaries within the Willwood watershed are cool water fisheries that support Yellowstone cutthroat trout, brown trout, rainbow trout, and Snake River cutthroat trout. With the sediment releases choking the River, there has been great concern by stakeholders in the watershed, residents and fishing businesses within the City of Cody and surrounding areas, that the fish population in the Shoshone is at risk.

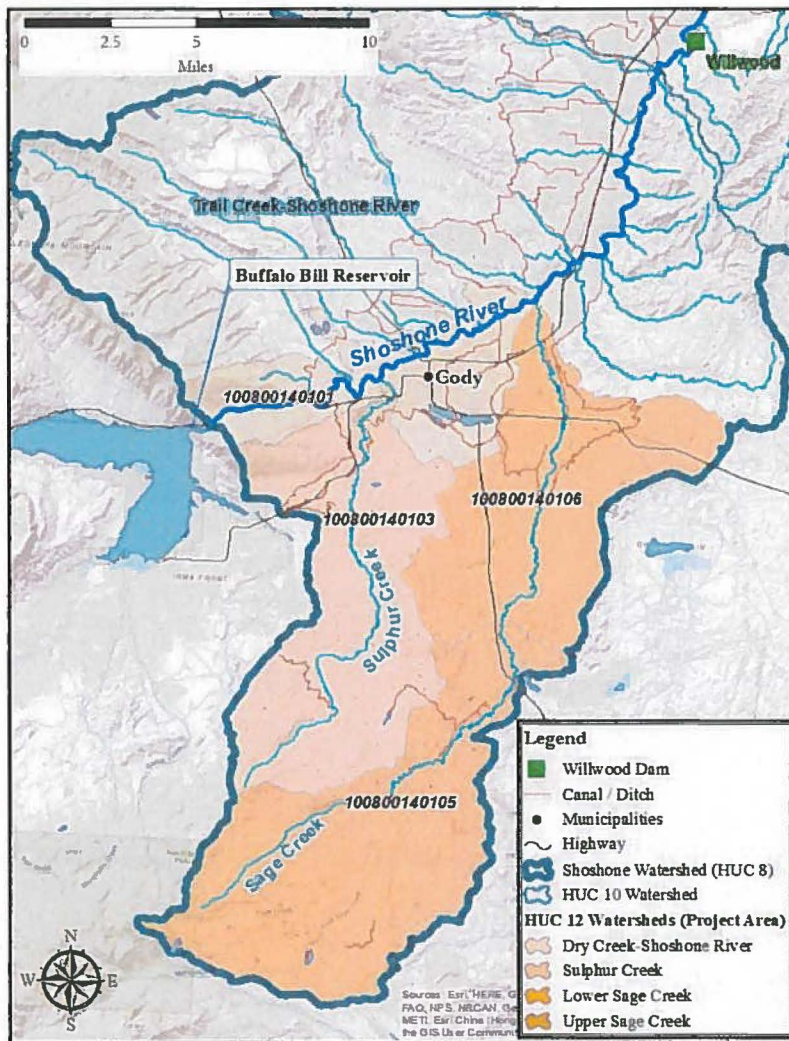
Irrigation water management is also an issue facing the affected watershed. Irrigation water and the ability to manage irrigation flow is vital to the agriculture economy. The irrigation districts in the area are dealing with aging infrastructure and an increasing number of irrigation users. There are approximately 3660 Irrigated acres in the project area which is a vital component to the economy of Park County.

Past working relationships with Reclamation

The Bureau of Reclamation (BOR) is part of the Executive Committee that oversees the three different working groups as described in the below "Applicant Category Section." BOR is actively involved in working group 2 and presented at a June 2017 watershed field tour. The Executive Committee has been supportive of WG3's two planning documents.

PROJECT LOCATION

The geographic location of this project area consists of three full 12 digit HUCs and one partial 12 digit HUC (Dry Creek - Shoshone River has been condensed to not include Dry Creek but just the Shoshone River). The project area is located in Park County, Wyoming and encompasses the municipality of Cody, Wyoming (population 9,985).



The Sulphur Creek watershed is approximately 30,164 acres and flows into the Shoshone River approximately 17.3 miles upstream of Willwood Dam. Sulphur Creek receives irrigation return flows from both the Lakeview Irrigation Canal and the Cody Canal, which originate on the South Fork Shoshone River. Sulphur Creek is approximately 19.5 miles long and flows north northwest from the headwaters to the confluence with the Shoshone River.

The Sage Creek watershed is comprised of 63,447 acres (Upper Sage Creek is 36,440 acres and Lower Sage Creek is 27,007 acres) and flows into the Shoshone River 11.5 miles upstream of Willwood Dam. Sage Creek is a perennial stream that flows into the Shoshone River from the South and approximately 34 miles

long. Lower Sage Creek receives irrigation conveyance water and irrigation return flows from the Cody Canal. The sub-watershed also receives water from stormwater runoff from the City of Cody.

The condensed Dry Creek- Shoshone River watershed is comprised of 16,283 acres and includes the Shoshone River itself, City of Cody footprint, an unnamed tributary and upland areas where overland water flow drains directly into the Shoshone River. The watershed is approximately 11.5 miles upstream of the Willwood Dam.

TECHNICAL PROJECT DESCRIPTION

APPLICANT CATEGORY

WG3 is seeking funding as an Existing Watershed Group. In response to the 2016 sediment release and the need for future repairs to the Willwood dam, agencies and concerned citizens came together with the goal of finding solutions and preventing further sediment releases from the dam. The DEQ initiated three work groups operating under the leadership and direction of the Executive Committee

(http://deq.wyoming.gov/media/attachments/Water%20Quality/Watershed%20Protection/Willwood%20Dam%20and%20Shoshone%20River/2017-1120_Willwood-Committee-Structure_Updated.pdf). Work group 1 focused on the management of the fisheries and mitigation of the sediment accumulated in spawning beds, while work group 2 focused on evaluating dam operations and quantifying the amount of sediment above and below the dam. WG3 focused on reducing the volume of sediment that accumulates at Willwood Dam through implementation of voluntary best management practices (BMPs) designed to reduce the introduction of sediment into the Shoshone River above Willwood Dam.

Work Group #3 (WG3)

WG3 efforts began with a field tour in June 2017. The tour was attended by approximately 30 agency representatives, conservation groups, and landowners and was intended to help educate participants on watershed characteristics and sources of sediment, including natural/background sources. Discussion following the tour solicited participants for WG3 and outlined next steps for the work group.

WG3 met approximately monthly throughout the remainder of 2017, 2018, and 2019 to focus on identifying potential sediment sources to the Shoshone River and its tributaries, prioritizing the impact of those potential sediment sources, and identifying potential projects and funding sources that might be voluntarily applied with landowners and agencies to reduce sediment loading. Efforts of WG3 also included identifying data gaps and monitoring needs, with some preliminary data collection efforts started in 2017 and continued in 2018 and 2019. WG3 recognized that without data, source identification and prioritization is limited to subjective, qualitative determinations based on analysis of available information (e.g., aerial imagery, hydrology, topography) and the best professional judgment of work group members through experience and visual observations. This information was drafted into the Watershed Plan.

