



**Montezuma County, Colorado  
Request for Qualifications for  
Professional Engineering Services  
May 2018**

Montezuma County hereby issues a Request for Qualifications for Contract Engineering Services. The Scope of Work is outlined below:

**Scope of Work**

Under contract to Montezuma County, prepare engineered design plans, specifications, and bid documents for installation of a replacement vehicle bridge located at the County Road (CR) N crossing of Alkali Creek, Latitude: 37°23'51.50"N, Longitude: 108°38'58.40"W, in conformance with the Montezuma County Land Use Code standards and any other applicable County or State design standards.

During construction, County forces – staff and equipment – will be utilized to the fullest extent possible as determined by the County. The design will be completed to facilitate this goal.

Complete the design to the post-Final Office Review (post-FOR) level. There are no construction funds identified at this time. Once construction funds are identified the Consultant Engineer will be contracted by Montezuma County to finalize the design; complete the Plans, Specifications, and Estimate (PSE) package for advertisement; and provide design support under construction.

Aid Montezuma County in development of an Independent Cost Estimate (ICE) for the project, to include labor, fees, material costs, equipment charges, and all other direct or indirect costs.

The successful engineering firm shall represent Montezuma County over other clients without creating a conflict of interest. Qualifications must include a degree in civil engineering, with current registration as a Professional Engineer in Colorado, and at least five years of experience providing similar professional experience.

**Federal and State Guidelines**

This project must be designed and constructed to meet ADA requirements, as well as any other applicable design standards, including Colorado Department of Transportation (CDOT) design and construction standards; policies; and clearance requirements.

This project is being funded with oversight by the Federal Highway Administration (FHWA), and all work will be coordinated through CDOT. CDOT has determined the contract goal for Disadvantaged Business Enterprise (DBE) participation in this contract will be 6%.

Federal guidelines for reimbursements will be in place. As the project will be federally audited, all invoiced payments by the County must be tracked through respondent's accounting department and fully documented, right up to 'proof of deposit' with firm and into each individual's bank

account so that the County can be reimbursed by CDOT. Invoices for services performed (including work by sub consultants) must meet the requirements of CDOT procedures for consultant billing.

Consultant will be responsible for preparing documents in accordance with requirements of the current federal and state environmental and historical regulations including the National Environmental Policy Act of 1969 (NEPA). The project will likely qualify for Categorical Exclusion for NEPA documentation. Documents will be presented to the County and CDOT for review and then be submitted to the appropriate agency for clearances as applicable.

Proposals should include a letter of interest and will be evaluated not only on past experience for the type of work, but also on the firm's ability to successfully complete the project. Proposals will be screened in accordance with C.R.S. 24-30-1403, the County will review proposals and will evaluate them utilizing the following factors:

- Qualifications
- Approach to work
- Ability to furnish professional services
- Anticipated design concept, and
- Alternative methods of approach for furnishing professional services

Submittals must be received at the designated location at or before the closing date and time for responses. Any proposals received after the scheduled closing time will not be considered. Four (4) copies of the proposal must be placed in a sealed envelope marked "Alkali Creek Bridge Design Services Proposal" and received by the Montezuma County Road and Bridge Superintendent, Montezuma County Road and Bridge Department, 1680 N Dolores Road, Cortez, CO 81321, **no later than** 3:00 p.m. on Wednesday, August 15, 2018.

Awarding of the proposal will be done in accordance with the applicable legal requirements as set forth in the CDOT Local Agency Manual, Project Development, Chapter 5 and C.R.S. Title 24, Article 30, Part 14.

The Montezuma County Board of County Commissioners reserves the right to, to waive any and all informalities or irregularities in the Request for Qualifications process, and the right to disregard all non-conforming, non-responsive, or conditional proposals.

## **PROPOSAL REQUIREMENTS**

The Consultant will provide the following on a routine basis:

- Coordination
- Coordination of all contract activities by the C/PM
- Periodic Reports and Billings
  - The periodic reports and billings required by CDOT Procedural Directive 400.2 (Monitoring Consultant Contracts).
- Minutes of all Meetings:

- The minutes will be completed and provided to the County/PM within five (5) working days after the meeting. When a definable task is discussed during a meeting, the minutes will identify the “Action Item”, the party responsible for accomplishing it, and the proposed completion date.
- General Reports and Submittals
  - In general, all reports and submittals must be approved by the County prior to their content being utilized in follow-up work effort.

