

Request for Proposals (RFP)

Independent Cost Estimating – Professional Services Scope of Work

I-270 Critical Bridge Replacements Project
Mile Point (MP) 0 to MP 3



PROJECT NUMBERS: FBR 2706-044/C R100-364
PROJECT LOCATION: I-270 near Commerce City, CO
PROJECT CODE: 24947/24527

March 28, 2023

Colorado Department of Transportation
2829 West Howard Place
Denver, CO 80204



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INSTRUCTIONS

This Scope of Work is to serve as a template for Colorado Department of Transportation (CDOT) to develop and negotiate solid contracts with Consultant teams on projects and tasks. The Consultant shall coordinate all activities, tasks, meetings, communications, and deliverables with the CDOT/ Project Director (or his or her designee) for this Project. All submittals will be through the CDOT/Project Director or a designee, who will make appropriate distribution. Upon notice to proceed (NTP), the Consultant shall be responsible and will account for all effort contained in the Final Scope of Work.

This Draft Scope of Work has been reviewed by the Department and reflects a plan of approach based on the known goals. One factor determining the selection of a Consultant is the ability of that Consultant to analyze the project goals, evaluate the work elements, and formulate a work plan. This process may produce new approaches or modification to the Project work elements. Because of that, all Consultants should be aware that the Final Scope of Work for a project will be produced with input from the selected Consultant. The Final Scope of Work submitted will be generated by CDOT personnel and be on CDOT letterhead.



SECTION 1 – PROJECT SPECIFIC INFORMATION

1.1. PROJECT BACKGROUND

The I-270 corridor provides a vital connection from I-70 to I-25. Over 100,000 vehicles per day utilize this corridor to bypass the friction of downtown Denver to move goods, services, information, and people between northern and eastern parts of the city.

Within the I-270 corridor there are eight (8) bridge structures within a one mile stretch between York Street and Vasquez Boulevard that have been the source of many challenges to the mission of this corridor. These structures have been in service for over 50 years and have been requiring frequent emergency repairs. Over 300 emergency repairs have been performed to the bridges along this corridor since 2006. These deck repairs always require significant lane closures affecting travel times in this corridor. This corridor lacks redundancy, and any detours during these emergency repairs require use of local roads or significant out-of-direction movements. Bridge inspections have rated 6 of the 8 bridges in this one-mile segment as ‘poor’, which made them eligible for Bridge & Tunnel Enterprise (BTE) funding for full replacement.

1.2. PROJECT LIMITS

The Project is located within Adams County and Commerce City on I-270 and extends from approximate mile marker (MM) 0.5 to MM 2.5, between York Street and Vasquez Boulevard. The bridges to be replaced are located from approximate MM 1 to MM 2. The bridges to be replaced:

- E-17-ID WB over South Platte River
 - E-17-IE EB over South Platte River
 - E-17-IF WB over Burlington Canal (FRICO)
 - E-17-IG EB over Burlington Canal (FRICO)
 - E-17-IH WB over Brighton Blvd, UPRR & BNSF
 - *E-17-II EB over Brighton Blvd, UPRR & BNSF
 - E-17-IJ WB over E. 60th, BNSF Railroad
 - *E-17-IK EB over E. 60th, BNSF Railroad
- * (NOT eligible for Bridge & Tunnel Enterprise (BTE) funds)

1.3. PROJECT INFORMATION AND DEFINITION

The Independent Cost Estimator (ICE) will provide independent cost estimates during pre-construction, using production-based methodologies and production-based heavy civil estimating software platforms, for comparison and negotiation with the Project’s Contract Manager (CM). Opinion of Probable Construction Cost (OPCC) estimates are expected to occur at different milestones during each work package, followed by the Construction Agreed Price (CAP) final negotiations per CDOT's CMGC manual. The ICE will use HCSS heavy civil estimating software for producing production-based cost estimates. The ICE will also need access to Microsoft Project and/or Primavera P6 scheduling software to review the contractor’s construction schedule.

Once each cost estimate is ready to submit, the ICE will provide summary and detailed cost breakdowns and translate production-based estimates into unit prices and submit them in an estimate format, as required by CDOT. The ICE will provide an independent quantity take-off, and then attend quantity reconciliation meetings with CDOT and the CM. To minimize quantity uncertainty risk and approach consistent pricing, the ICE will work with CDOT to ensure the

quantities are accurate, and errors and omissions are minimized.

The ICE's responsibility at the OPCC meetings is to gain a common understanding of bidding assumptions including means and methods, equipment, material costs, exclusions, and risk assignment, document those assumptions and advise the Project Team if there are more cost-effective ways of accomplishing the work. Following the OPCC meetings, the ICE and CM will adjust their estimates and resubmit a revised cost estimate to CDOT.