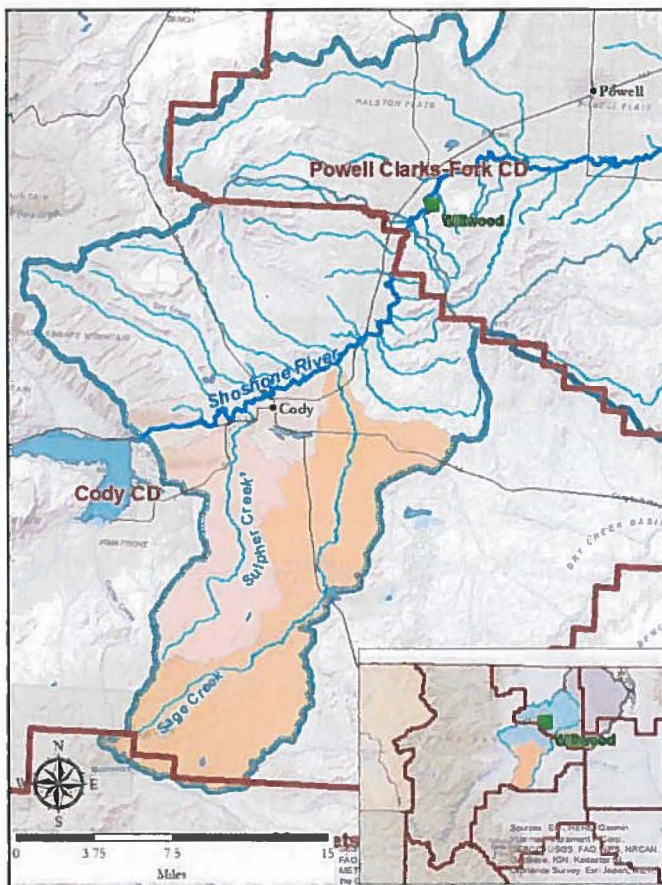
Concurrent with drafting the Watershed Plan, public outreach activities were completed to raise awareness of WG3 efforts, encourage input on the plan, and promote opportunities for voluntary participation in future restoration efforts. The Watershed Plan was completed in July 2019.

Work Group 3 includes members from Willwood Irrigation District, Local agricultural producers, WDEQ, Wyoming Game and Fish Department, Bureau of Land Management, Powell Clarks Fork Conservation District, Cody Conservation District, Natural Resources Conservation Service, Wyoming Association of Conservation Districts, East Yellowstone Chapter of Trout Unlimited, University of Wyoming Extension, and The Nature Conservancy. WG3 membership has been open to all interested participants and outreach efforts have promoted participation, especially by local residents within the watershed.

ELIGIBILITY OF APPLICANT

Based near the Willwood Dam in Park County, the Powell Clarks Fork Conservation District (PCFCD) is one of 34 conservation districts in Wyoming. As a local political subdivision of the State (§§ 11-16-101 *et. seq.*), the PCFCD is charged with providing for the conservation of Wyoming's natural resources through the delivery of technical and program assistance to private landowners

and as cooperating agencies with state and federal land management agencies. The PCFCD has played a pivotal role in generating local awareness of watershed management challenges and maintaining a consensus-driven process amongst watershed stakeholders that make up WG3.



GOALS

The PCFCD supports the mission of WG3 to promote a locally-driven approach in proactively seeking solutions to reduce the volume of sediment that accumulates at Willwood Dam through implementation of voluntary management measures in the upstream watershed.

The overarching goals of the Executive Committee and work groups are to restore aquatic life and habitat damaged due to the release of accumulated sediment from the

Willwood Dam reservoir into the Shoshone River and reduce and/or eliminate future releases of accumulated sediment that are harmful to aquatic life and aquatic and riparian habitats downstream of the dam.

WG3 developed a well-coordinated, stakeholder-supported Watershed Plan for addressing sedimentation choking the Shoshone River. To continue refining the broader goals of the plan specific to the project location and move closer to project prioritization and implementation, WG3 and the PCFCD will focus on more immediate goals identified to guide the proposed activities:

1. Build on the organizational capacity of the PCFCD and hire a watershed coordinator to carry out and further refine the Watershed Plan specifically in the Upper Shoshone River drainage.
2. Increase community understanding and awareness of natural and human-induced disturbances threatening the biological integrity of the Shoshone River and social fabric of the communities in the watershed.
3. Continue monitoring and gathering information in the Sulphur Creek, Sage Creek and Mainstem of the Shoshone sub-watersheds to identify and quantify sediment sources and facilitate a more informed prioritization process for project implementation and future studies as needed.
4. Conduct a preliminary examination of irrigation return flows on Sulphur and Sage Creeks and their tributaries, and conduct research into project impact on irrigation water availability downstream.
5. Develop Restoration plan to be able to begin implementing on-the-ground projects.

APPROACH

WG3 and the PCFCD proposes to complete the following activities in order to achieve the goals as outlined above that also align with a majority of **Task B - Watershed Restoration Planning** activities.

Goal 1: Build on the organizational capacity of the PCFCD and hire a Watershed Coordinator to carry out and further refine the Watershed Plan specifically in the Upper Shoshone River drainage.

In 2019, WG3 realized that after the extensive, 3 year in the making, Watershed Plan was complete that someone would need to be hired to implement the goals outlined in the plan. WG3 is made up of volunteers that have other jobs / commitments and don't have the time or additional staff resources to implement the plan. Based on watershed planning and monitoring experience relative to Willwood Dam and the issues associated with the Dam, the PCFCD stepped in to seek opportunities for a Watershed Coordinator which led to this application. The PCFCD District Manager would oversee the Watershed Coordinator and would outline such tasks as researching the Watershed Plan, interviewing watershed group members and other stakeholders to gain an idea of projects that would improve the sub-watersheds defined in the project area,

prioritizing those watershed management projects, conducting additional monitoring, initiating a preliminary examination of irrigation return flows, and completing a more specific Restoration Plan for the Sulphur Creek, Sage Creek, and Mainstem of the Shoshone watersheds.

Goal 2: Increase community understanding and awareness of natural and human-induced disturbances threatening the biological integrity of the Shoshone River and social fabric of the communities in the watershed.

In 2019, WG3 presented the two planning documents to irrigation districts, Trout Unlimited, County Commissioners, and the public. WG3 plans to present to additional groups in 2020 and beyond. The PCFCD and Cody Conservation District (CCD) plan to increase the awareness of the Watershed Plan and efforts of WG3 through community events, fairs, other education events, a tour of the watersheds in 2020, and a workshop in 2021. The need for a Watershed Coordinator to assist with these efforts is crucial. Furthermore, with assistance from a Watershed Coordinator, WG3 would like to research opportunities to pursue assistance from a marketing coordinator to help promote ideas and projects developed by WG3.

Goal 3: Continue monitoring and gathering information in the Sulphur Creek, Sage Creek and Mainstem of the Shoshone sub-watersheds to identify and quantify sediment sources and facilitate a more informed prioritization process for project implementation and future studies as needed.

WG3 outlined the following monitoring needs and priorities in the Watershed Plan to better understand the water quality for each of the watersheds. Some continuous monitoring with ISCO samplers is taking place on Sulphur Creek and Sage Creek with plans to continue with that monitoring in 2020 and beyond. Additional goals and needs may be determined by the Watershed Coordinator if this proposal is approved.

Sulphur Creek

1. Extend suspended sediment and bedload sampling at the mouth of Sulphur Creek to collect additional samples during rain and/or snowmelt events.
2. Conduct on the ground habitat assessment on mainstem of Sulphur Creek and its tributaries to identify the areas of highest sediment sources and identify best management practices to reduce sediment loading.
3. Additional monitoring to understand what sediment load, if any, is coming from the footprint of the American Colloid Bentonite Mine.
4. Identify high priority road erosion improvement projects on public and private lands.
5. An understanding of the amount of sediment that:
 - Originates from the South Fork Shoshone River and is pulled into the Cody Canal and Lakeview Irrigation Systems.
 - Is picked up within the dirt irrigation canals or storm water runoff into the Cody Canal and Lakeview Irrigation Canals.

6. Quantify the amount of suspended and bedload sediments that are entering Sulphur Creek from the Lakeview Canal and the Cody Canal.