**PROJECT DESIGN DATA AND STANDARDS**

**General:** The consultant is responsible for obtaining and ensuring compliance with the most recent CDOT adopted version of the standards and specifications, manuals, and software or as directed by the CDOT/PM. Conflicts in criteria shall be resolved by the CDOT/PM.

**Specific Design Criteria:** The Consultant will use the current CDOT design criteria. The Consultant shall submit any proposed changes to the pertinent criteria to the County at one of the periodic progress meetings prior to initiating design.

**Construction Materials/Methods:** The materials and methods specified for construction will be selected to minimize the initial construction and long-term maintenance cost as well as optimize the amount of construction work that can be completed by Montezuma County forces. Non-typical construction materials and methods must be approved in writing by the County and if applicable by CDOT or other affected entities.

**PROJECT INITIATION AND CONTINUING REQUIREMENTS**

This list establishes the consultant’s individual task responsibility. The consultant shall maintain the ability to perform all work tasks which are indicated below by an ‘X’ in the consultant column, in accordance with the forms and conditions contained herein, and the applicable CDOT standards. Selected work tasks shall be assigned only after coordination and consultation with CDOT. The Consultant is also responsible for coordinating the required work schedule for those tasks accomplished by CDOT and other agencies. The Consultant should review this entire section to identify applicable material. Contact the County Project Manager (County/PM) if clarification is required.

The following activities of communication, project team reviews, conceptual design, data gathering and documentation should be planned by the Consultant and coordinated with the County/PM. The time of their accomplishment will overlap and parallel paths of activity and should be planned to finish the design phase in accordance with the shortest possible schedule. The type and number of meetings, documents, etc., will depend on the category and characteristics of the project work. A project plan shall be developed by the Consultant which satisfies the requirements of the project development. This plan and schedule must be approved by the County Project Manager before starting the work.

|                         | <b>PROJECT INITIATION &amp; CONTINUING REQUIREMENTS</b>   | COUNTY | CONSULTANT |
|-------------------------|---|--------|------------|
| Initial Project Meeting | An initial project kick-off meeting will be held, coordinated by the Consultant, and conducted by the County. The meeting will review the project scope, schedule, key milestones, and project boundary. The meeting may include an on-site inspection to familiarize the entire project team with the character and conditions of the area. The Consultant shall develop an invitation list in coordination with CDOT, send notices with a draft agenda, and provide meeting minutes to all those invited. | X      | X          |
| Project Management Plan | The Consultant shall submit a plan for managing the project, including work assignments, project schedule, document quality assurance program, administrative record, document and agency reviews, and other project needs.   |        | X          |
| Resource Review         | Consultant shall review relevant standards and specifications and document environmental requirements applicable to the project. This task shall include one telephone meeting with CDOT and Montezuma County representatives to discuss the initial work efforts of the project.   | X      | X          |
| Project Area Boundary   | The consultant will perform necessary research and data collection to propose a study area boundary and logical termini for use in future NEPA scoping. The consultant will coordinate with CDOT and Montezuma County staff in order to receive CDOT approval.  |        | X          |
| Project Schedule        | The initial project schedule, to be prepared by the Consultant, will be reviewed with the County Project Manager, CDOT and project team, and refined to provide detail as requested. Modifications shall be made for acceptance by the County and CDOT. The schedule will be reviewed and discussed at regular intervals and updated as necessary.  |        | X          |
| Obtain                  | Some activities will require work on land not   |        | X          |

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| <p>Necessary Trespass Rights and Permits</p>     | <p>controlled by the County. In such cases the Consultant shall obtain the necessary written permission to enter the premises. CDOT Form 730 may be used for this purpose. The Consultant will assist the County with work efforts consisting of the following activities:</p> <ul style="list-style-type: none"> <li>a. Consultant shall develop ownership lists with names and telephone numbers of persons to contact for Right-of-Entry (ROE). Prepare initial mailing list from this effort.</li> <li>b. Consultant shall prepare ROEs for 1st tier properties for field work and other activities as they arise.</li> <li>c. Consultant shall track status of ROEs, when sent, when returned, approved or rejected, conditions, other interested parties and tenants, etc. The ROEs shall apply to CDOT and Consultant personnel.</li> <li>d. Consultant shall obtain permits, as required, for fieldwork activities.</li> </ul>  |  |          |
| <p>Plan and arrange required Traffic Control</p> | <p>Consultant field activities that interfere with traffic operations within existing roadways will require control of traffic. The Consultant will plan and provide any required traffic control for the survey, testing, or the design process. Traffic control operations will be in accordance with the MUTCD. The proposed Method for Handling Traffic (MHT) must be submitted to the appropriate agency whose road or highway is affected. Also, certification of the Traffic Control Supervisor as a Worksite Traffic Supervisor by the American Traffic Safety Services Association (ATSSA) or as a TCS (Traffic Control Supervisor) by the Colorado Contractors Association (CCA) shall be required.</p> <p>The Consultant will work directly with the County personnel to prepare and submit appropriate basic traffic control plans for work tasks which may be required and are within traveled roadway to the affected agency for approval. Any work within an agency's ROW will require a permit and traffic control plan approved in advance by that</p> |  | <p>X</p> |

