Study and Design North Platte River Restoration

North Casper and Knife River Reaches

R23AS00106: WaterSMART
Aquatic Ecosystem Restoration Projects for Fiscal Year 2023

Task Area A: Study and Design

City of Casper: Applicant
200 North David Street
Casper, WY 82601
307.235.8400

Jolene Martinez: Project Manager
200 North David Street
Casper, WY 82601
jmartinez@casperwy.gov
307.235.8332

City of Casper, located in Natrona County, Wyoming

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City of Casper is a municipality in Wyoming with drinking water delivery authority and is a Category A applicant. The City owns, manages, and operates Public Water System No. WY5601415 that serves potable water for domestic and fire flow use to City of Casper residents and businesses as well as to five wholesale customers. Not only is City of Casper a majority member of the Central Wyoming Regional Water System Joint Powers Board (JPB) that owns the water treatment plant, it also has a contractual agreement with the JPB to manage and operate the drinking water wells, water treatment plant, and regional water distribution system, PWS No. WY5600009. Thus, all employees at the water treatment plant are City of Casper employees. In addition to the water delivery authority summarized above, City of Casper owns, operates, and maintains a regional wastewater treatment facility, Sam H. Hobbs Regional Wastewater Treatment Facility, located in the Knife River Reach. This facility is authorized under Wyoming Pollutant Discharge Elimination System (WYPDES) Program permit WYO0021920. The Facility provides regional wastewater treatment services to roughly 70,000 people in an approximate 85 square mile area that includes City of Casper, City of Mills, Town of Evansville, Wardwell Water and Sewer District, Town of Bar Nunn, Natrona County International Airport, and the subdivisions of Vista West, Ardon, Westland Park, Skyline, and Six Mile Draw.

City of Casper, in collaboration with the Platte River Revival Committees that represent Wyoming Game and Fish Department, Casper District Bureau of Land Management, Natrona County Weed and Pest, Audubon Rockies, Two Fly Foundation, and more, will complete environmental and existing condition studies, 60% design, and acquire necessary permits for a holistic river and riparian restoration project along two reaches of the North Platte River that flow through Casper, by December 2025. The North Platte River is a significant resource to Casper and Wyoming in providing drinking water, aquatic/riparian ecosystem benefits, and recreational use in a high plains desert state where riparian areas are rare. While the river is a blue-ribbon trout fishery, these reaches suffer from significant in-stream bed/bank instabilities and channel corridor alterations. Reach specific examples of critical issues to be addressed by the restoration project include: bank erosion including along the banks of the City's wastewater treatment plant that threaten a breach of the sludge drying beds, a lack of appropriate riffle-pool channel morphology, limited floodplain connectivity, contaminated groundwater flows of volatile organic compounds (VOCs) and inorganic compounds from the closed and unlined municipal landfill, relic industrial gravel mining operations that leave the river vulnerable to avulsion, and low-quality riparian vegetation community dominated by invasive Russian olive trees. These conditions have resulted in degraded habitat for trout as well as native aquatic and terrestrial species. These characteristics have also contributed to reduced ecological function, degraded aesthetic values, and impaired river recreation. The North Platte River Restoration--

North Casper and Knife River Reaches project has the potential to restore over three miles of river channel, improve adjacent riparian health, create various types of new wetlands, create an Audubon Important Bird Area, protect adjacent critical infrastructure, and improve recreational opportunities/experiences. Big picture restoration goals/objectives and these specific project reaches were identified and conceived by the 2012 North Platte River Environmental Restoration Master Plan—Phase I, which has been endorsed and supported by elected officials at the local and state levels, conservation groups, government agencies, and water users.

The North Platte River Restoration – North Casper and Knife River Reaches project is not focused on a federal facility nor will it involve Federal land.

Project Location

North Platte River Restoration Project – North Casper and Knife River Reaches encompass about three miles of North Platte River and its associated riparian and upland areas located in Natrona County, Wyoming that flow through the unincorporated areas of Natrona County, City of Casper, and City of Mills. The project begins at 42.85878992, -106.32727745 and ends at 42.87292762, -106.27771225. Location maps, Exhibit 1 and Exhibit 2, can be found in the Appendix. The exhibits show the project area including all the stormwater outfalls and public versus private property ownership.

Project Description

City of Casper is seeking study and design for the North Platte River Restoration Project – North Casper and Knife River Reaches (North Casper and Knife River Reaches); both of which were identified in the 2012 North Platte River Environmental Restoration Master Plan – Phase 1 (Master Plan) and the June 2022 Field Report (Stantec) completed for a portion of the Knife River Reach (KR Field Report) (Exhibit 3 in the Appendix) . These combined reaches consist of approximately three miles of channel and have an ecological uplift potential that can be accomplished through restoration activities.

Prior to the completion of the large dams and reservoirs upstream of Casper in the early 1900s, the North Platte River through this portion of Wyoming was said to be exceptionally wide and shallow, carrying a heavy sediment load on an annual basis. The influence of the large dams drastically changed the annual discharge hydrograph and quantity of alluvial sediment that had been transported through the river system for eons, which has ultimately led to a gradual geomorphological evolution of the North Platte River downstream, including the loss of large cottonwood galleries. In creating robust restoration designs, City of Casper seeks to allow designed reaches to resume their historic vegetation trajectory by facilitating plant succession along a preferred pathway. The goal is to restore historic continuity and ecological resilience rather than static state or climax condition.

Though the North Platte River through Casper is classified as blue-ribbon trout water, widespread colonization of the invasive Russian olive tree (Elaeagnus angustifolia), entrenchment from upstream dams and reservoirs, bank erosion, and channel widening and poor riffle/pool complexity from excess of upstream sediment inputs have reduced the aesthetic and ecosystem function of the riparian and aquatic habitats. Within the project sites, non-native

invasive plant species are common across vegetative strata and appear to be excluding native vegetation. Due to river entrenchment, the North Platte is not effectively accessing its floodplain on either side of the river in these reaches, and thus the hydrology to support a robust, native riparian community is lacking. Bank erosion is also common resulting from poorly vegetated banks and increased lateral scour from river widening. Reach-wide river widening has been promulgated by increased sediment inputs from upstream sediment sources and has led to poor pool/riffle habitats for trout.

This project will utilize a series of studies, stakeholder collaboration and public input, and lessons learned from previously completed restoration projects to produce a 60% design. Design considerations will include:

- Mitigating fine sediment contributions sourced from unstable banks.
- Reshaping channel dimensions to improve sediment transportation, low water depths and riparian floodplain connectivity based on the regulated flow release schedules from the upstream Bureau of Reclamation (BOR) reservoirs.
- Enhancing riffle-pool morphology and channel complexity.
- Removing invasive Russian olive trees to improve riparian habitat and restore naturally occurring wetlands.
- Revegetating riparian fringe and adjacent floodplain with native plants.
- Evaluating water treatment alternatives including wetlands at stormwater outfalls to improve water quality.
- Reclaiming an inactive "Pre-Permit" gravel mine pond and highly disturbed river corridor, with no remaining reclamation obligations, to a degree equal or greater than current standards. This includes creating a highly connected multi-habitat type refuge for migratory birds, vegetated upland terrestrial zones, vegetated riparian fringe zones, diverse aquatic habitat units, and groundwater connected wetlands.
- Sourcing and securing natural materials for channel bed and bank structures including salvaged logs and root wads from the Casper Regional Solid Waste Facility compost yard.
- Considering phytoremediation as treatment for the closed landfill VOC and inorganic compound plume which may intersect with groundwater wells and is seeping into the river.
- Evaluating wastewater treatment plant effluent mixing zone and alternative effluent discharge methods including utilizing wetlands.

Evaluation Criteria

E.1.1. Evaluation Criterion A- Project Benefits

This criterion evaluates the extent to which the project will address restoration or protection needs for aquatic ecosystems.

Sub Criterion A.1. Anticipated benefits of study and design effort and projects to be developed: What are the critical issues of concern in the watershed? Provide documentation and support for how the critical issues were identified.

Some critical issues of watershed concern in the North Casper and Knife River Reaches include poor geomorphic function, limited fish habitat, severe bank erosion, and large amounts of invasive plant species in the riparian and upland areas. Importantly, fifteen stormwater outfalls contributing to non-point source pollution are spaced throughout the reaches, and the historic, closed, unlined landfill is seeping VOC's and inorganic compounds into the river. (See stormwater outfall locations on Exhibits 1 and 2 in the Appendix and the location of the river seeps at Nature and Extent of Contamination.) Several studies completed over the last several years that document these concerns are described below.

The Wyoming Wetlands Conservation Strategy acknowledged the North Platte River downstream of reservoir impoundments has experienced channel incision, a decrease in maintenance of oxbow wetlands, pools, point bars, and other natural habitat features, and a decrease in riparian/wetland vegetation because of dam flow stabilization and attenuation of peak floods. Additionally, it highlighted the deleterious effects of Russian olive trees which include providing shelter for higher densities of predator and competitive species for native wildlife and negatively impacting wetland hydrology through high transpiration rates within dense, monoculture stands. (Wyoming Joint Ventures Steering Committee 2010).

In 2010, the nature and extent of the landfill contamination plume was mapped. (See Nature and Extent of Contamination.) Monitoring wells have been established, and the volume of VOC's listed exceed maximum concentrations levels (MCLs) allowed by the Wyoming Department of Environmental Quality (WDEQ). Casper continues to monitor the issues and is considering phytoremediation.

In 2012, Stantec compiled the Master Plan. Stantec identified seven restoration reaches throughout 13.5 miles of river which include both North Casper and Knife River Reaches. Critical issues highlighted in the document include sedimentation from upstream tributaries and degraded portions of river which have led to an over widening of the channel, localized areas of high sheer stress and erosion, limited pool and riffle complexity that limit fish habitat, decreased floodplain connectivity from channel incision, decreased native riparian vegetation communities, and invasive riparian communities including Russian olive trees (Stantec 2012).

In 2016, Trihydro completed a Russian olive reconnaissance and vegetation community survey nine years after the first Platte River Revival Russian olive removal. Several areas within the North Casper and Knife River Reaches were evaluated. The general findings of the Platte River Revival Restoration Monitoring indicated success in removing and treating Russian olives. Despite these successes, the survey found many invasive plant species including Russian olive trees, tamarisk trees, and cheatgrass remained in the North Casper and Knife River Reaches.

In 2022, Stantec Consulting was asked to evaluate the scope of restoration construction needed in the Knife River reach as well as provide an updated cost estimate. Their field work study also included a look at the gravel mining permits and reclamation requirements. It was discovered the operations began before permits were required and no reclamation responsibility exists for some of the area. (See Exhibit 3: Knife River Field Operations Report 2022 in the Appendix.)

Explain how your project will benefit aquatic ecosystems, including benefits to plant and animal species, fish and wildlife habitat, riparian areas, and ecosystems. For example, will your project create new habitat, improve water quality, improve stream or riparian conditions, restore fish passage and connectivity, or otherwise benefit aquatic ecosystems. ***Note:*** *In your response to this criterion, A.1., please generally describe the expected benefits of your project to aquatic ecosystems; a quantitative explanation of project benefits is requested below in response to criterion A.2*

North Casper and Knife River Reaches will benefit aquatic ecosystems in several ways. Restoration study and design will address issues identified in the Master Plan and incorporate new findings identified in supporting documents mentioned in section E.1.1.1., Prior Planning and Designs, and will include:

- Reducing sediment inputs from eroding riverbanks and creating localized trout habitat by implementing bank stabilization techniques including bankfull benches, toewood, rock and cross vanes, and bank sloping and riparian vegetation re-establishment.
- Improving sediment transport and trout habitat by re-shaping the river channel and increasing complexity in pools, riffles, and runs.
- Improving floodplain connectivity and native riparian vegetation by grading sites to appropriate elevations, increasing water absorption ensuring a consistent slow release throughout the year.
- Improving wildlife habitat and stormwater filtration ecosystem services by creating wetlands.
- Improving native riparian vegetation and wildlife habitat by removing invasive species including Russian olive trees that take up large amounts of water and outcompete native riparian vegetation.
- Facilitating riparian and upland connectivity for aquatic and wildlife species through an urban area as seen in Proposed Habitat Connectivity Map.