Sage Creek

1. Extend suspended sediment and bedload sampling at the mouth of Sage Creek to collect additional samples during rain and/or snowmelt events.
2. Quantify the amount of suspended and bedload sediments that are entering Sage Creek from the Cody Canal.
3. Quantify the amount of sediment contributed from stream bank erosion as a result of irrigation water conveyance in Sage Creek from the Cody Canal to the Ross Lateral.
4. Conduct on the ground habitat assessments on Spring Creek to identify the areas of highest sediment sources and identify best management practices to reduce sediment loading.

Main Stem of the Shoshone River

1. There is little direct measurement of the sediment load in the mainstem of the Shoshone River overtime. More point in time observations or continual sampling is needed to determine the level of sediment loading and the seasonality of the sediment loading.
2. A better understanding is needed of the quantity of sediment contributed from the City of Cody storm drains.
3. A better understanding is needed of the quantity of sediment inputs from overland irrigation return flows.
4. Conduct a bank erosion assessment on the middle mainstem of the Shoshone River. Understand the erosion rate of the high bank north of the old treatment ponds.

Goal 4: Conduct a preliminary examination of irrigation return flows on Sulphur and Sage Creeks and their tributaries, and research into project impact on irrigation water availability downstream.

Aging irrigation infrastructure is an issue within the Sulphur and Sage Creek sub-watersheds and contributes to sediment entering the Shoshone River. Aging irrigation infrastructure also contributes to poor management of irrigation water causing excess water where it's not wanted and limited water where it is needed. If so funded, the Watershed Coordinator will work with partners to determine where water quantity studies are needed to provide baseline information. The Watershed Coordinator will also research and inventory aging irrigation infrastructure in the project area with partners and irrigation districts.

Goal 5: Develop Restoration plan to be able to begin implementing on-the-ground projects.

Based on the previous four goals, the PCFCD and Watershed Coordinator, if funded, will:

1. Organize feedback on issues and potential projects from educational events, interviews / meetings with WG3 members and stakeholders.
2. Prioritize potential projects within the project location based on feedback and results from educational events, interviews / meetings with WG3 members, stakeholders, monitoring data results, and irrigation return flow preliminary examination.
3. Review watershed-specific best management practices established by Federal, state, and local government agencies that would align with potential projects.

The results of these three tasks will be presented in a Restoration Plan to WG3, which will prioritize projects, seek additional funding for projects if needed and begin implementing on-the-ground projects with stakeholders in project area which will hopefully lead to a Phase II grant application.

EVALUATION CRITERIA

EVALUATION CRITERION A- WATERSHED GROUP DIVERSITY AND GEOGRAPHIC SCOPE (30 PTS)

SUB-CRITERION A1. WATERSHED GROUP DIVERSITY

The PCFCD and WG3 have actively sought and encouraged the participation of affected parties in the watershed plan development process. Key stakeholders that have been represented in the initial efforts to develop a watershed plan include:

- **Agriculture:** The primary agricultural activities in the Shoshone River Watershed include livestock ranching, hay production, and crop production, namely barley, wheat, and sugar beets. Multiple grazing allotments are managed by the Bureau of Land Management.
- **Hydropower:** Communities in the upper Bighorn Basin largely owe their existence to the passage of the Carey Act of 1894 and the construction of the Buffalo Bill Dam. Situated just west of Cody, WY, the dam produces 30.5 MW of power in addition to its vital role in supporting much of the irrigation infrastructure in the watershed.
- **Irrigation Districts:** Irrigation has transformed the semi-arid landscape of the Shoshone River Watershed. It will be important to build stronger partnerships with irrigation districts in the watershed as the PCFCD and other stakeholders work to address water quantity and water quality issues. Aging infrastructure, maintenance of irrigation systems from sediment runoff, and protecting the health of Shoshone River its tributaries that return flows empty into are some of the many challenges faced by local irrigation districts.
- **Public Land Managers:** The Bureau of Reclamation, Bureau of Land Management, and U.S. Forest Service manage a significant portion of the greater Shoshone River watershed. Within the Sulphur Creek drainage, approximately 58% of lands are private while the remaining 42% of lands are managed by the state or federal agency. Nearly 80% of lands in

the upper portion of the Sage Creek drainage are privately owned while the BLM manages 60% of lands that drain into lower Sage Creek. In addition to building upon community involvement, the PCFCD and WG3 will continue to work with the BLM and other agencies to identify opportunities for watershed projects to reduce runoff.

- **Neighboring Conservation Districts:** The Cody Conservation District and Shoshone Conservation District are also located in the Shoshone River drainage. Both Districts are supportive of the PCFCD's efforts to address sediment runoff and other water quality and water quantity concerns and will work collaboratively to conduct outreach, data collection and project implementation across the watershed.
- **Tourism and Recreation Groups:** The Wyoming Game and Fish Department designated the Shoshone River as a blue ribbon trout stream below the Buffalo Bill Dam, throughout the focus area of this proposal. Blue ribbon streams are considered special resources under the Wyoming Stream Mitigation Procedure as recognized by the U.S. Army Corps of Engineers. Popular with local anglers and visitors alike, the Shoshone River provides excellent trout fishing and rafting opportunities. Sage Creek is designated as a green ribbon trout stream, meaning the Wyoming Game and Fish Department considers it a stream of local importance.
- **Private Residents:** Landowners (who largely reside in the valley along the Shoshone River and its major tributaries) greatly influence riparian conditions throughout the drainage. Identifying ways to increase their input and support in the watershed planning and project implementation process are among the long term goals of this effort.

Specifically, the PCFCD and WG3 are made up of a diverse group of individuals representing the following interests/entities:

- Local Agricultural Producers
- Willwood Irrigation District
- Wyoming Department of Environmental Quality
- Wyoming Game and Fish Department
- Natural Resources Conservation District
- Bureau of Land Management
- Wyoming Association of Conservation Districts
- Cody Conservation District
- Trout Unlimited-East Yellowstone Chapter
- University of Wyoming Cooperative Extension Service
- The Nature Conservancy

In addition to the sustained support of the stakeholder groups identified above, representatives from the following groups have participated in watershed group meetings and outreach events:

- North Fork Anglers
- Rep. Jamie Flitner, Sen. R.J. Kost, Rep. Dan Larsen, Rep. Dave Northrup, Sen. John Winters
- State Engineer's Office
- Bureau of Reclamation
- Wyoming Water Development Office
- Shoshone Conservation District
- Meeteetse Conservation District
- Deaver Irrigation District
- Farm Service Agency
- Regional News Stations KULR (Billings, MT) and KCWY13 (Casper, WY)

Going forward, the PCFCD and WG3 will continue building upon existing relationships established in the initial stages of the watershed planning process while identifying ways to engage stakeholders that have not been as active in the planning process. This will primarily be accomplished by targeted mailings and meetings, and invitations to upcoming PCFCD and WG3 events.

SUB-CRITERION A2. GEOGRAPHIC SCOPE

As mentioned in previous sections the Existing Watershed Group (WG3) has a wide variety of representation as there multiple interests within the Sulphur Creek, Sage Creek and Main Stem of the Shoshone watersheds. WG3 has specifically reached out to the Lakeview and Cody Canal Irrigation Districts, Legislators, County Commissioners, Nature Conservancy, Trout Unlimited, North Fork Anglers and the general public about the direction WG3 hopes to take with the guidance of the watershed plan. Our hope is if we receive this funding, that there will be even more outreach conducted so the majority of the residents, land managers and businesses within the project area are familiar with this effort and can provide input. WG3 would like to have more discussions with the Lakeview and Cody Canal Irrigation districts, irrigators, recreation groups, City of Cody and other entities within the project area to determine if and where projects are needed and how WG3 can help move those projects forward.