|                    |   |   |   |
|--------------------|---|---|---|
|                    | agency.   |   |   |
| Progress Meetings  | <p>The County, project team and the Consultant will meet at regular intervals, to coordinate and track work efforts, progress and issues, and to work towards resolution of potential problems. The Consultant Project Manager (CPM) shall provide a status report of the project schedule and budget at regular intervals. The CPM shall conduct the meetings, send meeting notices, agendas and handout materials, and prepare and distribute meeting minutes. The minutes of each meeting shall track and report progress on action items identified during previous meetings. Team meetings will be organized as follows:</p> <ul style="list-style-type: none"> <li>Project and Technical Team Meetings:<br/>Project Team consists of the County, CDOT and CPM. Team will meet on a bi-monthly basis to review status of and manage the overall project progress, schedule, work plan and technical information needed. Team meetings will be used to conduct primary evaluations and decisions. Some of these meetings may be held via teleconference.</li> </ul> | X | X |
| Project Management | <p>The Consultant will coordinate the work tasks being accomplished by all sub-consultants to ensure project work completion on schedule.</p> <p>The Consultant will provide the following on a routine basis:</p> <ul style="list-style-type: none"> <li>Coordination of contract activities.</li> <li>Periodic reports and billings.</li> <li>Minutes of all Meetings: The minutes will be completed and will be provided to the County PM within five (5) working days after the meeting. When a definable task is discussed during a meeting, the minutes will identify the "Action Item," the agency responsible for accomplishing it, and the proposed completion date.</li> </ul>  | X | X |

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|  | <ul style="list-style-type: none"> <li>• Coordination with sub-consultant activities, processing of invoices, review of status reports and products.</li> </ul> |  |  |
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| <b>REPORTS</b>                    |  | <b>CDOT/Other</b> | <b>Consultant</b> |
|-----------------------------------|--|-------------------|-------------------|
| Property Ownership Summary Report | <p>Property lines and ownership will be assembled from assessor’s information. A set of property owner maps will be prepared based on County Assessor tax records that identify ownerships within the study area.</p> <p>The existing ROW lines and the property boundary lines within the study area will be ascertained from information available at the Montezuma County Assessors offices and the Clerk and Records offices. No title research is included in this Scope of Services.</p> <p>All property owner communications must be documented via a negotiators log, consistent with Uniform Act and CDOT standards.</p> <p>Landowner contacts will be made to determine the level of cooperation or opposition to the planned project.</p> |                   | X                 |
| Safety Assessment                 | The consultant shall obtain all available Safety Assessment Reports which identify existing safety problems within the project limits, available on the CDOT website.  |                   | X                 |
| Cost Estimate                     | A cost estimate will be developed for final engineering, ROW, construction engineering and construction.   |                   | X                 |

**DESIGN CRITERIA**

- CDOT Design Specifications
- CDOT Standard Special Provisions
- CDOT/County Project Special Provisions
- CDOT M & S Standards
- Manual on Uniform Traffic Control Devices

**PROJECT COORDINATION**

The Consultant is responsible for assisting in conducting project coordination, agency coordination, and public participation for all three phases of the project relevant to this RFQ.

#### **Overall Project Coordination Planning Phase**

- On-site review
- Assist in conducting a pre-design meeting.
- Solicit input from all concerned agencies.
- Prepare minutes from meeting and distribute to all attendees.