Does the project affect water resources management in 2 or more river basins (defined as a minimum HUC-10 level)? Explain how and identify the area benefitted (provide a map).

North Casper and Knife River Reaches will benefit water resources management in the Muddy Creek – North Platte River and Sand Creek – North Platte River HUC 10 watersheds by reducing downstream sediment inputs, decreasing mid-channel bar formation, and decreasing sheer stress and erosion allowing for improved downstream aquatic habitat for fish and wildlife population as seen in Figure 1.

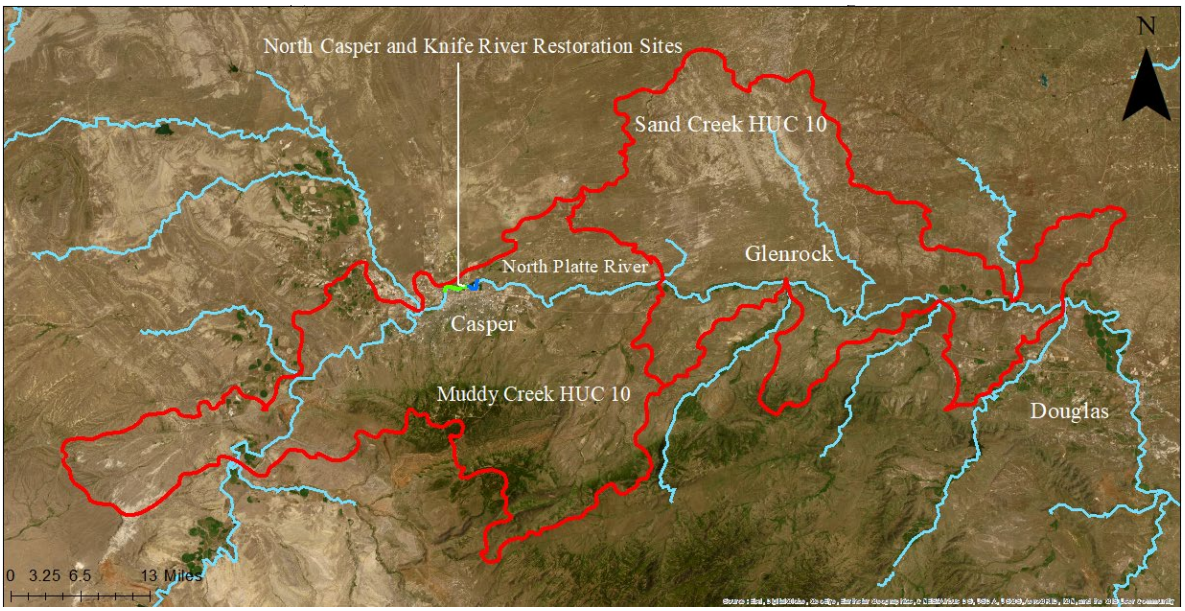


Figure 1. Muddy Creek and Sand Creek HUC 10 in relation to North Casper and Knife River Reaches

Does the project provide regional benefits, in addition to fish or habitat restoration, including: Supporting water needs for multiple water uses (i.e., agricultural, municipal, Tribal, environmental, recreational)? Reducing water conflicts? Providing other regional benefits, such as job creation or public safety benefits?

North Casper and Knife River Reaches will provide regional benefits for agricultural users through decreasing sediment inputs and promoting a stable river channel; reducing downstream erosion through decreasing sediment driven mid-channel island formation and lateral scour that threatens agricultural infrastructure and properties. The restoration reaches will also provide regional benefits for municipalities by providing stormwater filtration and clean water by filtering stormwater outfall areas through strategically placed wetland areas. Additionally, the restoration reaches will enhance recreational opportunities by improving the aesthetic quality, increasing avian species richness, and improving fisheries catch rates. Restoration activities will also improve North Platte River regional draw as a result of a lasting commitment to outdoor recreation activities including boating, wildlife viewing, and fishing.

Is this project a component of a broader strategy or plan to replace aging facilities with alternate facilities providing similar benefits? Describe how this project fits within the strategy or plan and how it will continue to provide benefit.

Specifically, the Knife River Reach will stabilize and protect eroding banks adjacent to the Knife River gravel quarry and the City of Casper wastewater treatment plant sludge drying beds. This reach has proven to be unstable over the last 20 years exhibiting channel shifts and eroding banks. Both are threatening the previously stated infrastructure. The project will produce studies and design that, when implemented, will stabilize key banks and reroute the channel incorporating natural channel design to protect these infrastructures. Additionally, with the municipal wastewater treatment plant being a major point source effluent discharger, the mixing

zone and alternative effluent discharge methods studies will influence and change practices that can lead to enhancing and protecting receiving waters and aquatic and terrestrial species.

Describe the status of the species and/or habitat that will benefit from the project. Does the project contribute to the restoration of species listed under the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.)? Does the project contribute to the restoration of listed anadromous fish? Are the species subject to a recovery plan or conservation plan under the ESA? Has there been a designation of critical habitat? If so, how does the proposed action benefit such critical habitat? If the species are not listed under the ESA, please describe their status. For example, are they native species, game species, at-risk species, species of greatest conservation need, species of Tribal significance, or state listed?

North Casper and Knife River Reaches restoration sites have potential UTE Ladies'-tress (Threatened and subject to a United States Fish and Wildlife Recovery Plan) habitat. Restoration activities would restore alluvial banks, point bars, floodplains, and wetland areas that this species inhabits. The two restoration sites will also promote the monarch butterfly (IUCN Threatened), which has been observed within completed upstream restoration reaches using riparian habitats including milk weed.

North Casper and Knife River Reaches restoration sites are identified within the Wyoming Game and Fish Department Statewide Habitat Plan for Aquatic Crucial habitats and for River Restoration for both Riparian Areas and Blue-Ribbon trout fisheries. Restoration activities will benefit riparian areas through promoting native cottonwood galleries by removing invasive Russian olive trees, planting native riparian vegetation species, and better connecting the floodplain to the North Platte River. The Blue-Ribbon trout fishery, hosting rainbow, brown, and cutthroat trout (all game species), will be improved by creating localized holding cover, enhancing pool, riffle, run bed features, and decreasing sedimentation, which leads to over-widened and shallow habitats (Wyoming Game and Fish Department 2020).

In 2012, the Master Plan identified bald and golden eagle (protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act of 1918) nesting, feeding, and winter forage sites within or adjacent to the North Casper and Knife River Reaches restoration sites. Additionally, the Master Plan identified nesting habitats for other special status species as designated by the Bureau of Land Management Casper Field Office which include red-tailed hawk, Swainson's hawk, American kestrel, osprey, great horned owl, long-eared owl, northern saw-whet owl, common barn owl, and western screech owl (Stantec 2012). Replacing the existing climax Russian Olive communities with cottonwood galleries will provide new nesting opportunities for raptures and improve the winter-feeding Bald and Golden eagles.

In 2019, Wyoming Game and Fish Department (WGFD) identified northern leopard frog, a Species of Greatest Conservation Need (SGCN), and metamorph and adult Rocky Mountain (Woodhouse's) Toads (*Anaxyrus woodhousii),* within upstream already restored North Platte River reaches and was documented in Annual Monitoring Report for the North Platte River Restoration Project (WGFD 2019). Northern leopard frog habitat will continue to improve from the North Casper and Knife River Reaches restoration.

Sub Criterion A.2. Quantification of Specific Project Benefits: What are the types and quantities of aquatic ecosystem benefits provided?

A.2.1. Task A: Study and Design Applicants Only. Please respond to the following sub criteria by providing details and quantification of the critical issues within the watershed and explaining how your Task A Study and Design project will address those issues. Please ***only respond to questions that apply to your project***. **Provide documentation and support for each of your responses.**

Species and Habitat Health: Provide information regarding the current status of species and habitat health in the planning area. Provide factual support for the status information, including citations to relevant studies, habitat or species health assessments, and statistical information to describe the critical species and habitat issues of concern in your planning area, including issues related to fish or wildlife health and habitat conditions. Describe how your conceptual project will address these issues and how your study and design efforts will inform your approach. If you are able to quantify the expected species and habitat benefits of the project you are studying and designing, please do so.

A North Casper Reach vegetation restoration investigation was completed by Stantec and reported in the Master Plan. Results indicated severe bank collapse occurring throughout the entire riverbank in this reach. Vegetation species cover estimates were calculated throughout eight sites within the North Casper Reach. Russian olive comprised up to 33.3 % of vegetation coverage while non-native grasses scored as high as 43.3% of species composition. Russian olive, the dominant cover type on the riverbank, was promulgating bank erosion. Additionally, this site was highlighted as a Russian olive seed source, contributing to continued infestation at the downstream Knife River Reach.

Since that initial study as part of the annual Platte River Revival Volunteer Day (a National Public Lands Day event), volunteers have removed nearly 100%of the Russian olives in those eight sites within the North Casper Reach. Volunteers continue to annually monitor Russian olive regrowth through collector app. The collector app protocol was established through the Citizen Science project in 2017 with QA/QC reporting 83% accuracy from the volunteer effort. Efforts to address non-native grasses have not been as successful to date. No work has been completed within the Knife River Reach. See Citizen Science Russian Olive Monitoring Quality Assurance and Quality Control Report City of Casper, WY. (Trihydro 2017).

The Master Plan also concluded that fish habitat through Casper currently consists of large runs with limited availability of riffle and pool complexes that high quality trout habitat often require. Additionally, the report summarized qualitative data verifying areas with the highest levels of geomorphic instability were also areas with the poorest fishing.

North Casper and Knife River Reaches objectives will aim at completely removing Russian olive trees, decreasing non-native grasses to below 10% species composition, and increasing native

cottonwoods, willows, other various tree/shrub species, native grass, and wetland monocot species percentages to 90% through both mechanical and chemical treatments and native riparian plantings within re-shaped, well-connected floodplains. It is expected natural recruitment of native plants will also occur similarly to what has occurred in prior restored reaches. Trout habitat will be addressed by improving bed form diversity by increasing quantity and quality of pools and riffles and varying flow releases as well as adding localized habitat features such as wood, boulders, and promoting bank stabilizing native riparian vegetation (Stantec 2012).

Watershed benefits: provide information regarding the current status of water quality, ecological function, and ecological resiliency in the planning area. Provide factual support, citations to relevant studies, and statistical information to describe the critical issues in your planning area related to water quality, ecological function, ecosystem resiliency conditions. Describe how your conceptual project will address these issues and how your study and design efforts will inform your approach. If you are able to quantify the expected watershed benefits of the project you are studying and designing, please do so.