WG3 chose the Sulphur Creek, Sage Creek and partial Main Stem of the Shoshone watersheds as the project area for this grant based on three main factors: 1) preliminary monitoring results indicated that sediment was most abundant coming from these drainages 2) multiple known land uses within these sub-watersheds contribute to sediment in the Shoshone River, 3) the size of the sub-watersheds project area (two full 12-digit HUCs and one partial) was small enough to be able to reach out to the various landowners, land managers, and entities which potentially have some impact to the amount of sediment that is contributing to the Shoshone River, but large enough to make an impact if stakeholders make some planned changes that can help reduce the amount of

sediment entering the Shoshone River. The smaller size was also a factor in deciding where more targeted sediment monitoring should take place.

EVALUATION CRITERION B- ADDRESSING CRITICAL WATERSHED NEEDS (35 PTS)

SUB-CRITERION B1. CRITICAL WATERSHED NEEDS OR ISSUES

WG3 members identified several potential sources of sediment to the Shoshone River upstream of Willwood Dam, including (1) sediment sources influenced by anthropogenic activities for which management measures are likely feasible, as well as (2) natural (background) sources for which it is not recommended that management measures be pursued at this time (but cost-effective management measures are identified in the future).

Seven major potential sources of sediment identified by WG3 are listed below. The sources are not listed in a particular order. Again, it is noted that natural/background erosion in the watershed may be significant; the first six sources represent those that WG3 identified as having the potential to mitigate through voluntary projects.

1. Irrigation return flow carrying sediment and other pollutants to streams.
2. Overgrazing on small- and large-acreage livestock facilities that lead to a lack of riparian vegetation, resulting in stream bank erosion.
3. Erosion of roads and trails.
4. Spilling or blow-off of irrigation water into streams, causing channel and bank erosion
5. Activities such as mining, subdivision development, and construction activities that remove vegetation and result in erosion of bare ground.
6. In some areas, the prevalence of invasive cheatgrass may be exacerbating gully and rill erosion.
7. Natural/background erosion

The seven potential sources of sediment were researched more specifically by WG3 members for the Main Stem of the Shoshone River, Sulphur Creek and Sage Creek watersheds as listed below.

Main Stem of the Shoshone River

- A. City of Cody
 - a. Storm drains, stormwater runoff and irrigation return flows transport sediment and other pollutants directly to the River and the Cody Canal.
- B. Irrigation return flows
 - a. transport sediment and other pollutants directly to the River, and ground and surface flows can saturate and weaken banks resulting in period blank slumping
- C. Stream bank erosion
 - a. Direct channel modification - the bank armoring and location of the treatment ponds has resulted in the river making a 90 degree turn which directs high flows into a 0.15-mile-long slumping bank on the north side of the river.

- b. Water fluctuations from Buffalo Bill Dam for flood control.
- D. Husky Refinery
 - a. Bare ground has the potential to contribute sediment from overland flows.
 - b. Water diversion structure - at high flows this structure has resulted in bank erosion near the barrier wall of the refinery.
- E. Small acreage management
 - a. Poor grazing and pasture management can and has led to bare ground which transports sediment and other pollutants directly to tributaries of the River and the River itself.

Sulphur Creek

- A. Stream bank erosion - during habitat assessments conducted by the Wyoming Game and Fish Department in 2017, stream bank erosion was identified as a primary sediment source concern. Bank erosion was observed on 26 - 50% of the banks within the unnamed ephemeral draw that conveys Lakeview irrigation returns flows into Sulphur Creek. Bank erosion was also observed on 26 - 50% of the banks within Sulphur Creek downstream of the confluence with the unnamed ephemeral draw. Some potential causes of stream bank erosion include the following:
 - a. Water fluctuations from irrigation return flows, water releases, and stormwater runoff.
 - b. Upland grazing and pasture management contributing concentrated flow to Sulphur Creek.
 - c. Livestock with direct access to Sulphur Creek for long periods of time.
 - d. Failing or improperly sized road crossings.
- B. The South Fork Shoshone River can contribute sediments to the irrigation water used for the Cody and Lakeview canals.
- C. Classic gully, sheet, and rill erosion associated with dirt irrigation conveyance systems and crop irrigation.
- D. Surface erosion runoff
 - a. From historic and proposed bentonite mines.
 - b. Cheatgrass invasion has resulted in unstable soils and increased soil erosion from rain and snowmelt events.
- E. Road erosion as a result of recreational use of non-improved roads.
 - a. Failing road crossings.
 - b. Braided and eroding roads.
- F. Small acreage management
 - a. Poor grazing and pasture management can lead to bare ground which transports sediment and other pollutants to Sulphur Creek.
- G. City of Cody storm drains - bring sediment and other pollutants directly to the river.
- H. Classic gully erosion in naturally erosive soils can be exasperated by vegetation with shallow root systems, primarily cheatgrass, and hoof action by livestock, wildlife, and ATV use.

Sage Creek

- A. Stream bank erosion and bank slumping caused by :

- a. Water fluctuations from irrigation water releases, return flows, and stormwater runoff.
 - b. Bank slumping events as a result of irrigation ground and surface flows that saturates and weaken banks.
 - c. Upland grazing and pasture management contributing concentrated flow to Sage Creek.
 - d. Livestock with direct access to Sage Creek for long periods of time.
 - e. Failing or improperly sized road crossings on streams.
 - f. Direct stream channel modification and straightening/channelizing.
- B. Irrigation water and return flows can introduce sediment from:
- a. Overland flow and erosion from field runoff and other return flows.
 - b. Classic gully, and sheet and rill erosion associated with dirt irrigation conveyance systems and crop irrigation.
 - c. Sediment originating in the South Fork of the Shoshone River, or entering from irrigation returns to the Canal, and runoff from the City of Cody roads can contribute sediments to the irrigation water within the Cody canal.
- C. Small acreage management
- a. Poor grazing and pasture management can lead to bare ground which transports sediment and other pollutants to Sage Creek.
- D. Sediment and pollutant runoff from City of Cody storm drains.
- E. The Upper Sage Creek subwatershed is believed to only contribute sediment during spring runoff and snowmelt events. Therefore, the focus of the sediment contributions are focused on the Lower Sage Creek subwatershed.

SUB-CRITERION B2. DEVELOPING STRATEGIES TO ADDRESS CRITICAL WATERSHED NEEDS OR ISSUES

The PCFCD has a long history of forging relationships between resource management professionals and the general community, including irrigation districts and private landowners to implement resource stewardship practices. Some of the key ways in which the PCFCD promotes and builds these partnerships include:

1. Advocating grassroots efforts by community members to implement projects that meet their own stewardship goals while collectively benefitting the watershed as a whole.
2. Emphasizing communication between watershed stakeholders. The PCFCD District Manager places a high priority on broadcasting watershed planning and implementation activities to the public and potential partners alike to build a greater network of support for efforts undertaken.
3. Coordinating projects and activities that support the goals of the sediment-based watershed plan developed.
4. Engaging in outreach efforts to educate communities and stakeholders on challenges and opportunities to improve watershed health.

5. Pursuing financial support in the form of grants and sponsorships for outreach activities, monitoring, and project implementation.

Watershed Restoration Planning & Watershed Management Project Design

Much of the broad-scale information gathering phase of the watershed plan development has occurred. Under this proposal, the PCFCD will take a more targeted approach in examining the sources affecting the Sage Creek and Sulphur Creek drainages as mentioned in the previous section, to refine the recommended actions for those segments of the Shoshone River Watershed. Although a consensus-based approach is being used to identify priority drainages, much of that consensus is based on prioritization of issues using scientific data available. This approach is expected to continue; future management decisions will rely heavily on monitoring data as well as hydrologic models as stakeholders are faced with striking a balance between water quality and water quantity issues present in this watershed.