#### **Overall Project Coordination Design Phase**

- Assist in conducting four (4) public participation meetings. County and CDOT review time for F.I.R., F.O.R. and Final Plan Review submittals will be approximately 3 weeks each (approximately 9 weeks total).
- Periodic submittal and review of conceptual designs and plan formats during design to assure that plans will meet County and CDOT standards.
- The consultant will be required to prepare 24" x 36" exhibits and attend a public meeting to assist in explaining the project and answering questions. The meeting is planned for a time after the FIR.
- The consultant will need to provide the following:
  - Monthly status reports
  - Design schedule with monthly updates (or as required)
  - Minutes of meetings

#### **NEPA & FWHA CLEARANCES**

- Hazmat- Simple Initial Site Assessment with a determination of lead-based paint and asbestos containing materials.
- Threatened and Endangered species for both Federal and State listed species.
- Wetland Delineation
- History/Historic Bridge Assessment
- Archaeology

Permits that are likely needed include:

- US Army Corps of Engineers (USACOE) 404 of CWA
- Construction Dewatering
- Floodplain Development Permit (not sure what the County process is)
- Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division (WQCD) Colorado Discharge Permit System (CDPS) permit for stormwater

discharges associated with construction activities

- CDPHE Air Pollution Control Division (APCD) Bridge Demolition Permit

## **SURVEY & PRELIMINARY DESIGN ENGINEERING**

- Survey and preliminary design will be completed.
- Secure all available existing data that will aid in survey.
- Establish vertical and horizontal control points and tie into the High Accuracy Reference Network (HARN).
- Obtain necessary permission to enter private and public lands for survey purposes.
- Prepare and transmit project notification to utilities with a request to identify and locate existing and proposed facilities.
- Conduct ground survey.
- Establish a local baseline for Horizontal Control. Baseline shall be tied to existing property lines. Location of pathway shall be verified to existing right-of-way.
- Extend vertical control from the appropriate bench mark to project site. Consideration should be given to the requirements for project flood plains and hydraulics analysis.
- Gather topographic and descriptive data as needed.
- Coordinate and gather utility horizontal and vertical location data.
- Obtain adequate data to generate profiles and cross sections.
- Obtain hydraulic survey data.
- Tie property corners and land monuments to centerline.
- Process field data.
- Generate site plan with one (1) foot contours, utility locations and all physical data.
- Generate plan and profile.
- Generate cross sections.

## **SOIL INVESTIGATION AND FOUNDATION REPORT**

If a preferred alignment is identified and funding allows a Soil Investigation and Foundation Report for proposed structural improvements including but not limited to bridges, culverts and other necessary designed structures.

- Prepare Preliminary Soil Survey.
- Determine locations for test holes. Test holes for structure shall be as required for foundation design. A minimum of two will be required.
- Collect soil samples and rock cores as required.

- Collect soil samples from channel for scour analysis and riprap design.
- Have specimens tested for material properties as necessary for design
- Prepare and submit for approval a geotechnical report which presents test results and addresses trail-way and structure subsurface conditions, rock excavation and stability, subsidence problems, slope stabilization, pavement design, scour potential, riprap design, construction methods and any subsurface conditions which may affect the project.
- Prepare an engineering geology pedestrian bridge plan sheet and determine foundation design.
- Coordinate with the hydraulic analysis to analyze bedrock scour if necessary.
- Show Test hole locations on Path-way plan and profile sheets.

#### **PRELIMINARY HYDROLOGIC/HYDRAULIC INVESTIGATION REPORT**

- A Hydrologic/Hydraulic investigation will be conducted for the new bridge structure.
- A Letter of Map Revision (LOMR) will be required due to the current FEMA mapping
- Determine bridge configuration and orientation and incorporate into plans.
- Perform scour analysis and incorporate with bridge foundation design.
- Perform channel stability analysis approximately 200 ft. up and down stream of the bridge or as directed to determine impacts of proposed bridge.

#### **STRUCTURAL CONCEPT STUDY**

- Use hydraulic modeling results and preliminary alignment to determine structure layout.
- Determine feasible structure types.

#### **PRELIMINARY STRUCTURAL DESIGN**

- Determine possible span configurations for the bridge.
- Prepare preliminary cost estimate for bridge and roadway.
- Select structure type for recommendation.
- Examine and recommend bridge options.
- Prepare general layout and special detail sketches for the recommended structure type. The consultant will prepare preliminary bridge layouts in accordance with CDOT requirements for local agency projects.
- Prepare general layout and special detail sketches for the recommended structure type. The consultant will prepare preliminary bridge layouts in accordance with CDOT requirements for local agency projects.

