Wyoming Water Development Commission (WWDC)
Professional Services 24-0436PS
SUPPLEMENTAL INFORMATION

PROJECT AREA: Upper Colorado River Basin in Wyoming

SUMMARY:
The state of Wyoming, Water Development Commission (WWDC) was awarded a grant from the Regional Conservation Partnership Program (RCPP) through the United States Department of Agriculture (USDA)-Natural Resource Conservation Service (NRCS) to provide drought resiliency through improved water-use efficiency, decreased system water losses, and improved water management in the Upper Colorado River Basin in Wyoming that includes the Green River and Little Snake River watersheds. The Wyoming Water Development Office (WWDO) has authority to administer the RCPP grant on behalf of the WWDC. Through this RCPP project, WWDO, NRCS, and contributing partners will implement NRCS practices, such as converting open canals to pipe, improving diversions, lining conveyances, and bank stabilization. Technical assistance is required to support these efforts.

SUPPLEMENTAL INFORMATION MATERIALS:
Supplemental information materials (including this document, professional services announcement, list of USDA-NRCS practices, project area map, and required forms) are available by contacting Sarah Bargsten, Grants Manager at the WWDO at (307) 777-7626 or at:
https://wwdc.state.wy.us/consultants/consultant_selection.html

GENERAL INFORMATION:
WWDO is seeking Professional Services in accordance with Wyoming Statute (W.S.) § 9-23-101 through 107 for technical assistance to design and oversee construction of conservation practices that meet USDA-NRCS standards and specifications. A minimum of two (2) contracts, anticipated to be two (2) years in duration, will be administered by WWDO and funded by the NRCS RCPP grant. Specific task orders will be determined based on projects brought forth from water right holders (i.e., producers) and water management entities after contract execution, and may require expertise in: engineering, geology, agronomy, surveying, biology (including aquatic ecology), hydrology, CAD, GIS, and others as needed. Selected firms must comply with all applicable local, state, and federal laws and rules associated with this type of work. Firms offering professional services must provide Board-issued Wyoming license number(s). The WWDO grants manager shall direct work through task orders that specify activities, timeline, deliverables, and associated costs. Work shall meet standards and specifications provided by NRCS policy and technical documents available at: https://directives.sc.egov.usda.gov/

TECHNICAL ASSISTANCE OVERVIEW:
Examples of tasks that support implementation of conservation practices are summarized below. Note, additional tasks may be required to accomplish RCPP project goals and grant requirements.

Engineering Designs must be stamped and signed by a Licensed Professional Engineer registered in the state of Wyoming. Investigation work must be completed by individuals qualified in accordance with the appropriate NRCS standard or document. Engineering design tasks may include, but are not limited to: design surveys; engineering investigations (e.g., geotechnical, hydrologic, and hydraulic); preparation of design folders and reports; preparation of construction plans to scale, construction specifications, material specifications; preparation of cost estimates; preparation of bid schedules, preparation of construction performance times; preparation of quality assurance plans; preparation of operations and maintenance plans; and engineering support during construction for a variety of project types, design and implementation of practices.

Engineering designs must be in accordance with the NRCS policy as stated in the General Manual (GM), National Engineering Manual (NEM), National Handbook of Conservation Practices (NHCP), and technical references found in the Technical Releases (TRs), Technical Notes (TNs), and the National Engineering Handbook (NEH). Additional references and guidelines pertinent to the design may include resources from American Society for Testing and Materials (ASTM), American Concrete Institute (ACI), American Society of Civil Engineers (ASCE), International Code Council (ICC), American Water Works Association (AWWA), United States Army Corps of Engineers (USACE), United States Bureau of Reclamation (USBR), American Society of Agricultural and Biological Engineers (ASABE), or other government or industry sources referenced in individual task orders. Other professional standards and specifications can be used with NRCS concurrence.

Projects may require knowledge and experience in all aspects of engineering design for the various types of projects including deep and shallow foundations (bearing capacity, settlement, etc.); earthwork; earthen embankments; reinforced concrete structures; automated and manual water control gates; riprap or gabion placement; timber structures; steel structures; structural fabrication; pipe conduits (concrete, steel or metal, or plastic); timber, steel and concrete piling; sheet piling; channel bank stabilization measures; ditch blocks; grade stabilization structures; earthen divisions; grassed waterways; lined waterways; new floodwater retarding structures; grade stabilization; multi-purpose dams; and rehabilitation of flood control and water retention dams and other watershed structures. Additional types of projects include engineering design and/or rehabilitation of other soil and water resource related structures, agricultural waste systems (confined and unconfined), conservation systems and pollution control and prevention plans (e.g., Spill Prevention, Control and Countermeasures (SPCC) plan) development. Data collection to support NRCS in their environmental and cultural review process may be required. This is not an all-inclusive list of associated activities that could be required to be performed but a representative sample of the variety of projects that could be performed.

The phases of engineering design are summarized below.