As project decisions must be made, stakeholders will continue to work in a professional manner as they have the past several years when disagreements arose. If a particularly contentious debate occurs, there are stakeholder representatives that have taken conflict mediation training. The Wyoming Department of Agriculture is also available to assist the PCFCD in securing a third-party mediator.

As the Restoration Plan is developed over the next two years, projects will be prioritized for implementation based on a number of social, economic, and environmental factors. An evaluation matrix and ranking criteria will be developed in consultation with other stakeholders to ensure consensus in the approach used to address resource concerns and priorities. A critical issue that must be addressed when evaluating projects is the effect those practices will have on the hydrology of the watershed. Efforts to examine this issue are expected to run concurrently with watershed monitoring and outreach efforts planned under this proposal.

Actual project designs and engineering will be completed by the Natural Resources Conservation Service, Wyoming Game and Fish Department, or another appropriate entity.

In addition to developing a prioritization methodology for evaluating future projects, the PCFCD and WG3 have already developed a project timeline and set of milestones to guide the watershed plan through the project implementation phase. Some of the more immediate milestones identified can be found in the table under *Sub-criterion C1. Understanding of and Ability to Meet Program Requirements*. As the planning process moves toward the project implementation phase, the PCFCD and WG3 will consult with the BoR's environmental and cultural staff where applicable to ensure project compliance with federal standards.

EVALUATION CRITERION C- IMPLEMENTATION AND RESULTS (25 PTS)

SUB-CRITERION C1. UNDERSTANDING OF AND ABILITY TO MEET PROGRAM REQUIREMENTS

The PCFCD proposed Scope of Work is described in detail under the Approach section of the Technical Project Description above. The following table, organized by Milestones, outlines the estimated schedule of work for each Major Task. Also included are the milestones, start/end, and cost for each task.

Major Tasks	Start Date	End Date	Milestones
Project Administration (\$13,968.00)			
Hire Watershed Coordinator (WC)	5/1/2020	4/30/2022	See details below
Project Reporting, Financials	5/1/2020	4/30/2022	PCFCD District Manager (DM) will manage the financials of the grant. The PCFCD and WC will submit reports as determined in the grant conditions.
Stakeholder Outreach (\$30,774.00)			
Research marketing company to expand outreach	8/1/2020	12/30/2021	WC will work with PCFCD, CCD, and WG3 to evaluate opportunities to pursue assistance from a marketing coordinator to help promote projects.
Interview WG3 Members	5/1/2020	7/31/2021	PCFCD DM and WC will make phone calls and / or have one-on-one conversations with WG3 Members on monitoring needs, and potential project ideas. WC will keep record of conversations for Restoration Plan.
Interview other stakeholders and potential partners	5/1/2020	7/31/2021	PCFCD DM and WC will make phone calls and / or have one-on-one conversations with stakeholders and potential partners on project ideas and funding opportunities. WC will keep record of conversations for Restoration Plan.
Plan and conduct watershed tour in 2020	5/1/2020	9/1/2020	WC to work with PCFCD DM by setting up locations for tour, sending invitations, organizing transportation, breaks, meals and speakers.
Plan and conduct workshop on sediment in 2021	3/1/2021	12/30/2021	WC to work with PCFCD DM by setting up location for sediment related workshop, contacting stakeholders and sending invitations, organizing speakers and materials.
Watershed Monitoring (\$21,428.00)			
Draft Sampling Analysis Plan (SAP); Conduct additional monitoring	7/1/2020	12/30/2021	WC will work with PCFCD District Manager and other partners to develop comprehensive Sampling and Analysis Plan to collect credible sediment data. WC and PCFCD District Manager will collect additional data.
Develop monitoring strategy based on watershed conditions and project prioritization	9/1/2020	12/30/2021	WC will look at existing data and determine any data gaps. Based on past and proposed monitoring results, determine with stakeholders where BMPs would be most effective, specifically tied to pre and post project implementation. WC will also consider pre and post Irrigation season factors.
Research and Restoration Plan (\$33,830.00)			
Research Watershed Plan, supplemental planning documents and information	5/1/2020	7/30/2020	WC to review Watershed Plan and existing planning documents to familiarize with project location.
Conduct preliminary examination of irrigation return flows	7/1/2020	12/30/2021	WC will work with partners to research the need for a comprehensive flow/ water loss study and will research existing irrigation infrastructure in the project area.
Prioritized projects presented to stakeholders	8/1/2021	12/30/2021	WC will compile feedback from interviews, site visits, outreach events and present prioritized list to WG3. WC will work with WG3 on deciding what projects should be included in the final Restoration plan.
Develop Restoration Plan	1/1/2022	4/1/2022	See Goal 5: Develop Restoration plan to be able to begin implementing on-the-ground projects. The results of the tasks outlined in this goal will be presented in a Restoration plan to WG3 developed by WC, which will prioritize projects, seek additional funding for projects if needed and begin implementing on-the-ground projects with stakeholders in project area.

SUB-CRITERION C2. BUILDING ON RELEVANT FEDERAL, STATE, OR REGIONAL PLANNING EFFORTS

The proposed activities for which the PCFCD is seeking funding will complement and meet the goals of various water and natural resource management planning documents. The following is a description of how those plans will be integrated with the goals outlined in this proposal.

The PCFCD will develop watershed management project concepts which improve water quality in the Sulphur Creek, Sage Creek and middle Mainstem of the Shoshone watersheds by utilizing:

- The Sediment Watershed Plan for the Shoshone River from Buffalo Bill Reservoir to Willwood Dam developed by WG3 (<https://arcg.is/1ymq19>) and (<https://arcg.is/0PmPvS>)
- Shoshone River TMDL (http://deq.wyoming.gov/media/attachments/Water%20Quality/TMDL/Completed%20Projects/Shoshone-River_E.coli_TMDLs_2013.pdf)
- Shoshone River Watershed Plan completed by PCFCD and partners 2012 (hard copy available at PCFCD office)

The PCFCD will review watershed-specific best management practices and monitoring guidance established by Federal, state and local governments that by utilizing:

- WDEQ Water Quality Division, Nonpoint Source Program Best Management Practices Manuals (<http://deq.wyoming.gov/wqd/non-point-source/resources/mgt-practices/>)
- University of Wyoming Best Management Practices: Monitoring Guidance (<http://www.uwyo.edu/bmp-water/>)
- WDEQ SAP for Evaluating Sediment and Biological Criteria in the Shoshone River (http://deq.wyoming.gov/media/attachments/Water%20Quality/Watershed%20Protection/Willwood%20Dam%20and%20Shoshone%20River/2018_WDEQ_Monitoring_Shoshone-River-SAP.pdf)

The PCFCD will work to improve water conservation and an understanding of past irrigation projects in the watersheds and water rights by utilizing:

- Wyoming Water Development Office - Cody Canals Laterals Level II Study (http://library.wrds.uwyo.edu/wwdcrept/Cody/Cody_Canal-Laterals_Level_II_Study-Final_Report-2018.html)
- WWDC - A Report on Lakeview Irrigation District Consumptive Use and Irrigation Demand at Cody (http://library.wrds.uwyo.edu/wwdcrept/Lakeview-Cody/Lakeview_Irrigation_District-Consumptive_Use_and_Irrigation_Demand-Final_Report-1985.html)
- WWDC - Cody Master Plan Level I Study (http://library.wrds.uwyo.edu/wwdcrept/Cody/Cody-Master_Plan_Level_I_Study-Final_Report-2009.html)
- A History of Water Law, Water Rights and Water Development in Wyoming 1868-2002 (http://wwdc.state.wy.us/history/Wyoming_Water_Law_History.pdf)