A geomorphic assessment was conducted by Stantec and was reported within the Master Plan. The assessment took place at two representative river sections within the City of Casper. The reaches were chosen based on their representativeness of the basic geomorphologies found within the project sites. The two assessed reaches measured ~5, 000 feet and ~8,300 feet. Assessments included a longitudinal profile, which noted water surface, thalweg, and bed form features to obtain respective slopes, and a minimum of five cross-sections, which noted of top of bank, bankfull indicators, water surface, thalweg, and other topographical features, relevant to channel geometry. Both assessed reaches earned Rosgen classifications of "unstable F3 channel types" with entrenchment ratios of ~1.7 and width to depth ratios ranging from 30-50. F channel types are characterized by deeply incised channels with moderate to high width to depth ratios that exhibit aggregation and or degradation.

Additionally, Stantec conducted a Bank Assessment for Non-point source Consequence of Sediment (BANCS) assessment. This assessment assimilates Near Bank Stress (NBS) and Bank Erosion Hazard Index (BEHI). NBS assess the stress exerted by stream flow on stream banks while BEHI assimilates various ratios and percentages from bankfull height, bank height, bank length, bank angle, bank protection, root depth and density, and substrate type and stratification creating an estimate of annual sediment contributions and a classification that rates from very low, low, moderate, high, very high, to extreme. Throughout the North Casper and Knife River Reaches, between 730 and 3,200 tons of sediment were estimated to be contributed to the North Platte River per year. The North Platte River Existing Erosion Rates depicts sediment contributions throughout North Casper and Knife River Reaches.

North Casper and Knife River Reaches study and design project will include objectives to re-shape the river channel to a stable C channel type with width to depth ratios of 30-40 and an entrenchment ratio greater than 2.2 by narrowing and deepening the channel and improving floodplain connectivity through re-grading the floodplain. Additionally, all BANCS scores will be improved to a very low - medium rating indicating improved bank stability. Bank stabilization designs will incorporate toewood, sod mats, constructed bankfull benches, re-

sloping riverbanks, riparian vegetation plantings, and use of J-hooks and cross vanes redirecting the thalweg away from affected banks.

Water Supply Benefits

Provide information regarding the current status of water availability for aquatic ecosystems. Are there issues with sufficient water availability for ecosystems seasonally or year-round? Provide factual support, including hydrographs, citations to relevant studies, and stream flow information to describe the critical issues in your planning area related to water availability for aquatic ecosystems. Describe how your conceptual project will address these issues and how your study and design efforts will inform your approach. If you are able to quantify the expected water supply benefits of the project you are studying and designing, please do so.

Other Quantifiable Benefits

Provide information regarding the other critical issues of concern in your project planning area. Are there issues related to human safety (significant flood risk/ damaged infrastructure), significant long term management costs, limited economic opportunity or a lack of jobs, lack of recreational access including access to safe recreational spaces or fishing access? Provide factual support, including citations to relevant data or studies, and information to describe the other critical issues in your planning area. Describe how your conceptual project will address these issues and how your study and design efforts will inform your approach. If you are able to quantify other expected benefits of the project you are studying and designing, please do so.

E.1.1.1 Evaluation Criterion B- Prior Restoration Planning and Stakeholder Involvement and Support (30 or 40 points)

Points will be awarded based on the extent to which the proposal demonstrates diverse stakeholder support for and/ or involvement in the project, and evidence that the project builds upon prior restoration planning efforts. For Task A: Study and Design projects, more points will be awarded for study and design projects that are inclusive and incorporate input and participation by a diverse range of stakeholders, and that included such input in an earlier stage of the process.

Sub-Criterion B1: Task A: Study and Design Stakeholder Involvement and Support and Restoration Planning (40 points)

More points will be awarded for study and design projects that involve a diverse array of stakeholders.

Prior Planning and Design: Prior to applying for a Task A, it is expected that applicants will have already performed some general planning work and preliminary studies (e.g., a watershed restoration plan, planning on a river/stream-reach scale, or other planning effort) that led to the identification of a restoration concept and prioritization of their specific restoration project(s), and that included some stakeholder involvement. The following sub criteria request specific information about those prior planning efforts. Describe any prior planning efforts related to your proposed project, i.e., planning that took place before you submitted your proposal.

The Platte River Revival Committee (PRRC) was formed in 2006, to address a myriad of ecological issues such as the proliferation of Russian Olives, loss of cottonwood galleries dangerous and unattractive riprap (broken metal, concrete slabs and discarded fencing material) used for bank stabilization. The overarching goals were to promote healthy riparian areas, improve the aesthetics of the riverbanks, and to gain community support and commitment to this valuable resource. The committee began a unique partnership between the oil and gas industry and federal, state, and local agencies. The original members of included:

- Two Fly Foundation,
- Bureau of Land Management
- Natural Resource Conservation Service
- Wyoming Game and Fish Department
- Natrona County Weed and Pest
- City of Casper

City of Casper took the role as the lead agency and fiduciary and the partners were able to leverage the resources and scientific expertise of their individual agencies. In addition, a diverse group of businesses and organizations throughout the community were organized into a subcommittee to cleanup and restore the river annually. This volunteer effort, named the Platte River Revival, was first held in September of 2007 in conjunction with National Public Lands Day (NPLD). That year 300 volunteers participated in helping improve riparian conditions along the North Platte River. The river cleanup has continued to this day with over 6,000 volunteers completing hands-on restoration tasks and cleanup work including removal of 1.36 million pounds of litter and debris from the river including cars and trucks, many of which still contained their oil, fuel, and fluids (submerged as bank stabilizers), removal of thousands of Russian olives (see Russian olive removal exhibits 4, 5, and 6) and development of a citizen science protocol and application used to monitor and retreat Russian olive removal regrowth annually, and many more hands-on restoration tasks and cleanup work. The annual Platte River Revival Volunteer Day has historically been the largest NPLD event in the country.

The Master Plan was developed as a natural progression from the grass roots effort to restore the North Platte River that flows through Casper. To ensure a cooperative foundation was maintained, the request for proposal (RFP) process included input from federal, state, and county agencies with interests in water and conservation as well as conservation groups throughout the state. A contract was awarded via a bid process to Stantec Consulting Services and SWCA Environmental. The Master Plan outlines an environmentally sound and holistic approach to river restoration along 13.5 miles of the river. The instream assessment included Rosgen Stream Classification, geomorphic cross-sections, geomorphic longitudinal profiles, the BANCS Model, and Channel Evolution Model. Seven river reaches were identified for restoration construction work and eleven riparian areas were identified for ecological and habitat enhancement.

PRRC added two subcommittees, the Habitat Guidance Committee (HGC) and the Volunteer Day Committee (VDC) to concentrate its efforts on implementing the recommendations of the master plan through science-based, hands-on restoration work to be completed with volunteers and through securing the funding to complete design and construction for the seven identified construction reaches. The Master Plan has served as a guide for the work, and PRRC has both

relied on Wyoming Game and Fish plans and reports as well as commissioned other studies as needed to continue to move the project forward.

Describe the specific planning, strategy, study, and any design document(s) (plan(s)) that support your project. Explain when the plan was prepared and for what purpose.

The following documents were complete in preparation for the Platte River Revival restoration efforts:

Stantec and SWCA (Stantec Consulting Services, Inc. and SWCA Environmental Consultants). 2012. North Platte River Environmental Restoration Master Plan - Phase 1. Final Report to the City of Casper, Wyoming. The purpose for this plan is described in detail above and is specific to the North Platte River restoration effort.

SWCA Environmental Consultants. 2012. A Cultural Resource Evaluation of the City of Casper's North Platte River Restoration Project, Natrona County, Wyoming. The purpose of the report was the cultural resource study that informed the North Platte River Environmental Restoration Master Plan. The entire study was not inserted into the master plan.

Stantec Consulting Services, Inc. (2012) 30% Design for First Street and North Casper Reaches. These designs were developed as an immediate follow-up to the North Platte River Environmental Restoration Master Plan (2012). The purpose was to give PRRC a start in putting the master plan into action. Design documents were nearly completed, but Wyoming Department of Environmental Quality and USACE would not permit the project because of concerns of releasing hydrocarbon contamination from the former Amoco Oil Refinery.

The following documents were completed to monitor the progress of previous restoration efforts and inform new strategies and approaches:

Trihydro. 2016. Revised 2017. Platte River Revival Restoration Monitoring City of Casper, WY. The Platte River Revival Restoration Monitoring City of Casper, WY. The purpose of this study evaluates the effectiveness of the different Russian olive removal and treatment methods that had been implemented since 2007. A secondary purpose was to survey riparian vegetation in the removal areas to evaluate natural riparian vegetation recruitment after Russian olive removal.

Trihydro. 2017. Citizen Science Russian Olive Monitoring Quality Assurance and Quality Control Report City of Casper, WY. This report evaluates the effectiveness of the first year of developing and implementing a citizen science protocol for monitoring Russian olive regrowth. Trihydro developed a citizen science application through ARCGIS Collector App. Volunteers were educated on how to identify Russian olive and use the app. The Collector App was implemented on Platte River Revival Volunteer Day in 2017.

Trihydro. 2018. Citizen Science Russian Olive Monitoring Quality Assurance and Quality Control Report City of Casper, WY. The purpose of this report was to evaluate the effectiveness of the second year of implementing the citizen science app for monitoring Russian olive regrowth. The results were 83% efficacy.

WGFD. 2016. Annual Monitoring Report for the North Platte River Restoration Project. Wyoming Game and Fish Department, Cheyenne, Wyoming. This report documents WGFD's geomorphic, fish habitat, bank stability, and photo-point monitoring within the completed Morad Park Reach (Site 1) river restoration construction.

WGFD. 2018. Annual Monitoring Report for the North Platte River Restoration Project. Wyoming Game and Fish Department, Cheyenne, Wyoming. The report documents WGFD's geomorphic, fish habitat, bank stability, and photo-point monitoring within the completed Morad Park Reach (Site 1) Wyoming Boulevard Reach (Site 2), and Water Treatment Plant Reach (Site 3) river restoration construction.

WGFD. 2019. Annual Monitoring Report for the North Platte River Restoration Project. Wyoming Game and Fish Department, Cheyenne, Wyoming. The report documents WGFD's geomorphic, fish habitat, bank stability, and photo-point monitoring within the completed Morad Park Reach (Site 1), Wyoming Boulevard Reach (Site 2), and Water Treatment Plant Reach (Site 3) river restoration construction.

The as-built designs document completed projects:

Stantec Consulting Services Inc. 2016. North Platte River Restoration Morad Park Reach As-Built Plan Natrona County, WY. The purpose of this plan was to document the river restoration construction work at the Morad Park Reach (Site 1) completed in 2015.

Stantec Consulting Services Inc. 2017. North Platte River Restoration Wyoming Blvd and Water Treatment Plant Reaches As-Built Plan Natrona County, WY. The purpose of this plan was to document the river restoration construction work at the Wyoming Blvd and Water Treatment Plant Reaches (Sites 2 and 3.) completed in 2016.

Stantec Consulting Services Inc. 2021. North Platte River Restoration First Street Reach As-Built Plan Natrona County, WY. The purpose of this plan was to document the river restoration construction work at the First Street Reach (Site 7) completed in 2020.

The studies provided below will be used to inform the restoration efforts along the North Casper and Knife River stretches:

WGFD. 2020. Statewide Habitat Plan 2020. Wyoming Game and Fish Department, Cheyenne, Wyoming.

WGFD. 2010. Wyoming Wetlands Conservation Strategy. Wyoming Game and Fish Department, Cheyenne, Wyoming.

WGFD. 2017. State Wildlife Action Plan. Wyoming Game and Fish Department, Cheyenne, Wyoming.