- **Phase 1 - Plan of Work**
  Review the project documents and make necessary field visits in order to prepare a detailed plan of work to describe the scope and intensity of investigations necessary to accomplish the assigned work. The firm must review all available existing technical documents/reports and findings from any previous work that may have been completed and incorporate them into the plan as appropriate. The plan must identify the objectives of the proposed work, identify the tasks necessary to accomplish the work, determine data requirements (both existing and to be collected), set a schedule for completing each task, and determine the cost of accomplishing each task. Previously completed investigations and/or data that support the design shall be identified in the respective task order.

- **Phase 2 - Supporting Documentation**
  Develop the necessary data to design the identified project as follows: perform field surveys (e.g., topographic, bathymetric, planimetric, magnetometer, and horizontal and vertical control surveys), mapping; geologic investigations; seismic loadings; obtaining field soil samples; performing field and laboratory testing; preparing geology and soil mechanic reports; identifying borrow sources if necessary; and collecting basic hydrologic data and parameters. Investigation and evaluation of existing features will be performed as necessary.

- **Phase 3 - Preliminary Design**
  Develop preliminary design of project in accordance with NRCS policy as stated in the GM, NEM, NHCP, and technical references found in the TRs, TNs and NEH. Structural design may include embankments, concrete, roller compacted concrete, rock riprap, timber, and other components of planned measures.

Support the preliminary design by test data, calculations, hydrology, geologic, geotechnical, structural, hydraulic, and dimensional calculations, and to scale design drawings.

- **Phase 4 - Final Design**
  Prepare final design, design report, detailed construction drawings, specifications for construction and materials, material quantities, bid schedule, cost estimates, construction schedule, inspection plan and first filing plan, if applicable. The design report must document all pertinent engineering analyses performed and must include all calculations, assumptions and decisions made during the design process. Prepare a quality assurance plan for construction. Prepare an O&M plan. Final construction drawings to scale must be prepared in accordance with NRCS CAD standards per the NEM, Part 541- Drafting and Drawings, and using the currently approved version of CAD available to NRCS.

- **Phase 5 - Construction Period Services**
  Provide services such as reviewing design, drawings and/or specifications and making changes if necessary, providing interpretations of drawings and specifications, reviewing shop drawings, answering Requests for Information (RFI), participating in site visits, and providing consultation services as requested by the contracting officer. Transfer of as-built drawings to AutoCAD or similar electronic format may be required.

Engineering Design Review, if applicable and requested must be conducted by a Licensed Professional Engineer registered in the state of Wyoming. Work may include but is not limited to independent design reviews for major water resource projects with components such as earthen embankments, roller compacted concrete structures, soil cement structures, earthwork, reinforced concrete structures, automated and manual water control gates, reinforced concrete pipe conduits, plastic and corrugated metal pipe, ag waste systems including the development of the comprehensive nutrient management plan, rock riprap, timber structures, steel structures and structural fabrication, steel, composite and concrete piling, floodplain restoration and channel bank stabilization measures. Floodplain restoration measures are those required to restore floodplain hydrologic and habitat functions such as dikes, canals, soil and water control structures, existing structure removal and planting plans. Designs must meet approval by NRCS staff assigned to this RCPP project.

Design reviews must be in accordance with NRCS policy as stated in the GM, NEM, NEH, NHCP, and technical references found in the TRs, and TNs. Additional references and guidelines pertinent to the design may include resources from ASTM, ACI, ASCE, ICC, AWWA, USACE, USBR, ASABE, or other government or industry sources. Other professional standards can be used with NRCS concurrence.

The selected firm will be required to submit a final design review report (100%) for all projects. Design review meetings are not anticipated. Teleconferences, particularly after the design review report is submitted, are anticipated. Design reviews are expected to be completed in 4 to 8 weeks, dependent on the complexity of the design.

Construction Management Services for quality assurance of engineering designs. The firm must be fully knowledgeable about the project design and contract to perform construction management and quality assurance services for various types of projects. The firm must be able to perform any or all operations necessary to provide construction quality assurance (construction inspection) for various types of land-based projects. The firm must use and follow the NRCS NEH, Part 645- Construction Inspection.

Quality assurance activities required may consist of, but are not limited to any part, one or all of the following activities: construction layout (survey), quantity computations, field testing and sampling of construction

materials, record drawings, documentation of daily activities (job diaries) and maintenance of as-built drawings and specifications, onsite inspections, providing interpretation of drawings and specifications, responding to RFIs, monitoring of pollution control compliance activities, cost estimating, scheduling, payroll, safety compliance checks or construction activities, claims management, and the development of accurate and complete quality assurance reports.

The typical project could require knowledge and experience in all aspects of quality assurance activities associated with the design and construction of deep and shallow foundations (bearing capacity, settlement, etc.), earthwork, earthen embankments, reinforced concrete structures, roller compacted concrete, automated and manual water control gates, rock riprap or gabion placement, timber structures, steel structures, structural fabrication, pipe conduits (concrete, steel or metal, or plastic), timber, steel and concrete piling, sheet piling, channel bank stabilization measures, ditch blocks, grade stabilization structures, earthen divisions, grassed waterways, lined waterways, rehabilitation of flood control and water retention dams and other watershed structures located in the project area. This is not an all-inclusive list of associated activities that could be required to be performed but a representative sample of the variety of projects that could be performed.