The PCFCD will work with watershed group members and stakeholders to determine how the watershed and its natural resources can be improved by referencing and utilizing:

- Wyoming Game and Fish Department Annual Fisheries Progress Report on the 2017 Work Schedule <https://docs.google.com/a/wyo.gov/viewer?a=v&pid=sites&srcid=d3lvLmdvdx3eW9taW5nLWdhhWUtYW5kLWZpc2gtZGVwYXJ0bWVudHxneDo3ODZiMjFjMjdhMjlxZjk5>
- PCFCD and Cody Conservation District Long Range Plan Documents (on file at District offices)
- Park County Land Use Plans

EVALUATION CRITERION D- DEPARTMENT OF THE INTERIOR PRIORITIES

As previously mentioned WG3 was initiated by an Executive Committee consisting of representation from the Bureau of Reclamation. WG3 worked diligently at meeting the goals outlined by the Executive Committee and the PCFCD is continuing the effort to try and reduce sediment contributions entering the Shoshone River, through the development of a Restoration Planning process. The planning process will include several crucial Department of Interior priorities including:

1. *Creating a conservation stewardship legacy second only to Teddy Roosevelt.*
 - a. Utilizing science to identify best practices to manage land and water resources and adapt to changes in the environment.
 - b. Examine land use planning processes and land use designations that govern public use and access.
 - c. Review DOI water storage, transportation, and distribution systems to identify opportunities to resolve conflict and expand capacity;
 - d. Foster relationships with conservation organizations advocating for balanced stewardship and use of public lands.
2. *Restoring trust with local communities.*
 - a. Be a better neighbor with those closest to our resources by improving dialogue and relationships with persons and entities bordering our lands;
 - b. Expand the lines of communication with Governors, state natural resources offices, Fish and Wildlife offices, water authorities, county commissioners, Tribes and local communities.

With thorough planning, water quality and on the ground monitoring, and meaningful engagement with landowners, the Cody community and stakeholders this proposal will help further the Department of Interior's mission to protect and manage the Nation's natural resources.

PROJECT BUDGET

BUDGET PROPOSAL

Budget Item	Rate	Quantity	Unit	Total Cost
Salaries and Wages				
Project Manager	\$ 18.00	1,030	Hours	\$ 18,540.00
Watershed Coordinator	\$ 23.50	2,472	Hours	\$ 58,092.00
Fringe Benefits				
<i>PCFCD does not offer fringe benefits</i>				
Travel				
Local (site visits, monitoring, outreach, project planning)	\$ 0.58	5,424	Miles	\$ 3,146.00
WY Association of Conservation District and WY Department of Environmental Quality Meetings	\$ 800.00	4	Events @ 2 people ea.	\$ 3,200.00
Supplies				
Laptop Computer for Watershed Coordinator	\$ 600.00	1	Laptop	\$ 600.00
Computer Software (MS Office and Adobe Acrobat DC)	\$ 821.00	1 ea.	Subscription to MS Office and Adobe Acrobat	\$ 821.00
Desktop Printer for Watershed Coordinator	\$ 250.00	1	Printer	\$ 250.00
Office Supplies	\$ 40.00	24	Months	\$ 960.00
Meeting Supplies	\$ 663.00	8	Meetings/Events	\$ 663.00
Contractual				
Sediment Sampling Analysis	\$ 200.00	20	Per Sample	\$ 4,000.00
Financial Review (Audit)	\$ 650.00	1	Financial Review	\$ 900.00
Advertising	\$ 75.00	6	Newspaper/Radio	\$ 450.00
Bus Rental & Driver Fee -1 tour	\$ 415.00	1	Bus & Driver	\$ 415.00
Venue (Workshop)	\$ 300.00	1	Event	\$ 300.00
Indirect Costs				
<i>de minimus</i> rate	10%	\$ 76,632.00		\$ 7,663.00
Total				\$ 100,000.00

BUDGET NARRATIVE

Salaries and Wages:

Hourly estimates for each major task are provided in the project budget. Ann Trosper, PCFCD Manager will administer this grant, specifically ensuring compliance with grant oversight and reporting requirements. The Watershed Coordinator will be responsible for managing individual tasks and working with the PCFCD Manager to carry out the intent of this proposal.

- Ann Trosper, PCFCD Manager/Project Manager: \$18.00/hr

- Vacant, Watershed Coordinator: \$23.50/hr

Fringe Benefits:

There are no fringe benefits requests in this proposal

Travel:

Travel expenses will primarily be derived from mileage reimbursement based on the 2019 federal rate of \$0.585/mile. Mileage estimates include roundtrips to the Sage Creek and Sulphur Creek subwatersheds (approximately 70 miles/trip) for watershed reconnaissance, sampling events, and meetings with landowners for outreach and project planning. Other mileage was estimated for quarterly meetings with other WG3 members in the watershed (40 miles/trip). Travel expenses also include per diem and mileage to attend meetings with the Wyoming Association of Conservation Districts (WACD) and the Wyoming Department of Environmental Quality. Other conferences may include WACD or Natural Resources Conservation Service watershed management trainings. Lodging expenses for figured for two staff using rates typical in the area (\$90/person/night).

Equipment: No equipment costs are requested in this proposal.

Supplies:

As indicated in the Budget Proposal, supplies consist of the purchase of a laptop (\$600) and desktop printer (\$250) for the Watershed Coordinator, as well as the software that will be required for the laptop (MS Office Suite at approximately \$461 and Adobe Acrobat DC \$360 for two years). Other office supplies for the Project Manager and Watershed Coordinator were calculated at \$960 and include ink and paper, flash drives, pens (at approximately \$375/yr) and envelopes and postage for stakeholder outreach (at \$210). Office supplies were also factored into the Outreach Task for binders, folders, oversized notepads, paper and ink that will be used to capture stakeholder input and develop brochures and other outreach materials that will be disseminated at events at an estimated cost of \$663 over the 24-month project period.

Contractual:

Contractual expenses include funds to help cover the cost of having a financial review or audit each year (\$900 total). Sediment sample analysis was also budgeted to enable the PCFCD to collect 20 samples at \$200/sample. Lastly, outreach expenses were calculated for 6 advertisements via newspaper and radio (\$450), bus and driver rental fees (\$415) for a workshop, and \$300 for renting out a venue.

Indirect Costs:

A de minimis rate of 10% was applied to include expenses directly associated with the administration of this grant.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

None of the monitoring of other field work will require environmental or cultural resource compliance.

APPROVALS AND PERMITS

The only approvals required will be for water monitoring activities. The PCFCD will develop an access permission form to be filled out between landowners / land managers before the monitoring takes place and the Watershed Coordinator that will be conducting the monitoring.

LETTERS OF SUPPORT

Nine Letters of support have been submitted by the following key watershed partners at the end of this document.

Letters of Support Received:

- Powell Clarks Fork Conservation District
- Cody Conservation District
- Shoshone Conservation District
- Wyoming Game and Fish Department
- Senator R.J. Kost
- Representative David Northrup
- Trout Unlimited
- Wyoming Department of Environmental Quality
- Willwood Irrigation District

OFFICIAL RESOLUTION

The Powell-Clarks Fork Conservation District Board of Supervisors indicate their support for this endeavor via resolution following the letters of support at the end of this document.

Powell Clarks Fork Conservation District
1017 Highway 14 A
Powell, Wyoming 82435

November 5, 2019

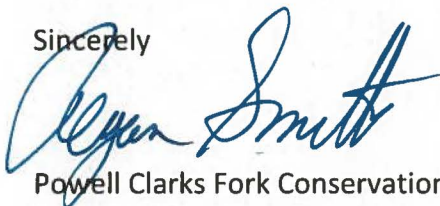
To Whom It May Concern,

The Powell Clarks Fork Conservation District supervisors are in support of the Powell Clarks Fork Conservation Districts request for a WaterSmart grant. Our District has been engaged with the Willwood Work Group 3 (WWWG3) group since February 2017. This team has worked diligently over the last three years to identify sediment sources and possible remediation practices for the Shoshone River watershed below Buffalo Bill Reservoir and above Willwood Dam. It has been an honor working with this group.