The ICE will actively participate in risk management. The ICE will help with risk identification, assessment, cost quantification, and assignment of the probability of occurrence. Formal risk workshops are anticipated to coincide with design/constructability reviews and estimating workshops at each pricing milestone. The ICE will participate in weekly risk conference calls.

The ICE will review and assess the CM's CAP bid/price proposals for recommendation in award of a construction contract.

1.4. WORK DURATION

The time period for this work described in this scope is estimated to begin July 20, 2023 and end December 31, 2024. It is anticipated that the project can be designed and all packages released for construction by the end of 2024.

1.5. PERSONNEL QUALIFICATIONS

- The ICE Project Manager must be approved by the CDOT Contract Administrator.
- All tasks assigned to the Consultant must be conducted by a qualified person on the Consultant team. The qualified person is a professional with the necessary education, certifications (including registrations and licenses), skills, experience, qualities, or attributes to complete a particular task.
- Key Personnel in the Statement of Interest section of the Proposal, see **Section 6** of the ICE RFP, constitutes an agreement by the Proposer to make the Key Personnel available to complete the services of the contract at the level the Project requires. CDOT requires that all Key Personnel be engaged and be available to perform their role to accomplish all services required by this contract. The Key Personnel shall be retained for the life of this contract to the extent practicable and to the extent that such services maximize the quality of work hereunder.

If the Consultant or a subconsultant decides to replace any of its Key Personnel, the Consultant shall notify the Project Director in writing of the desired change. No such changes shall be made until at least two qualified replacement candidates are recommended by the Consultant and a replacement is approved in writing by the Project Director or its designated representative. The approval shall not be unreasonably withheld. Failure of the Consultant to comply with the requirements of this provision may be the cause for CDOT's termination of the contract.

The Project Director or its designated representative will respond to the Consultant's written notice regarding replacement of Key Personnel within fifteen working days after receipt of the list of proposed changes. If the Project Director or its designated representative does not respond within that time, the listed changes shall be deemed to be approved.

If, during the term of the contract, the Project Director or its designated representative determines that the performance of approved Key Personnel is not acceptable, a notification shall be sent to the Consultant. The notification shall include a reasonable timeframe to correct such performance. Thereafter the Consultant may be required to reassign or replace such Key Personnel. If the Project Director or its designated representative notifies the Consultant that certain Key Personnel of a subconsultant should be replaced, the Consultant shall use

its best efforts to replace such Key Personnel within a reasonable time, but not to exceed fifteen working days from the date of the notice.

1.6. SUPPLEMENTAL WORK

Work on other investigations, coordination and tasks as related to the project and as directed by the Project Director shall be limited to the available budget to complete them under the approved task order. The consultant shall not perform work out of scope without prior written approval from the Project Director. Per the contract, subconsultants and vendors may not go over task order or contract budget.

1.7. ADDITIONAL PROJECT INFORMATION

Additional information regarding this project can be found under the Project Delivery tab at the following link:

<https://www.codot.gov/projects/critical-bridge-replacements>

SECTION 2 – PROJECT MANAGEMENT AND COORDINATION

2.1. CDOT CONTACT

The Consultant shall utilize the following project administration contacts for the Project:

- A. The Contract Administrator for this project is:
Katie Dawson, PE
Project Director I-270 Critical Bridges Replacement Project
4670 Holly Street
Denver, CO 80216
W: 303-398-6766
katie.dawson@state.co.us
- B. Active day-to-day administration of the contract will be delegated to the CDOT/PM:
Chris Cameron, PE
Design Project Manager I-270 Critical Bridges Replacement Project
4670 Holly Street
Denver, CO, 80216
W: 303-512-4660
chris.cameron@state.co.us

2.2. PROJECT SCOPE

The Consultant's Project Scope shall include the following detailed items:

- Project Management and Administrative Tasks.
 - The ICE Consultant will assign a project manager who will act as the primary point of contact for CDOT. The project manager will manage the Independent Cost Estimating team. Services performed under the project management task include, but are not limited to, supervision of all ICE work performed for this project; quality of work; communication with team members; project accounting, project startup, monthly invoicing; project closeout; and coordination with the CDOT project manager.
- Initial Kickoff Meeting – The kickoff meeting will be attended by the project manager, lead estimator, cost estimator(s) and scheduler. In preparation for the kickoff meeting the ICE Consultant will review plans and other information on the project provided by CDOT.
 - Meeting topics to be covered at the kickoff meeting include:
 - Introduction to the Project, the CM/GC project delivery method, partnering session and the Project stakeholders.
 - Presentation of Project elements and scope.
 - Project schedule and major milestones
 - Identification of the roles and responsibilities for the team.
 - Process for design input.
 - Communication protocols.
 - Identification of cost management process.
 - Cost/pricing development
 - Project risks identification and tracking
 - Question and answer session.
- Project Staff Meetings.
 - It is estimated the ICE representative will attend 2 Project Staff Meetings a month. Attendance will help resolve differences in assumptions, logic and/or accuracy between estimates/schedules with CDOT, the ICE, the Designer, and the CM.
- Design Coordination Meetings.