T.C. Dinkins, Stantec to Jolene Martinez, City of Casper, June 1, 2022. Field Observations on the North Platte River Between Bryan Stock Trail and Knife River Property. See Exhibit 3 in the Appendix. The purpose of this report was to evaluate the state of the Knife River Reach so that a cost estimate for restoration construction could be completed. A cost estimate was needed to begin the process of securing enough funding to complete the construction of this priority site named in the master plan.

Randy Walsh, Brindle Creek LLC, Rachel Ridenour, Ridenour Research Ltd, Paul Swartzinski, Bluestem Consulting LLC to Jolene Martinez, City of Casper, December 19, 2022. North Platte River Riparian Soils and Vegetation Research Project Technical Memorandum No. 1. The final report for this research project is expected by June 30, 2023. The purpose of this research project is to guide riparian vegetation work going forward. Vegetation especially after the restoration construction work was not thriving, and the research was commissioned to find answers to and provide solutions.

Lessons Learned is planned for 2023 to summarize key lessons learned and take aways from the first four completed restoration reaches. This document will also be used to guide activities within the North Casper and Knife River Restoration Reaches.

Test Planting Study is planned for 2023 to test findings from the North Platte River Riparian Soils and Vegetation Research Project (2022). Test plots will be planted in the First Street Reach where construction was completed in 2020.

What was the scope of the planning effort that supports your project? Describe the geographic extent and types of issues (e.g., water quantity, water quality, and/or issues related to ecosystem health or the health of species and habitat within the watershed).

The Master Plan provides the foundation for restoration efforts within a 13.5-mile stretch of the North Platte River that flows through the City of Casper, the Town of Mills, and Natrona County. This section of the North Platte River flows from the western boundary of the City of Casper, at Trails West Estates No. 2, to the eastern boundary of the City of Casper, at the Central Services addition near the Bryan Stock Trail. Because the project area has mixed ownership, City of Casper acquired property and is currently entering into cooperative agreements, which has permitted a holistic approach to restoration of this section of the North Platte River. Conservation easements are also being considered.

The scope of the Master Plan included an assessment of the ecological condition of lands and water within the project area as they existed in 2011 and provided strategies for restoring the health of the river. The North Platte River was observed to be relatively stable along the 13.5-mile project area. However, areas of mass bank wasting were observed in areas where the river has over widened resulting in divided/braided stream flow. In these braided sections local areas of high shear stress have resulted in accelerated bank erosion. Additionally, long sections of the river in the project area lack riffle pool complexes resulting in reduced fish habitat.

Invasive species that were identified include cheatgrass, (Bromus tectorum), leafy spurge (Euphorbia esula), reed canary grass (Phalaris arundinacea), common reed (Phragmites

australis), Canada thistle (Cirsium arvense), kochia (Kochia scoparia), and Russian olive (Elaeagnus angustifolia). Russian olive is the dominant canopy species found along the North Platte River, and mature Russian olive stands have come to dominate the bank zone and the transition to the terrace zone in many parts of the project area. The percent cover for Russian olive ranged from 2.5% total cover to nearly 50% total cover with an average of 20% of total cover. Monitoring plans listed above measured improvements in geomorphology, fish habitat and bank stability in completed project areas, monitored Russian olive regrowth, and have and continue to inform future restoration efforts.

North Casper and Knife River Reaches were identified as high priorities in the Master Plan. This section of river has been highly modified by various activities including channelization, bermed banks, gravel mining activities, floodplain fill, river capture of a gravel pit, mass wasting of channel banks, and dumping of wasted concrete along banks. These prevalent alterations in the channel and floodplain have resulted in a very unstable reach, prone to continuance of bed and bank erosion and aggradation processes. The study entitled, Field Observations on the North Platte River Between Bryan Stock Trail and Knife River Property (Exhibit 3 in the Appendix), provides a site-specific evaluation. There are four areas of serious concern with a variety of issues to address.

At the uppermost area of serious concern, waste concrete has been poured along the section bank and a large pile of concrete slabs in the channel about 30’ from the bank constricts flow and has formed a scour pool. It is contributing to the undermining of the bank and development of a sediment aggradation bar immediately downstream. Without removal of concrete, failure of the bank toe and additional sediment deposition is expected to continue increasing localized stress on the bed and bank, leading to further erosion upstream and downstream of this area.

Moving downstream, the river has been channelized and bermed with no floodplain access on the north bank. The bank angle is near vertical through much of this section with sparsely vegetated banks and is experiencing toe erosion and bank sloughing. The river is separated from a relic gravel pond by a narrow (12-15’) strip of bermed bank for approximately 200 linear feet. There is a risk of river avulsion which needs to be considered.

The third area of serious concern includes the riverbank adjacent to the Sam H. Hobbs Regional Wastewater Facility. This bank has been affected by a high rate of erosion which is currently threatening to undermine the facilities perimeter fence. Without intervention, incremental lateral retreat of this bank towards the wastewater facility is likely to continue. Additionally, a large flow event has the potential to cause major bank scouring and could threaten the integrity of the sludge drying beds, resulting in contamination to the river. Release of concentrated wastewater sludge into the river would result in detrimental effects to water quality, aquatic species, and impact downstream drinking water sources.

The last and largest area of concern is located downstream of the wastewater plant where the river was bermed and surrounded on both sides by large gravel pits owned by Knife River. A 1985 avulsion led to the river abandoning its historic channel after which a new river channel corridor was created by backfilling along the new eastern bank using unmarketable sand, gravel, and wasted concrete slabs. This river reach is very unstable and exhibits both large areas of

sediment deposition and bed/bank erosion. The extreme expansion and over-widened river cross section drastically reduces the river's ability to transport sediment, leading to the formation of large sediment bars consisting of fine-grained material. Overwide channels have very poor aquatic habitat and shallow water is prone to temperature increases due to solar radiation. In addition, the tight, dogleg turn to the north has experienced bank erosion, requiring extensive bank armoring, which currently consists of wasted concrete slabs. This problematic bank erosion has been observed and documented along the right descending bank, potentially threatening the Knife River property and shop. The entirety of the right bank through this reach has been armored with wasted concrete slabs in an attempt to stabilize the bank but provide little/no potential for vegetation establishment.

The Knife River inactive gravel mining operations mentioned above have 432 acres of property that do not require reclamation. These include North Platte River channel (54 acres), low water gravel pit pond habitat (130 acres), and category 3-1 and 3-2 areas that were determined to be substantially completed by 1974. Nevertheless, the City of Casper and Knife River have agreed that restoration work in these areas should occur to a degree greater than or equal to normal reclamation standards including creating highly connected multi-habitat type refuge for migratory birds, vegetated upland terrestrial zones, vegetated riparian fringe zones, diverse aquatic habitat units, and groundwater connected habitat units. This is yet another example of stakeholder synergy that has propelled restoration activities within the greater North Platte River Restoration and that will continue to propel it forward into the future.

Was the plan developed collaboratively? If the referenced plan was not developed collaboratively, please explain why, for e.g., the planning effort is focused on a very small area or concerns internal to the applicant.

PRRC is comprised of several different conservation agencies and organizations with a history of collaboration and a team approach. All plans, studies, and designs have been guided and reviewed by interdisciplinary teams of qualified resource specialists. All contractors are selected through a rigorous RFP process.

Explain how any prior planning effort relates to your current proposal and how your current proposal adds value and builds on any prior planning efforts.

The current proposal is located within the larger Platte River Revival project area and the Master Plan identifies the North Casper and the Knife River Reaches as high priority areas. The restoration projects have been designed using holistic approach that addresses ecological concerns that extend beyond the site-specific boundaries to improve river function and benefit wetlands. The individual restoration effects expand habitat connectivity and increase the diversity of the existing habitats.

The current proposal will utilize the lessons learned and improve on previous efforts within the project area and will add to the knowledge base. The North Casper and Knife River Reaches are located on the eastern end of the North Platte River restoration project boundary. The 30% designs include the development of a riparian floodplain bench, the creation of a series of flow throw wetlands and open water by rerouting Sage Creek, and the construction of a setback

berm. This project will protect the river the potential contamination from the water treatment plant and mitigate contaminated groundwater through the construction of a wetland and use of phytoremediation located below Casper's landfill. This project is vital to the health of the river corridor and is necessary to protect the watershed.

Stakeholder Involvement and Support for Task A: Study and Design Projects

Committed Stakeholders

Identify stakeholders in the project area who have *committed to be involved* in the study and design process.

Since 2006, Platte River Revival Committees have worked diligently and harmoniously within their three committees and with the entire community to manage, promote, administer and lead the North Platte River restoration work within the city limits of Casper, Wyoming. The project has been informed by science and grass roots support. All on-the-ground experience and outcomes have informed all the subsequent decisions and actions. PRRC members are stakeholders representing many sectors of the community and especially the organizations charged with managing and conserving natural resources. All members are supported by the agencies and organizations for which they work, and they will commit their time and expertise and that of their agencies and organizations to leading and coordinating the study and design. None of their in-kind contributions of time given to the project coordination is included in the budget. Five of the organizations represented on PRRC are listed below because of the required more encompassing participation from their agency for the North Casper and Knife River Reaches than other committee members.

Describe what sector(s) the participating stakeholders represent and how they will engage in this effort, e.g., will they contribute funding or in-kind services, or otherwise engage in the study and design process? Provide documentation of the commitment by stakeholders to participate in the study and design process. This could include letters from stakeholders committing to be involved in the study and design process; such letters should explain what their specific interest is and how they plan to participate. Are any stakeholders contributing to the cost-share?

Wyoming Game and Fish Department (WGFD) is in the government sector with wildlife, fish, and habitat management responsibilities for Wyoming. WGFD has three staff who serve on the Platte River Revival Committees. Besides providing expertise and technical advice and support for every aspect of the project (e.g. developing RFQs for study and design consultants, reviewing study and design results, selecting alternatives) they will also provide in-kind services identified in the budget: initial Wyoming Stream Quantification Tool (WYSQT) that evaluates the aquatic and riparian existing conditions and the baseline fish population counts. See Wyoming Game and Fish Letter of Support in the Appendix.

Natrona County Weed and Pest (NCWP) is in the government sector with weed and pest management responsibilities for Natrona County. NCWP has one staff who serves on the Platte River Revival Committees. NCWP will provide expertise and technical advice and support for

every aspect of the project especially invasive species treatment and management including monitoring and retreatment.

Audubon Rockies (AR) is in the national non-profit conservation sector. AR has one staff who serves on the Platte River Revival Committees. AR is committed to providing expertise and technical advice and support for every aspect of the project and will provide in-kind services identified in the budget: baseline bird occurrence and density studies. See Audubon Rockies Letter of Support in the Appendix.

Casper District Bureau of Land Management (BLM) is in the government sector with federal lands management responsibilities. BLM has one staff who serves on the Platte River Revival Committees. BLM will provide expertise and technical advice and support for every aspect of the project.

Two Fly Foundation is in the non-profit sector with a mission to promote corporate philanthropy for Wyoming charities. Founded by people in the oil and gas industry, Two Fly Foundation has contributed $533,000 to the Platte River Revival. This funding has been allocated to the City of Casper's River Fund. One of their board members serves on the Platte River Revival Committees. Two Fly Foundation will provide expertise and technical advice and support for every aspect of the project. The North Platte River through Casper has relic contamination from the former Amoco Refinery. Two Fly Foundation has been especially helpful in navigating and negotiating the environmental responsibilities and contributions from BP for the City of Casper River Fund.