The diversity of the WWWG3 group has been one of the major attributes contributing to the success of this project. We have enjoyed members from Wyoming DEQ, NRCS, WACD, Cody Conservation District, Powell Clarks Fork Conservation District, Willwood Irrigation District, Trout Unlimited, UW Extension, BLM, and local agriculture producers. This team met monthly for 3 years to create two Esri Arcgis Story Maps. These maps detail the Willwood Dam sediment release in 2016 and potential sources and remediation practices for each sub watershed. The Story Maps can be seen at <https://arcg.is/1ymq19> and <https://arcg.is/0PmPvS> and are open to the public. The WWWG3 also created a Plan of Work outlining steps for the next five years.

The work completed to date on this project is a very good first step. However, now the heavy lifting comes into play and Powell Clarks Fork CD needs helps. We are an unfunded district with a single employee. To get quality projects on the ground additional planning and outreach efforts are required. This will take a dedicated staff and additional funding. We feel that Powell Clarks Fork CD has taken a significant leadership role in this project and we are very interested in continuing this project to completion. This WaterSmart grant would allow Powell Clarks Fork C D to continue with these efforts

Sincerely



Powell Clarks Fork Conservation District Supervisors
Regan Smith Vice Chairman



Willwood Irrigation District

1306 Road 9, Powell, WY 82435 • 307-754-3831 • widoffice@tctwest.net

11/06/2019

To Whom It May Concern,

The Willwood Irrigation District Board of Commissioners and Manager are in support of the Powell Clarks Fork Conservation Districts request for a Water Smart Grant. Willwood Irrigation has been involved with the Willwood Work Group 3 Team since 2017. The Work Group has worked hard these last 3 years to identify any sediment resources. All on the Shoshone River from Buffalo Bill to Willwood Dam.

The Work Group 3 is a unique group of individuals and with all the great teams involved did a great job making all of the efforts come together. My hats off to Wyoming DEQ, NRCS, WACD, Cody Conservation District, Powell Clarks Fork Conservation District, Trout Unlimited, U.W. Extension, BLM, Willwood Irrigation District, and local ag producers. The Work Group met the last 3 years, for at least one meeting or more a month. And in that last 3 years with the help of all the people involved put together a Watershed Plan.

With Powell Clarks Fork Conservation District being a non-funded operation and only having 1 employee. We fully support the Water Smart Grant to assist in making all the efforts possible.

Sincerely,

Willwood Irrigation District Manager and Board President

Travis Moger

WID Manager

Troy Pimental
Board President

Cody Conservation District

P.O. Box 631

Cody, WY 82414

November 4, 2019

To Whom It May Concern,

The Cody Conservation District supervisors wholeheartedly support The Powell Clarks Fork Conservation Districts request for a WaterSmart grant. The Cody Conservation District has been working closely with the Powell Clarks Fork C D on conservation issues that involve all of Park County including sitting on the board of the Willwood Workgroup 3 (WWWG3) for the last two years.

The WWWG3 is a diverse group including members from BLM, Wyoming Game and Fish, Wyoming DEQ, NRCS, WACD, Cody Conservation District, Powell Clarks Fork Conservation District, Willwood Irrigation District, Trout Unlimited, UW Extension, and several local producers. Together these people have put together two Story Maps detailing the Willwood Dam sediment release in 2016, which resulted in the formation of 3 workgroups under the Shoshone River Watershed Sediment Project. The Story Maps can be seen at <https://arcg.is/1ymq19> and <https://arcg.is/0PmPvS> and are open to the public. The WWWG3 also created a Plan of Work outlining steps for the next five years to try and address pollution issues and reduce sediment coming into the Shoshone River which will help reduce the sediment build up behind the Willwood damn and ultimately in Yellowtail Reservoir.

Powell Clarks Fork CD has played an important leadership role in organizing local tours and events in an effort to promote Agencies and public understanding of the issues and awareness of efforts being taken to mitigate a reoccurrence. A WaterSmart grant would allow Powell Clarks Fork C D to continue to fulfill the important leadership roles that it has established for itself within the WWWG3, Park County and the State of Wyoming to pursue water quality.

Sincerely,

Cody Conservation District Supervisors


CHAIRMAN



Shoshone Conservation District

359 Nevada Avenue • Lovell, Wyoming • 82431
shoshonecd@tctwest.net

October 31, 2019

RE: Cooperative Watershed Management Program (CWMP) Grant Application from the Powell-Clarks Fork Conservation District (PCFCD)

To the CWMP Grant Review Committee:

Please accept this letter of support from the Shoshone Conservation District (SCD) for the PCFCD's application to the Bureau of Reclamation's Cooperative Watershed Management Program. This opportunity aligns perfectly with the PCFCD's effort to develop and implement a watershed plan for the upper portion of the Shoshone River drainage in northwestern Wyoming. The PCFCD and other stakeholders that comprise Work Group 3 have put in countless hours with minimal funding to formulate a plan that addresses watershed health challenges posed by sediment runoff, and consequently sediment management as relates to natural waterways and the irrigation infrastructure vital for agricultural production that supports a considerable portion of the local economy.

The Shoshone Conservation District is based in the lower Shoshone River Watershed and is witness to the impacts of sediment runoff upstream. The amount of sediment deposition occurring in the Big Horn Canyon Reservoir, part of the national park system, is astounding. Sediment runoff is adversely impacting aquatic habitat, water storage capacity in the Big Horn Basin, operation and maintenance of irrigation infrastructure, and recreational opportunities in the watershed.

Like the PCFCD, the Shoshone Conservation District currently staffs one person to manage and implement district objectives. With the creation of a position specific to building upon and implementing the sediment-focused Upper Shoshone River Watershed Plan, we are encouraged that greater outreach and coordination with communities within the watershed will be possible and that on-the-ground projects will follow shortly thereafter. Having adequate personnel available to lead these planning, project development and implementation efforts is essential for the PCFCD to accomplish the objectives set forth in collaboration with other watershed planning partners over the past several years. We believe the PCFCD is more than capable of setting this plan into action and we commend them for their willingness to spearhead the effort.

Thank-you for your consideration,

Keith Grant, Supervisor

Shoshone Conservation District



WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006

Phone: (307) 777-4600 Fax: (307) 777-4699

wgfd.wyo.gov

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MIKE SCHMID

October 31, 2019

Ann Trosper
Powell Clarks Fork Conservation District
1017 Highway 14A
Powell, Wyoming 82435

Dear Ms. Trosper,

The Wyoming Game and Fish Department encourages the WaterSMART Program to award the Powell Clarks Fork Conservation district funding to assist in the development and implementation of the Lower Shoshone Watershed plan. The Lower Shoshone Watershed plan identifies best management practices that can reduce the introduction of sediment into the Lower Shoshone River. The reduction of sediment in the Lower Shoshone River will not only benefit Bureau of Reclamation infrastructure managed by four irrigation districts but it will also improve water quality, aquatic life, increase spawning habitat for fish, and allow for aquatic recreational opportunities to occur during irrigation season (July through October).

The Wyoming Game and Fish Department is the managing agency charged with conserving the aquatic resources in the Lower Shoshone Watershed. The Lower Shoshone River is a blue ribbon trout stream of national importance containing greater than 600 pounds of trout per mile. Aquatic recreation and fishing are popular in this section of the Shoshone and provide between \$19.4 and \$35.2 million dollars in economic benefits to Park County.