## **PRELIMINARY DESIGN REPORT**

The Preliminary Design Report shall be submitted to Montezuma County and CDOT in electronic pdf format. The report shall include, but not be limited to, the following:

- Discussion of alignment options and recommendations.
- Preliminary cost estimate.
- Foundation investigation report.
- Structural type selection report in accordance with CDOT Bridge Design Manual.
- Preliminary Hydraulics report, including input data and output files on a disc.

## **DEVELOP FIELD INSPECTION REVIEW PLANS (FIR) AND COST ESTIMATE**

Roadway, bridge and designs will be produced to the (FIR) level.

- Prepare F.I.R. plan set according to CDOT requirements. These shall be 11" x 17" and to a scale approved by the County.
- Prepare preliminary cost estimate.
- Provide an electronic pdf file of the preliminary plans to Montezuma County and approximately 8 hard copies to CDOT for review and comment.
- Distribute preliminary plans to utilities and other involved agencies for review and comment.

## **FIELD INSPECTION REVIEW**

- Conducting F.I.R. meeting.
- Prepare minutes from F.I.R., both office and site phases, and distribute to all attendees.

## **FINAL HYDRAULIC DESIGN FOR BRIDGES and CULVERTS**

- Review data and information developed from the preliminary hydraulic investigation and update in accordance with Field Inspection Review comments.
- The final hydraulic design will include recommendations for bridge scour and bank erosion protection requirement.
- Prepare final hydraulic report and submit to the County and CDOT for approval. The report shall include supporting water surface profile analysis data, scour/bank erosion protection calculations and channel stability analysis.

- A Letter of Map Revision (LOMR) will be required due to the current FEMA mapping

#### **FINAL BRIDGE STRUCTURAL DESIGN**

- Revise the general layout and proceed with the final design as necessary, to incorporate all comments resulting from the F.I.R. and the approved documents received.
- Perform superstructure design and document with design notes and computer output.
- Perform substructure design and document with design notes and computer output.
- Perform and document independent design check of design and detail notes. See the CDOT Bridge Design Manual for independent check requirements.
- Calculate structure quantities.
- Perform and document independent quantity check.
- Perform and document pedestrian bridge rating according to the CDOT bridge rating manual.

#### **FINAL ROADWAY DESIGN**

- Revise and incorporate any F.I.R. comments that affect the pavement section, typical section and alignment.
- Complete plan drawings and revise as necessary to include decisions made during the F.I.R.
- Perform and document independent design check.
- Calculate quantities.
- Perform and document independent quantity check.

#### **UTILITY RELOCATION COORDINATION**

- Identify final utility relocation needs.
- Submit final utility plans to utility companies.
- Schedule and coordinate meetings with impacted utilities and the County.
- Coordinate and schedule required utility relocations with utility companies.

#### **FINAL PLANS, SPECIFICATIONS AND COST ESTIMATES**

- Incorporate standard details and structural detail sheets from the County and CDOT.
- Revise all plan sheets and design notes to reflect any deficiencies found in the design and detail checks.
- Prepare all drawings in accordance with current CDOT standards and the following:
- Determine the CDOT Standard Special Provisions required for the project. Specific project special provisions may have to be written by the consultant to cover unique or special

situations for this project.

- Prepare engineer's estimate. Construction items and numbers shall correspond to items found in the CDOT's current standard construction item listing. Item numbers, descriptions, units, quantities and extensions will be submitted in a format acceptable to the County and CDOT.
- Submit Plans, Special Provisions and Estimate for review (electronic pdf file to the County and approximately 8 hard copy sets to CDOT). Plan sets shall be 11"x17".

#### **FINAL OFFICE REVIEW (FOR)**

- Conduct the F.O.R. meeting.
- Prepare minutes from the F.O.R. and distribute.

#### **FINAL PLAN REVIEW**

- Revise plans, special provisions, cost estimate, design notes and quantities based on F.O.R. comments.
- Submit revised 11"x17" plans and special provisions to the County and CDOT for review no later than two weeks after the F.O.R. meeting.

#### **FINAL SUBMITTALS**

- Submit a Post FOR plan .pdf file and 3 each 11"x17" paper plan set to the County.
- The following items shall be submitted to CDOT Staff:
- A complete and final set of design notes and independent check notes for each major structure on this project in electronic format.
- Final Post FOR documents for archival purposes.
- A rating package for the new bridge on this project prepared in accordance with the current Bridge Rating Manual.