Knife River Corporation is in the construction and sand and gravel mining sectors. Knife River has a history of winning bids for street construction projects with the City of Casper and therefore has a good relationship with the City of Casper's engineering division that oversees all City capital projects. The City of Casper recently purchased 47.9 acres of property from Knife River (see JTL Group Parcel) so that the City can manage the old landfill issues and incorporate the property into parkland with a natural area focus. City of Casper will look to negotiate to acquire more property along the North Platte River from Knife River in the future. Because of the location of their sand mining operations along the North Platte River, Knife River is a committed stakeholder. City of Casper along with the PRRC will work with Knife River on every aspect of the project including exploring conservation easements or property agreements and other agreements determined to be needed to promote and maintain a healthy ecosystem that is in the best interest of the public. See Knife River Letter of Support in the Appendix.

Describe stakeholders in the project area who have *expressed their support* for the study and design process, whether or not they have committed to participate. Supporting documentation for this sub-criterion could include letters of support from stakeholders or a description of feedback from interested stakeholders.

The effort for the North Platte River restoration began in 2006, and PRRC have widely promoted and discussed their vision and plans. PRRC has actively pursued conversations with

the community as well as stakeholders and landowners in the targeted construction area reaches outlined in the Master Plan.

All stakeholders in the project area have *committed* their support with the exception of twelve private landowners who have not had an official opportunity to give their *committed* support. (See exhibits 1 and 2 to view land ownership.) All private landowners have had discussions through the years with PRRC regarding the project and what would be required of them in order to move the river restoration project forward. The results of the discussions have been promising to positive, especially since all are experiencing loss of property from severe erosion. Now that it is proposed to study and design the North Casper and Knife River Reaches and a possible funding source to complete the study and design has been identified, meetings and negotiations for stakeholder commitment including conservation easements and land acquisitions can begin.

PRRC has urged City of Casper to pursue riverfront land acquisitions throughout the 13.5 miles of river that traverses Casper. To date, City of Casper has acquired 102.69 acres that border the river, 47.9 of those within North Casper and Knife River Reaches. Additionally, City of Casper is currently confidentially negotiating an acquisition in the North Casper Reach and an acquisition in the Knife River Reach. Because the acquisitions are in negotiations with legal representatives, no details can be shared publicly.

What will the applicant do during the study and design process to ensure participation by a diverse array of stakeholders? If some sectors are not yet represented, explain how this will be accomplished. Support could include a description of stakeholder interests in the project area, and what you will do to engage them (e.g., workshops, public meetings, or outreach tools such as using local media, outreach to known stakeholder groups, web-based outreach, social media, or other kinds of announcements, etc.).

The North Platte River restoration enjoys widespread support from the community including fishing guides, the convention and visitor's bureau (See Visit Casper Letter of Support in the Appendix), the economic development organization (See Advance Casper Letter of Support in the Appendix), businesses, and citizens who enjoy various outdoor recreation opportunities. This is demonstrated by up to 500 citizens who annually give some of their time on a Saturday morning in September for Volunteer Day, a National Public Lands Day event and the Volunteer Day funding and in-kind support from businesses like Plains All-American Pipeline, Rocky Mountain Power, Jonah Bank, and Ugly Bug Fly Shop.

To continue the community participation, Volunteer Day and other volunteer opportunities will continue to be held. Communication to the hundreds of volunteers in the Volunteer Day databased regarding the project and its progress including the study and design goals and public participation opportunities for the North Casper and Knife River reaches will occur through emails and outreach through the Platte River Revival website and social media.

In addition, focused interest group meetings will be held to gather input that will inform study and design. Further, the Platte River Revival webpages will be revised and updated to be more

informative and inviting while social media outreach and other media outreach will be designed to drive interest to the more informative web pages.

E.1.2. Evaluation and Readiness to Proceed

Up to **15 points** may be awarded based upon the extent to which the proposed project is prepared to commence *study and design* upon entering into a financial assistance agreement. Task A: Study and Design applicants should respond to **sub criteria C1.** Applicants that provide a well-developed implementation plan and schedule, logical budget and budget narrative will receive the most points under this criterion.

Sub-Criterion C1: Task A: Study and Design Project Implementation

Describe the implementation plan for the proposed study and design project. Please include an estimated project schedule that shows the stages and duration of the proposed study and design work, including major tasks, milestones, and dates.

After multiple years of preparation, PRRC is eager to initiate formal planning process for the restoration of the North Casper and Knife River Reaches. PRRC has successfully approved the Master Plan, completed several restoration efforts and defined monitoring protocols that measure changes to key ecological indicators over time and inform new restoration strategies. PRRC will complete a lessons learned document in the fall of 2023. In addition, City of Casper has funded an onsite evaluation of the North Casper and Knife River Reaches and has completed the initial designs for the restoration efforts.

Because the planning area has mixed ownership, PRRC and City of Casper have met with the private landowners in order to evaluate options for establishing conservation easements for river front property via Wyoming Game and Fish for the complete removal and continued regrowth management of Russian olives. Many of the owners are experiencing significant loss of their property through erosion and are looking for solutions and the meetings with private landowners were both cordial and positive. The Knife River property is particularly important to the successful completion of the proposed planning project. The City of Casper has a good working relationship with and has previously purchased property from the Knife River. Knife River has offered their support for this project and the City of Casper is expecting to finalize a cooperative agreement in 2024. Additional riverfront property may also be purchased as the project moves forward.

The summary table below provides the timeline for all major tasks anticipated by PRRC. For more details, reference North Casper and Knife River Reaches Gantt Table.

North Casper and Knife River Reaches Milestone Table

Task Name	Start Date	End Date	Duration (days)
RFPs and Contract Awards	2024-01-02	2024-04-30	119
Project Analyses			
1) Site Evaluation: a. Bathymetry Survey b. Drone based LiDAR and Ortho-imagery c. Ground Base topographic survey	2024-04-01	2024-05-31	60
2) Baseline Resource Inventory/Evaluation: a. Aquatic & Riparian Evaluation (WySQT) b. Wetland Delineation c. Class 3 cultural resource assessment d. Existing vegetation conditions	2024-03-01	2024-10-04	217
3) Concept Design Alternatives & Analysis: a. Development of Concepts b. Preliminary Construction Estimates c. Stakeholder Outreach d. Development of MCDA metrics e. MCDA Technical Memo	2024-07-01	2024-11-15	137
4) Design Analysis: a. Hydrologic/Hydraulic Modeling & Flood Plain Analysis b. Sediment Transport Analysis c. Aquatic/Riparian Evaluation d. Geotechnical analysis of set-back berm e. Risk Analysis f. Post-Project Monitoring Plan	2024-08-01	2025-11-30	486
5) Permitting: a. CLOMR FEMA Permitting b. CORP Individual 404/401 Permit	2025-06-01	2025-12-19	201
Design and Engineering Documents			

1) 30% Design Plan Package: a. 30% Design Planset Development b. 30% Design of Bankscape c. 30% Design List of Specifications d. 30% Design Construction Estimate e. 30% Basis of Design Report Outline	2025-01-01	2025-05-31	150
2) 60% Design Plan package: a. 60% Design Plan Set Development b. 60% Design of Bankscape c. 60% Design Specifications d. 60% Design Construction Estimate e. 60% Design Construction schedule f. 60% Basis of Design Report	2025-06-01	2025-12-19	201
Legal and Institutional Requirements			
(1) Summary and findings of all compiled studies and analyses that will support environmental compliance activities and identification of any known issues and requirements	2024-06-30	2025-05-31	335
(2) Status of application for applicable federal state and local permits to include expected completion schedule or whether exemptions apply	2025-01-01	2025-05-31	150
(3) Environmental Assessment and Finding of No Significant Impact	2024-08-01	2025-12-31	517

Describe the plan to conduct project specific outreach during your award period. What regional stakeholders will you target and how will you connect and engage with them and incorporate their feedback?

Numerous stakeholders have already been identified and many are active members of PRRC or private landowners within the project area. Other agencies such as the EPA and WDEQ will be formally invited to participate in the planning process and to review the restoration designs. The Town of Evansville, directly downstream of the project, will be one of the stakeholders targeted. In addition, PRCC with a request for input from Natrona County Conservation District and Bureau of Reclamation, will identify regional stakeholders. Letters will be sent to identified stakeholders with an invitation to at least one public scoping meeting where plans will be discussed and input will be sought. Notice of the public meeting(s) will also be given through identified effective media (e.g. newspaper, radio, PRRC member websites, social media). All public comments will

be documented and utilized where appropriate. Members of PRRC with experience in formal planning processes will advise stakeholder interaction and public outreach. PRRC has a history of gathering, considering, and utilizing input appropriately and to the benefit of all.

Describe the plan to carry out any relevant studies (e.g., Project-Specific Study and Analysis, Restoration Project Opportunities and Alternatives Analysis, Benefits Analysis, or Legal and Institutional Requirements Research).

PRRC has seventeen years of experience with the river restoration project and individually as members on scoping, soliciting consultants, awarding contracts, leading and implementing varying types of studies. PRRC will select specialists from their agencies to assist with preparing the studies scopes and preparing the RFP. City of Casper engineering staff will follow City and State requirements for publicizing and accepting proposals or bids (dependent on legal requirements) and awarding the contracts. As a step in the selection process, interviews with PRRC agency specialists may also be used to select the qualified contractor.

Describe the current design status of the project and describe the design activities that will need to be completed to advance the project to 60% design?

The first step in advancing a project to 60% design is defining the scope of work and the selection of a design consultant. At a minimum the consultant will need to review the existing planning documents and relevant studies, complete onsite evaluations listed in the Milestone Table and review the 30% Design for North Casper Reach and the Knife River Reach conceptual design. The consultant will compile a report that includes a detailed description of the existing ecological conditions that may influence the designs and recommendations for addressing concerns. The final report will be used to prepare information presented during a series of internal stakeholder and public scoping meetings. Public comments and stakeholder concerns will be considered during alternative development. The selection of the preferred alternative will be completed using the Multiple Criteria Decision Analysis (MCDA) metrics specifically developed for this effort.

A 30% design will be completed for the entire project area after the selection of the preferred alternative. This engineering design will be evaluated for its effect on the existing hydraulic conditions and riparian conditions as well as sediment transport (Milestone Table: Section 4). The completed studies will inform the 60% designs and will be utilized in the permitting process.

Proposals with a budget and budget narrative that provide a reasonable explanation of study and design project costs will be prioritized.

If the applicant intends to do any on-site investigation or monitoring work, please provide documentation of permission and detail any permits or easements that may be required for access.

Knife River has committed their support for this restoration effort and has cooperated with PRRC during the preparation of this planning effort (Knife River Support Letter). Although access to the site has not been formally documented, the company has granted access to City of

Casper and its contractors for on-site investigations and monitoring work (Field Observations on the North Platte River Between Bryan Stock Trail and Knife River Property).

E.1.3 Evaluation Criterion D—Presidential and Department of the Interior

Up to **15 points** may be awarded based on the extent that the project demonstrates support for the Biden-Harris Administration's priorities, including E.O. 14008: *Tackling the Climate Crisis at Home and Abroad* and E.O. 13985: *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government,* and the President's memorandum, *Tribal Consultation and Strengthening Nation-to Nation Relationships.*

Please address only those priorities that are applicable to your project. It is not necessary to address priorities that are not applicable to your project. A project will not necessarily receive more points simply because multiple priorities are addressed. Points will be allocated based on the degree to which the project supports one or more of the priorities listed, and whether the connection to the priority(ies) is well supported in the application.

Climate Change: E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity.

If applicable, describe how the project addresses climate change and increases resiliency. For example, does the project help communities respond to or recover from drought or reduce flood risk?