The Wyoming Game and Fish Department is committed to continued participation in the development of and implementation of the Lower Shoshone Watershed plan. To date, our staff has contributed over 400 hours as well as vehicle expenses (totaling over \$9,000 in value), and volunteers contributed over 200 hours (over \$5,000 in value) in the development of the plan and collecting water quality data used in the development of the plan.

Sincerely,

Alan Osterland
Chief of Fisheries

LB/ao

**cc: Laura Burckhardt, Cody Aquatic Habitat Biologist
Paul Dey, Aquatic Habitat Program Manager
File**

Representative **David Northrup**
Wyoming House of Representatives **House District 50**
799 Lane 13
Powell, WY 82435



home (307) 754-2190
mobile (307) 272-0617
email David.Northrup@wyoleg.gov

October 29, 2019

Ann Trosper

1017 Highway 14A

Powell WY 82435

To whom it may concern:

I am writing to express my strong support for the Powell Clark's Fork conservation district's application for the Bureau of Reclamation Watersmart Grant. This grant will be used to help the Powell Clark's Fork Conservation District perform the evaluation of the Shoshone watershed plan.

In my experience, the District has been conservative and cautious with the money and will make good use of this grant.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Northrup", is written over a horizontal line. The signature is fluid and cursive.

David Northrup

Senator R.J. Kost
Wyoming Senate Senate District 19
680 Road 11 • Powell, WY 82435



home (307) 754-7174
email RJ.Kost@wyoleg.gov

October 29, 2019

R. J. Kost
Senator
680 Road 11
Powell, Wyoming 82435

To Whom It May Concern,

I am writing in support of the Sediment Watershed Plan for the Powell Clarks Fork Conservation District. The plan provides a reasonable solution to the problem existing on the Shoshone River with the large sediment released from the Willwood Dam. The time and work the group has put into this plan reveals the dedication and commitment to a solution meeting the needs of all involved. It is my recommendation for you to approve their plan and allow them to move forward. This will further help in meeting the goals of an Existing Watershed Group as well as promote water reliability and cooperation between stakeholders reducing conflict. The plan will also facilitate solutions to complex water solutions and developing plans that promote conservation stewardship.

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read "R.J. Kost".

Senator R.J. Kost



November 5, 2019

To Whom it May Concern,

This letter is intended to offer Trout Unlimited's support of the Watersmart Grant application submitted by the Powell-Clarks Fork Conservation District to protect the Shoshone River.

TU volunteers are active in the local working groups that have discussed strategies and potential collaborative solutions to improve conditions in the Shoshone River. We look forward to partnering with the Conservation District and other stakeholders to develop and implement projects and voluntary best management practices to reduce the introduction of sediment into the Shoshone River.

The Watershed Plan developed by the committed members of the local working groups has already created the framework for a successful effort on a very important resource. TU fully supports collaborative projects with agriculture, the public and others to improve stream function, irrigation efficiencies and voluntary solutions to reduce sediment and protect the Shoshone River into the future.

Thank you for the opportunity to express TU's support.

Sincerely,

A handwritten signature in black ink, appearing to read "Cory Toye", is placed over a light gray rectangular background.

Cory Toye, Director

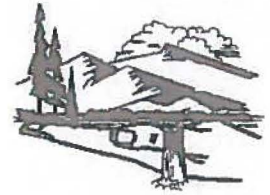
Wyoming Water and Habitat Program

ctoye@tu.org



Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.



Mark Gordon, Governor

Todd Parfitt, Director

November 5, 2019

WaterSMART Grants
c/o Ann Trosper
Powell Clarks Fork Conservation District
1017 Highway 14A
Powell, WY 82435

RE: Support for Powell-Clarks Fork Conservation District WaterSMART grant application

To Whom It May Concern:

The Wyoming Department of Environmental Quality, Water Quality Division (WQD) supports the Powell-Clarks Fork Conservation District's application for WaterSMART Cooperative Watershed Management Program Phase I grant funds. The District is requesting grant funds to support activities of Willwood Work Group 3, a watershed planning group that formed as part of an interagency response to recurring sediment releases to the Shoshone River from Willwood Dam. Implementing this interagency response has been a priority for WQD since the most recent release in 2016. The efforts of Work Group 3 have been an integral part of making that response successful.

Work Group 3 was tasked with evaluating the watershed upstream of Willwood Dam to identify sediment sources and, where feasible, projects that could be implemented to mitigate those sources. After significant effort, the group has achieved this objective through the development of a watershed plan that identifies sediment sources and potential mitigation, monitoring, and outreach activities. The scope of information covered by the plan is impressive, as is the innovative format it has been presented in (ArcGIS Story Maps).

Even more impressive, however, is the commitment of Work Group 3 members to this project, as demonstrated by the contribution of members' time at regular meetings that have occurred since June 2017. Despite different backgrounds and interests, Work Group 3 members have also shown a commitment to the common goal of protecting the river. Powell-Clarks Fork Conservation District has been a co-chair of the work group, helping facilitate work group meetings and activities. In particular, the District took the lead on organizing field tours, hosting public meetings, and communicating with local elected officials. When first approached by the WQD for assistance with forming the work group, the District readily agreed to participate and contribute.

Further watershed group coordination and planning activities are needed to set the stage for successful watershed plan implementation, and financial assistance is needed to build the local capacity to support such activities. Currently, no agency or organization on Work Group 3 has the staff resources to support these activities. Thus, we are pleased that Powell-Clarks Fork Conservation District, on the behalf of Work Group 3, is pursuing WaterSMART grant funds to continue implementing the goals of this important watershed group.

The WQD remains committed to assisting with Work Group 3 efforts, including contributing staff time to participate in the group, finding sources of financial assistance, and assisting with monitoring. We also remain committed to providing financial assistance when possible. As an example, \$12,000 of Clean Water Act Section 319 grant funds have recently been committed to help with water quality monitoring activities being coordinated by Work Group 3. WQD monitoring equipment has been and will continue to be contributed toward Work Group 3 as well.

Finally, WQD leads the Willwood Executive Committee, which includes members from Wyoming Game and Fish Department, Bureau of Reclamation, Wyoming Water Development Office, Wyoming State Engineer's Office, and Willwood Irrigation District. The Executive Committee has provided support and guidance for Work Group 3's efforts to date and I expect will continue to do so as the group works toward implementation.

Thank you for your consideration. Please contact me if I can answer any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kevin Frederick".

Kevin Frederick
Administrator
Water Quality Division
Department of Environmental Quality

CC: Jennifer Zygmunt, WQD Nonpoint Source Program
Willwood Executive Committee Members

RESOLUTION OF THE POWELL CLARKS FORK CONSERVATION DISTRICT

Endorsing the Application for Grant Funds

From the Bureau of Reclamation WaterSMART Cooperative Watershed Management Program

RESOLUTION NO. PCFCD-2019-1

Now, therefore, be it resolved by the Powell Clarks Fork Conservation District Board of Directors that:

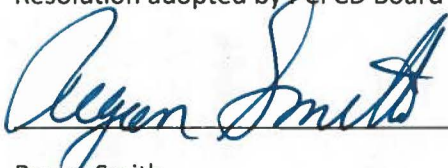
The Powell Clarks Fork Conservation District (PCFCD) submit a grant application to the Bureau of Reclamation WaterSMART Cooperative Watershed Management Program

PCFCD Board of Supervisors will have legal authority to enter into contractual agreements and manage all financial obligations associated with the grant award.

PCFCD District Manager will act as Project Manager.

PCFCD assures it's capability to manage this grant and partner commitment to fulfill all obligations.

Resolution adopted by PCFCD Board of Directors on Wednesday, November 6, 2019.



Regan Smith

Vice Chairman

11-6-19

Date