North Casper and Knife River Reaches will likely reduce probability of flood risk though the improvements in channel shape and floodplain characteristics, specifically bankfull bench. The completed upstream Wyoming Boulevard Reach, which occasionally saw road inundation, has yet to see a flood event since the completed river restoration. This has been attributed to improvements in channel shape and bankfull bench width and elevation. Similar flood resiliency within the North Casper and Knife River Reaches is likely after restoration is completed.

How will the project build long-term resilience to drought? How many years will the project continue to provide benefits? Please estimate the extent to which the project will build resilience to drought and provide support for your estimate.

The annual hydrology of the North Platte River, through the City of Casper, has been greatly altered from historic conditions, due to the presence and management of the upstream and downstream water storage reservoirs (Seminoe/Pathfinder/Alcova and Glendo Reservoirs, respectively). The river is effectively managed as a large in-line water conveyance channel, elongating the delivery timing of snowmelt runoff over the summer months. Resulting in reduction in volume/frequency of historic channel forming or "bankfull" and above flow conditions and increase in volume/duration of moderate flows during irrigation season (June/August). As such the existing channel dimensions in these reaches of concern are relics of the channel forming processes from historic flow conditions, and the adjacent riparian areas

and floodplain are no longer readily accessible. This has led to riparian vegetation stress/mortality and bank erosion/migration potential.

The restoration of the North Casper and Knife River Reaches will focus on restoring riparian benches at lower relative elevations better fitted to the regulated/managed flow regime. This approach will improve subsurface groundwater connection, support a more resilient riparian vegetation community, and reduce adjacent properties from channel migration hazards due to bank erosion. Ultimately, successful establishment of native, deep rooted riparian vegetation will result in long-term resiliency to drought, in both short and long term. Unlike traditional hardscaped civil engineering stabilization techniques, implementation of bio-engineered approaches provides solutions that are more resilient over time as vegetation structure above and below ground becomes more established and self-recruiting.

A successful case study of these assumptions was implemented in a previous project phase/reach (Wyoming Boulevard Site, 2017), which is on the North Platte River upstream of the North Casper and Knife River Reaches. This project reach included construction of a new readily accessible floodplain with stormwater treatment wetland oxbow lakes, in a stretch of river that previously was located immediately adjacent to a hard-armored bank along Wyoming Boulevard. This section of road had a history of highway flooding during large runoff events and high river flows, with no riparian vegetation along the river margins. Following the project completion, the newly created riparian floodplain alleviated flooding on the boulevard and supported a now densely vegetated riparian vegetation community started from both imported plantings and naturally recruited volunteer plants deposited during high water.

Will the proposed project reduce greenhouse gas emissions by sequestering carbon in soils, grasses, trees, and other vegetation? Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution? Does the proposed project contribute to climate change resiliency in other ways not described above?

The North Platte River Restoration Project – North Casper and Knife River Reaches will reduce greenhouse gas emissions through carbon sequestration services that healthy riparian vegetation communities provide. Post-restoration, re-established riparian species including cottonwood, willow, and box elder trees, native riparian shrubs, and herbaceous riparian communities will all provide sequestration services. Additionally, increased shade from healthy riparian vegetation communities, water filtering wetlands, and an active well-wetted floodplain will buffer high water temperatures creating a refuge for cold and cool water dependent aquatic species while coincidentally providing water filtering ecosystem services.

Disadvantaged or Underserved Communities: E.O. 14008 and E.O. 13985 affirm the advancement of environmental justice and equity for all through the development and funding of programs to invest in disadvantaged or underserved communities. Please use the Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool, available online at Explore the map – Climate & Economic Justice Screening Tool (https://screeningtool.geoplatform.gov) to identify any disadvantaged communities that will benefit from your project. If applicable, describe how the project benefits those disadvantaged or

underserved communities identified using the tool. For example, does the project improve water quality, provide economic growth opportunities, improve or expand public access to nature, or provide other benefits in a disadvantaged or underserved community?

North Casper and Knife River Reaches are within Census Tract 560250002000, which is identified as disadvantaged in Climate Change and Health. The Climate Change issues identified for this tract include an increased flood and wildfire risk, lower life expectancy and low-income.

The communities within this census tract will benefit from the restoration of the North Casper and Knife River Reaches. Project elements include the reduction of steep banks through North Casper Reach which will serve to mitigate bank erosion and improve public health and safety. Removing Russian olives and treating other invasive species such as cheatgrass and knapweed will reduce the threat of fire. The re-establishment of native plant communities will provide shade, improve pedestrian access to the river and protect the banks during flood events resulting in a more resilient riverine environment. With science indicating that health can be improved by time spent in nature and green space, a healthy riparian area in the neighborhood would benefit the residents. The restoration of the Knife River Reach will reduce the potential for negative impacts to the Sam H. Hobbs Regional Wastewater Facility which would eliminate the need to further increase the service and sewage rates. Additional indirect benefits may be realized if conservation and land acquisitions are successfully completed in support of this planning project.

Tribal Benefits: The Department of the Interior is committed to strengthening tribal sovereignty and the fulfillment of Federal Tribal trust responsibilities. The President's memorandum, *Tribal Consultation and Strengthening Nation-to Nation Relationships*, asserts the importance of honoring the Federal government's commitments to Tribal Nations.

If applicable, describe how the project directly serves and/or benefits a Tribe, supports Tribally led conservation and restoration priorities, and/or if the project incorporates or benefits Indigenous Traditional Knowledge and practices.
Does the proposed project support Reclamation's Tribal trust responsibilities or a Reclamation activity with a Tribe?

Tribal benefits are not applicable to this project.

Project Budget (D.2.2.3)

Table 1. Summary of Non-Federal and Federal Funding Sources

FUNDING SOURCES	**AMOUNT**
Non-Federal Entities	
1.City of Casper	$246,083
2.City of Casper – in-kind	$35,788.26*

3. Wyoming Game & Fish Department	$15,000*
4. Audubon Rockies	$8,500
Non-Federal Subtotal	**$305,370.89**
REQUESTED RECLAMATION FUNDING	**$567,117**

D.2.2.4 Environmental and Cultural Resources Compliance

Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

North Casper and Knife River Reaches study and design will not impact the surrounding environment. However, construction design will be informed by the desire to minimize impacts to surrounding environments during implementation including the use of better management practices. These may include wetting soils if dust pollution becomes an issue, using straw waddles to minimize unnecessary sediment contributions to the North Platte River, monitoring downstream North Platte River turbidity in compliance with the Wyoming Department of Environmental Quality, avoiding unnecessary disturbance to established vegetation communities whenever possible, and completing all workout outside of any seasonal fish and wildlife restriction dates.

Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?

North Casper and Knife River Reaches currently host habitat for the UTE Ladies'-tress (Threatened and subject to a United States Fish and Wildlife Recovery Plan). Restoration activities would restore alluvial banks, point bars, floodplains, and wetland areas that this species inhabits. Migratory birds and bald and golden eagles are known to nest and feed in the project area. The area may also contain nesting habitat for various raptor species. A known best management practice is to have no surface- disturbing activity within a mile radius of an active nest from February 1 to July 31. As collaborators on the project, Wyoming Game and Fish, Casper District Bureau of Land Management, and Audubon Rockies staff will be involved in design and scheduling.

Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as "Waters of the United States"? If so, please describe and estimate any impacts the proposed project may have.

North Casper and Knife River Reaches fall within "Waters of the United States" as defined in the CWA. The proposed projects will result in a net gain of wetlands and an improvement of health and function of the North Platte River.

When was the water delivery system constructed?

Casper's water system dates back to the late 1890's when water was piped from Elkhorn Creek into Casper. As Casper's population and water demand continued to grow, water was also sourced from Sage Creek and later the North Platte River. Today, the North Platte River is the Central Wyoming Regional Water System's sole source of drinking water. The existing wellfields, Morad and Casper wellfields, were put into service beginning on the 1920's. Hand dug wells were installed in the 1920's to the 1950's, a wood stave infiltration gallery in the 1930's, three Ranney horizontal wells in 1958, and drilled wells in the 1950's, 1980's and 1990's. Numerous wellfield, treatment facility, and water distribution system expansions

and improvements have taken place over the years to meet water needs. Currently, roughly 60-65 percent of water demands are met using the year-round ground water supplied by 29 drinking water wells in the Morad and Casper wellfields located along the North Platte River. The remaining 35-40 percent of demand is met using surface water from the North Platte River. EPA has designated the ground water as "ground water under the direct influence of surface water".

Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.

N/A

Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.

According to A Cultural Resource Evaluation of the City of Casper's North Platte River Restoration Project, Natrona County, Wyoming prepared by SWCA Environmental Consultants January 30, 2012 for the North Platte River Environmental Restoration Master Plan, Phase I (2012), three cultural resources (48NA293 [Oregon Trail], 48NA579 [Childs Route of the Oregon Trail], and 48NA2303 [North Casper Clubhouse] are possibly within or in very close proximity to the North Casper Reach. Further field investigations will be needed to verify the historic footprint within the project area and if found, to establish whether or not any segments within the project area are contributing elements of the site. North Casper Clubhouse is listed on the on the NRHP and the Oregon Trail and Childs Route are eligible for listing.

Are there any known archeological sites in the proposed project area?

There are no known archeological sites within the proposed project areas. PRRC will work with SHPO during the planning and permitting process to ensure any archeological sites that are present are avoided at all costs.

Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?

North Casper and Knife River Reaches study and design will not have a disproportionately high and adverse effect on low income or minority populations. The North Casper Reach is within Census Tract 560250002000, which is identified as disadvantaged in Climate Change and Health. Flood risk, wildfire risk and low income are the Climate Change issues. Low life expectancy and low income are the Health issues. It will be important that study and design of these river reaches utilizes this information and more to inform design to address these issues. River restoration in these reaches can decrease flood risk by improving floodplain characteristics and wildfire risk by reducing invasive cheatgrass. Science is indicating that health can be improved by time in nature and green spaces. River restoration can bring improved access to the riparian area for the residents of this Census Tract.

Will the proposed project limit access to, and ceremonial use of, Indian sacred sites or result in other impacts on tribal lands?

N/A

Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?

As a study and design project, North Casper and Knife River Reaches will not directly impact noxious weeds. However, the restoration construction project in these reaches will reduce the continued existence and spread of noxious weeds and non- native invasive species, specifically Russian olive trees. Through an aggressive removal plan that includes an annual monitoring and treatment plan, Russian olives will be controlled. PRRC have been performing the removal, monitoring, and retreat/removal cycle for Russian olives since 2007 in several ways. First, Natrona County Weed and Pest is a collaborator on the project and has provided retreatment with herbicide, where appropriate. In the water wellfields, herbicide is not appropriate. A citizen science protocol and Collector App was developed and its effectiveness tested through quality assurance/quality control by a qualified third party. The citizen science app for Russian olives is used annually with a team of volunteers. The team consists of people, trained to identify Russian olive regrowth and mark GPS coordinates where regrowth occurs, who are joined by dig teams who hand dig out seedling Russian olives. These protocols will be followed in the North Casper and Knife River Reaches. Additionally, during future construction phases, better management practices will be used including ensuring all equipment used in restoration are free of noxious and invasive species.

D.2.2.5 Required Permits or Approvals

No permits will be required for this project, as the project is to study and produce 60% design for North Casper and Knife River Reaches, though obtaining permits and approvals for

construction will be part of the 60% design process. Permits from Wyoming Department of Environmental Quality and USACE will be required to move forward in taking design to 100% and subsequently constructing the project.

D.2.2.6 Overlap or Duplication of Effort Statement

This grant proposal for North Platte River Restoration – North Casper and Knife River Reaches does not in any way duplicate any proposal or project that has been or will be submitted for funding consideration to any other potential funding source.

D.2.2.7 Conflict of Interest Disclosure Statement

There are no actual or potential conflicts of interest with the applicant, City of Casper, or its employees including the procurement of supplies, equipment, construction, and services. Further, City of Casper has internal controls and policies that identify, disclose, and eliminate conflicts of interest, including through its bidding and contract award process. City of Casper accepts responsibility for notifying the Financial Assistance Officer in writing of any conflicts of interest that may arise during the life of the award, including those that have been reported by subrecipients. No funds received under this grant will be used for lobbying activities. All required certifications and disclosures pursuant to 43 CFR§ 18 and U.S.C § 1352 will be filed as required.

D.2.2.8 Uniform Audit Reporting Statement

City of Casper submits a Single Audit Report annually through the Clearinghouse's Internet Data Entry System in accordance with 2 CFR § 200 subpart F. A Single Audit Report was submitted for fiscal year 2022 and is available through the Audit Clearinghouse website. The Employer Identification Number is 83-6000049.

D.2.2.9 SF-LLL: Disclosure of Lobbying Activities

D.2.2.10 Letters of Support

Letters of support from Advance Casper, Audubon Rockies, City of Casper Wastewater Treatment Plant Management, Natrona County Conservation District, Two Fly Foundation, Visit Casper, and Wyoming Game and Fish Department can be found in the Appendix.

D.2.2.12 Official Resolution

Official Resolution is found in the Appendix.

D.2.2.13 Letters of Funding Commitment

Audubon Rockies and Wyoming Game and Fish Department will be providing in-kind support for bird occurrence and density studies, aquatic and riparian existing conditions evaluation (WySQT) and fish population surveys. Their letters of support found in the Appendix are intended to confirm their commitment.

Literature Cited

Stantec (Stantec Consulting Services, Inc.). 2012. North Platte River Environmental Restoration Master Plan - Phase 1. Final Report to the City of Casper, Wyoming.

SWCA Environmental Consultants. 2012. A Cultural Resource Evaluation of the City of Casper's North Platte River Restoration Project, Natrona County, Wyoming

T.C. Dinkins, Stantec to Jolene Martinez, City of Casper, June 1, 2022. Field Observations on the North Platte River Between Bryan Stock Trail and Knife River Property.

Trihydro. 2016. Platte River Revival Restoration Monitoring City of Casper, WY. Trihydro Corporation, Casper, Wyoming

Trihydro. 2017. Citizen Science Russian Olive Monitoring Quality Assurance and Quality Control Report City of Casper, WY. Trihydro Corporation, Casper, Wyoming.

WGFD. 2010. Wyoming Wetlands Conservation Strategy. Wyoming Game and Fish Department, Cheyenne, Wyoming.

WGFD. 2016. Annual Monitoring Report for the North Platte River Restoration Project. Wyoming Game and Fish Department, Cheyenne, Wyoming.

WGFD. 2018. Annual Monitoring Report for the North Platte River Restoration Project. Wyoming Game and Fish Department, Cheyenne, Wyoming.

WGFD. 2019. Annual Monitoring Report for the North Platte River Restoration Project. Wyoming Game and Fish Department, Cheyenne, Wyoming.

WGFD. 2020. Statewide Habitat Plan 2020. Wyoming Game and Fish Department, Cheyenne, Wyoming.

Appendix

ADVANCE CASPER
BUSINESS DRIVEN • COMMUNITY INSPIRED

May 1619

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

RE: WaterSMART Aquatic Ecosystem Restoration Projects For Fiscal Year 2023 – Funding Opportunity No. R23AS00106

Dear NOFO Team:

Advance Casper, Natrona County's Economic Development Organization, is writing to express our strong support for the City of Casper's application for a *WaterSMART Acquatic Ecosystem Restoration Projects for Fiscal Year 2023 Grant.* The scope of projects the City of Casper plans to undertakeis important to the continued economic development and improved livability efforts in Casper, Wyoming. We understand the critical role of environmental sustainability and natural resources in fostering economic growth and prosperity.

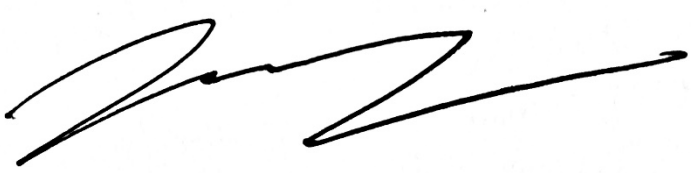
The City of Casper does not take the restoration of the North Platte River lightly and The City's North Platte River Restoration Project is a visionary initiative that seeks to complete crucial environmental studies and cover partial design costs for a holistic river and riparian project to restore and preserve the ecological health of the North Platte. The North Platte River is a vital natural resource that provides numerous economic and recreational benefits to the residents of Casper and the surrounding area.

The benefits of this Project extend far beyond the environmental realm. This Project will help boost the local economy by attracting tourists and outdoor enthusiasts to the area. The river provides excellent opportunities for blue ribbon fly fishing, kayaking, rafting, and other outdoor activities, which generate increased revenue for local businesses such as outfitters, watersport rentals, hotels, restaurants, and retailers year over year.

Moreover, the North Platte River Restoration Project aligns with the broader economic development goals of Casper and the State of Wyoming. The Project will create jobs and stimulate economic growth through the construction and maintenance of river restoration infrastructure. It will also enhance the quality of life for residents, making Casper a more attractive place to live, work, and invest.

In conclusion, I urge the grant committee to support the City of Casper's North Platte Aquatic Ecosystem Restoration Projects. This visionary initiative represents a unique opportunity to promote environmental sustainability, economic growth, and community development in Casper, Wyoming. Thank you for your consideration.

Sincerely,



Justin Farley, CEO/President of Advance Casper Economic Development

ADVANCE CASPER
139 W. 2nd St, #1-D
Casper, WY 82601
307-577-7011
YourFriends@AdvanceCasper.com
ADVANCECASPER.COM

KNIFE RIVER CORPORATION
AN MDU RESOURCES COMPANY

www.kniferiver.com

Knife River Corporation
Western Montana Division
4800 Wilkie Road
Missoula, MT 59846

May 22, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
PO Box 25007, MS 84-27133
Denver, CO 80225

RE: WaterSMART Aquatic Ecosystem Restoration Projects for Fiscal Year (FY) 2023

Mr. Conner,

JTL Group Inc., dba Knife River currently owns and operates a sand and gravel operation along the North Platte River and within the boundary of the City of Casper's scope of restoration for their proposed WaterSMART Aquatic Ecosystem Restoration Project. Mining operations at the Casper Sand and Gravel Operation began about 1945. Casper Concrete Company was the original operator of the mine, and the materials excavated were utilized for concrete manufacturing, construction fill, and maintenance operations (i.e., road sand). Casper Concrete Company now operates under the name JTL Group, Inc. dba Knife River. The Casper Sand and Gravel Operation has been and will continue to be one of the major sources for sand in the Casper area.

The City of Casper, in collaboration with the Platte River Revival Committees that represent Wyoming Game and Fish Department, Casper District Bureau of Land Management, Natrona County Weed and Pest, Two Fly Foundation, and more, will complete environmental and existing condition studies, 60% design, and acquire necessary permits for a holistic river and riparian restoration project along two reaches of the North Platte River that flows through Casper, by December 2025.

The North Platte River is a significant resource to Casper and Wyoming in providing drinking water, aquatic/riparian ecosystem benefits, and recreational use in a high plains desert state where riparian areas are rare. The river is a blue-ribbon trout fishery, but these reaches suffer from significant in-stream bed/bank instabilities and channel corridor alterations. Reach specific examples of critical issues to be addressed by the restoration project include: bank erosion including along the banks of the City's wastewater treatment plant that threaten a breach of the sludge settling beds, a lack of appropriate riffle-pool channel morphology, poor bedform complexity, alteration in historic hydrology, limited floodplain connectivity, contaminated groundwater flows from the closed and unlined municipal landfill, relic industrial gravel mining operations that leave the river vulnerable to avulsion, and low-quality riparian vegetation community dominated by invasive Russian olive trees. These conditions have resulted in degraded habitat for trout as well as native aquatic and terrestrial species. These characteristics have also contributed to reduced ecological function, degraded aesthetic values, and impaired river recreation. This project has the potential to restore over 3 miles of river channel, improve adjacent riparian health, create

Knife River Corporation
Western Montana Division
4800 Wilkie Road
Missoula, MT 59846

various types of new wetlands, create an Important Bird Area, protect adjacent critical infrastructure, and improve recreational opportunities/experiences. The big picture restoration goals/objectives and these specific project reaches were identified and conceived by the 2012 North Platte River Environmental Restoration Master Plan, which has been endorsed and supported by elected officials at the local and State levels, conservation groups, government agencies, and water users.

Knife River has experienced increased erosion along the riverbank and flooding events during periods of high water and has recently engaged in discussion with the Corp of Engineers to secure a permit for bank stabilization activities. During our meeting, we discussed the unintentional impacts that bank stabilization can have downstream.

Knife River strongly believes that the City's proposal provides a more holistic approach to restoration then individual projects could provide. In addition to protecting critical infrastructure through bank stabilization, JTL Group fully supports the City's plan to restore over 3 miles of river channel, improve adjacent riparian health, create various types of new wetlands, create an Important Bird Area, and improve recreational opportunities/experiences.

Knife River has a long history of working with the City of Casper and believes that taking care of our employees, our customers, and our communities by operating with integrity is an integral part of our business. We look forward to the opportunity to work with the City of Casper in regard to their proposed restoration of the North Platte River and fully supports their request for funding through the WaterSMART Aquatic Ecosystem Restoration Project.

Please feel free to contact me at (406) 876-4637 with any questions for Knife River concerning this restoration effort proposed by the City of Casper's Regional Wastewater System.

Respectfully submitted,

Joseph Smith

Joe Smith
Regional Environmental Manager
Knife River Corporation
Intermountain Region
joe.smith@kniferiver.com
(406)-876-4637 (Cell)

Natrona County Conservation District
5880 Enterprise Drive, Suite 100 ● Casper, Wyoming 82609 ● 307-261-5436, ext. 4

May 23, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25077, MS 84-27133
Denver, CO 80225

Dear NOFO Team:

The Natrona County Conservation District (NCCD) Board of Supervisors is writing in support of the City of Casper's (City) application for a *WaterSMART Aquatic Ecosystem Restoration Project for Fiscal Year 2023 – Funding Opportunity No. R23AS00106* grant through the Department of Interior, Bureau of Reclamation, Water Resources and Planning Office.

The NCCD has worked closely with the agricultural producers of Natrona County to implement water quantity and water quality best management practices since the 1990s. This work ultimately resulted in the de-listing of 36.8 miles of the North Platte River from the Wyoming Department of Environmental Quality's 2016/2018 Integrated 305(b) and 303(d) Report. The NCCD continues to work with landowners to improve the water quality throughout the watershed.

The North Platte River restoration efforts by the City of Casper have been extraordinary throughout the years, and this project would assist in the continuation of their work. The NCCD recommends the City of Casper for funding through the WaterSMART Aquatic Ecosystem Restoration Project.

Sincerely,

Lisa Ogden

Lisa Ogden
District Manager
Natrona County Conservation District

May 15, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Re: WaterSMART Aquatic Ecosystem Restoration Projects for Fiscal Year 2023 – Funding No. R23AS00106

Dear NOFO Team:

The Two Fly Foundation, LLC, would like to ask for your favorable consideration of a grant request by the City of Casper for the ecological, in-river restoration, and bank stabilization of the river reaches named North Casper and Knife River. These reaches are within the City of Casper, Wyoming.

As you may already know, the North Platte River below Grey Reef Dam 20 miles west of these reaches have been labeled Blue Ribbon quality for many years. You may not know that the in-town North Platte River has always been a section that is fished by guides for big browns; and as a result of some restoration projects by the Platte River Revival, has become a very attractive trip for rainbow and brown trout by guides and their clients.

The Two Fly Foundation has been intimately involved with fish Guide Shops and individual guides for 14 years as our philanthropic activity now requires up to 36 guide boats for two days in early May each year to provide our participants with the best experience possible in the hope of getting large donations for Wyoming charities.

We have donated $3.1 million to 27 Wyoming charities as a result of fishing on the North Platte River. Part of the money donated by the Two Fly Foundation now totaling $533,000 has gone to the Platte River Revival to enhance the aquatic ecosystem of the North Platte River. These participants come back to Casper bringing friends, family, or business acquaintances every year, booking hotel rooms, eating at restaurants, buying local "Western" clothing, buying fishing equipment and more. As a result of the quality of the river, four major guide outfitters employ more than 50 guides that annually take two persons/day for six months of the year. Fishing on the North Platte is responsible for a huge influx of out-of-state money for Casper and Wyoming.

In addition to fishing, the river in town supports surfing at the White-Water Park, kayaking, tubing, general boating of all types, and general touring along the banks of the river to residents and tourists alike. With the help of a grant from the Bureau of Reclamation, two more in-town reaches could offer tourists and citizens an additional place to enjoy the river's aesthetics, opportunities, and experience the great outdoors of Casper and Wyoming.

Thank you for your consideration.

Yours very truly,

Tom E. Swanson
Board Member
Two Fly Foundation, LLC

CASPER AREA CONVENTION
& VISITORS BUREAU
139 WEST 2nd STREET, SUITE 1B
CASPER, WYOMING 82601

May 15, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Dear NOFO Team:

Visit Casper is writing in support of the City of Casper's (City) application for a *WaterSMART* Aquatic *Ecosystem Restoration Projects For Fiscal Year 2023* grant through the Department of the Interior, Bureau of Reclamation, Water Resources and Planning Office.

It is our understanding that the City of Casper, in collaboration with the Platte River Revival Committees that represent Wyoming Game and Fish Department, Casper District Bureau of Land Management, Natrona County Weed and Pest, Two Fly Foundation, and more, will complete environmental and existing condition studies, 60% design, and acquire necessary permits for a holistic river and riparian restoration project along two reaches of the North Platte River that flows through Casper, by December 2025. With our focus on tourism in Casper and Natrona County, Visit Casper believes this commitment to water quality and realignment to natural habitat on the North Platte will be an extreme benefit to our community recreationally and ecologically. This project will only enhance many of the river restoration and related projects that the City has already committed to or executed. The project will have a direct impact on our local economy via tourism, events, urban redevelopment, community improvement, and increased property value.

Thank you for your consideration and please do not hesitate to contact me should you have any questions on our organizational support of this wonderful project.

Sincerely,

Tyler Daugherty, CEO
Visit Casper
139 W. 2nd Street, Casper, WY 82601
307-234-5362
tyler@VisitCasper.com

CITY OF CASPER
Public Services Department
200 North David Street
Casper, Wyoming 82601

May 11, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

RE: WaterSMART Aquatic Ecosystem Restoration Projects For Fiscal Year 2023 -- Funding Opportunity No. R23AS00106

Dear NOFO Team:

Management staff for the City of Casper (City) owned and operated Regional Wastewater System (RWWS) are writing in support of the City's application for a *WaterSMART Aquatic Ecosystem Restoration Projects For Fiscal Year 2023* grant through the Department of the Interior, Bureau of Reclamation, Water Resources and Planning Office. The City will complete an environmental study, evaluate existing conditions, provide 60% design, and acquire necessary permits for a holistic river and riparian restoration project along two reaches of the North Platte River that flows through Casper. The big picture goals and objectives of the proposed project to restore over three miles of river channel, improve adjacent riparian health, create various types of new wetlands, protect adjacent critical infrastructure, and improve recreational opportunities/experiences, are in perfect alignment with the goals of the RWWS.

The RWWS provides regional wastewater collection and centralized wastewater treatment services to roughly 70,000 people located throughout the entire region including City of Casper, City of Mills, Town of Evansville, Wardwell Water and Sewer District, Town of Bar Nunn, Natrona County International Airport, and the subdivisions of Vista West, Ardon, Westland Park, Skyline, and Six Mile Draw. As providers of life sustaining water and wastewater services and as stewards of our communities' resources, our mission is to provide these services in a safe, reliable cost-effective manner that maintains a sustainable environment and meets the needs of current and future generations.

The City's proposed river restoration project addresses many of our shared concerns. For example, as a major point source treated effluent discharger to the North Platte River, Wyoming Pollutant Discharge Elimination System Program Permit WYO0021920, protection of the receiving waters and native aquatic and terrestrial species health is of critical concern to us.

Effluent mixing zone and/or alternative effluent discharge methods are studies and subsequent implementation that would be highly beneficial to public health and safety as well as the community's natural resources. Additional common project goals include water quality improvement, bank stabilization, stormwater management, minimization of erosion, and wildlife enhancement. Currently, facility physical security and protection of infrastructure is in jeopardy due to bank stabilization issues.

RWWS management is both excited about this project and honored to partner with agencies such as the Wyoming Game and Fish Department, Casper District Bureau of Land Management, Natrona County Weed and Pest, Two Fly Foundation, and others. Embracing the difficult restoration challenges in these two stretches of the North Platte River as a cohesive Team provides the best opportunity for success. We are extremely confident that the opportunity provided by this grant will enable us, and our partner agencies, to restore this stretch of river located in a largely industrial area, improve water quality, and create a healthy riparian ecosystem through the entire three-mile reach. Our customers and neighbors expect and deserve this type of environmental management effort. Again, we are fully committed and proud to be a part of this endeavor.

Please feel free to contact me at (307) 235-8341 should you need any further information concerning the RWWS's support for this important project.

Sincerely,

Andrew Beamer, P.E.
Public Services Director

WYOMING GAME AND FISH DEPARTMENT

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

GOVERNOR
Mark Gordon
DIRECTOR
Brian R. Nesvik
COMMISSIONERS
Ralph Brokaw-President
Richard Ladwig-Vice President
Mark Jolovich
Ashlee Lundvall
Kenneth D. Roberts
John J. Masterson
Rusty Bell

May 30, 2023

Bureau of Reclamation
Financial Assistance Operations Section
Attn: NOFO Team
P.O. Box 25007, MS 84-27133
Denver, CO 80225

RE: City of Casper's North Platte River Restoration Knife River and North Casper Restoration Reach Letter of Support and Collaboration

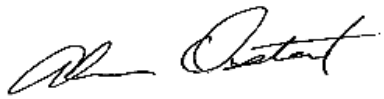
Dear NOFO Team,

The Wyoming Game and Fish Department (WGFD) fully supports the City of Casper's North Platte River Knife River and North Casper Reach Restoration. The WGFD recognizes that the City's proposed plans will improve stream channel complexity, floodplain connectivity, bank stability and erosion rate, groundwater recharge, and riparian, backwater, and wetland habitats. The project will also enhance recreational fishing, remove invasive vegetation species, establish native riparian communities, filter storm water, and protect the river from capturing a Knife River gravel pit and a City of Casper waste water settling pond.

The WGFD has agreed to complete an aquatic and riparian existing conditions evaluation as well as fishery population surveys for both reaches. The WGFD has partnered extensively with the City of Casper on previous North Platte River Restoration reaches by creating a monitoring plan, conducting five years of post-completion monitoring, writing three monitoring reports, providing funding, and reviewing restoration designs. The WGFD will continue assisting the City of Casper throughout the remaining reaches.

Finally, the Knife River and North Casper reaches are within recognized Statewide Habitat Plan priority areas including Stream Restoration, Blue Ribbon Fishery, and Riparian Restoration. We therefore support this project for funding through the WaterSMART Environmental Water Resources Projects for Fiscal Year 2023.

Sincerely,



Alan Osterland
Chief of Fisheries

Wyoming Game and Fish Department
5400 Bishop Boulevard
Cheyenne, WY 82006

AO/JM

cc: Jolene Martinez, Assistant to the City Manager, City of Casper
Paul Dey, Aquatic Habitat Program Manager, WGFD
Lara Gertsch, Assistant Aquatic Habitat Manager, WGFD
Matt Hahn, Casper Fisheries Management Supervisor, WGFD
Matt Pollock, Casper Habitat Access Supervisor, WGFD
John McCoy, Aquatic Habitat Biologist, WGFD
File

I hereby certify that this document is a true and correct copy of the original.

City Clerk or Deputy Clerk

SEAL OF THE CITY OF CASPER, WYOMING CLERK

RESOLUTION NO. 23-88

A RESOLUTION AUTHORIZING SUBMISSION OF AN APPLICATION TO THE WATERSMART AQUATIC ECOSYSTEM RESTORATION PROJECTS GRANT PROGRAM

WHEREAS, the City of Casper has identified the need to restore the North Platte River through Casper and has identified the need to study and design restoration for two identified reaches of the river that will result in significant improvement to the aquatic ecosystem and provide regional benefits; and,

WHEREAS, the river restoration project will improve stream channel structure and complexity, improve flood plain connectivity, protect and stabilize riverbanks to reduce erosion, influence water temperature, improve riparian habitat, restore natural wetlands, divert stormwater flow into wetlands, and enhance river-based recreation; and,

WHEREAS, river restoration results in functioning aquatic ecosystems that provide habitat for fish and wildlife, improve water quality, store excess carbon, mitigate the impacts of drought and flood events, offer wide-ranging benefits for people, and support multiple water uses; and,

WHEREAS, the WaterSMART Aquatic Ecosystem Restoration Projects grant is designed to assist with funding study and design of aquatic ecosystem restoration projects and can provide up to $2,000,000 with a match of at least 35% in cash and in-kind services; and,

WHEREAS, required grant match can be met with cash and in-kind work from a combination of River Fund reserves, other donations, and in-kind work from the City of Casper staff, volunteers, and other businesses, foundations, organizations and agencies who have a track record of cooperating on the river restoration work; and,

WHEREAS, the City of Casper has the legal authority to enter into an agreement with the U.S. Bureau of Reclamation; and,

WHEREAS, the Casper City Council supports the application and will review the contents prior to application; and,

WHEREAS, the City of Casper will work with the U.S. Bureau of Reclamation to meet established deadlines for entering into a grant or cooperative agreement.

NOW, THEREFORE, BE IT RESOLVED BY THE GOVERNING BODY OF THE CITY OF CASPER, WYOMING: That the Mayor is hereby authorized and directed to execute and the City Clerk to attest, an application to the WaterSMART Aquatic Ecosystem Restoration Projects grant program in the amount of up to $2,000,000 for planning and design of two reaches of the river restoration project.

BE IT FURTHER RESOLVED: That the governing body of the City of Casper adopts the WHEREAS clauses set forth above for purposes complying with Section D.2.2.12 of the Notice of Opportunity No. R23AS00106.

PASSED, APPROVED AND ADOPTED this 2nd day of May, 2023.

APPROVED AS TO FORM:

Eric K. Nelson

ATTEST:

Fleur D. Tremel
City Clerk

SEAL OF THE CITY OF CASPER, WYOMING CITY CLERK

CITY OF CASPER, WYOMING
A Municipal Corporation

Bruce Knell
Mayor