- It is estimated the ICE Consultant will assign ICE team members to attend bi-monthly project design coordination meetings. The ICE team member(s) will be expected to keep the ICE team apprised of the design development progress and direction, and to consult weekly with CDOT with input on the design direction. Design coordination meeting attendance will allow the ICE team to remain in close communication with the design team and aware of the project status.
- Initial Approach to Cost & Schedule.
 - ICE Consultant will attend the Initial Approach to Cost & Schedule meeting and will work with CDOT and the CM to establish an approach to cost estimating, scheduling and agree upon means of communicating changes in scope and quantities to ensure a consistent estimating foundation. This will include, but not be limited to, open book discussion of local labor rates, anticipated production rates, and review of construction plan and subcontracting plan. The ICE Consultant will familiarize themselves with each of these topics prior to the meeting. The Initial Approach to Cost & Schedule meeting will be attended by the project manager, lead estimator, scheduler, and the senior cost estimator.
- CAP Proposal Negotiations.
 - The ICE Representative will attend CAP negotiation meetings, until such negotiations yield an agreed upon CAP between CDOT and the CM.
- Opinion of Probable Cost of Construction Estimates.
 - Prior to the OPCC Meeting, the ICE Consultant will review the construction schedule and validate any assumptions. The schedule will be an efficient representation of the critical path, project phasing, constraints previously identified, and construction scenarios. The schedule may include procurement of long lead items and subcontractor procurement time frames. The schedule will be formatted such that when analyzed in parallel with the cost estimate, they can be easily reconciled.
 - Prior to the OPCC meeting, the ICE consultant and the CM will prepare individual cost estimates based on the 30/60/90% design drawings provided by the designer. The estimate shall reflect and be consistent with the agreed upon methods and measurement of payment anticipated for each bid item. Costs **NOT TO BE** included in the CM/GC Management Price Percentage will be scoped, quantified, and priced discreetly. CM/GC Management Price Percentage will be identified in the estimate. Agreement will be reached regarding allocation of indirect costs and Overhead and Profit into direct costs to arrive at a total unit price for each pay item. Risk allocation and associated contingencies will be per the updated risk register throughout the process. Mobilization and demobilization pay items will be based on identified scope, quantities, and pricing. The CM and ICE shall provide a narrative report documenting the Basis of Estimate.
 - Summary of Reports
 - Markups
 - Escalation (if applicable)
 - Overhead
 - Profit
 - Contingency
 - Assumption and clarifications
 - Allowances
 - Exclusions
 - All OPCC's will be submitted to CDOT via an Excel format spreadsheet with bid item descriptions, quantities, and units.
 - The ICE project manager, lead estimator, and scheduler will attend the OPCC review meetings to discuss assumptions, exclusions, and allocations associated with unit prices and schedule logic. The differences identified will be discussed at the meeting. Following the OPCC resolution meeting, the ICE and CM will refine their OPCC cost estimates based on discussion at the meeting and resubmit to CDOT.
- Monthly Schedule Audits.



- The ICE Consultant will complete monthly schedule audits as requested by CDOT. The audits will help the project managers look at the baseline schedule for changes and risks as the project moves forward in the preconstruction phase. Each audit will be conducted by an ICE scheduler and a written review of the preconstruction and construction schedules will be submitted at the end of each review.
- A narrative report documenting critical assumptions and/or decisions of costing that may impact the fluctuations in pricing adherence may be necessary if there is a large discrepancy between the cost estimates. ICE consultants will provide key negotiating points to assist CDOT.
- Risk Management
 - The ICE project manager, lead estimator, and scheduler will participate in Risk Mitigation Meetings. The risk register will be kept up to date on each risk status. This task will result in a Risk Contingency recommendation from the ICE consultant team to CDOT.
- Plan Set Reviews.
 - The ICE will review all revised plans and specification packages before and after each milestone meeting and revision. This is to ensure that the plans are free from error and omissions, quantity uncertainty has been minimized, items eligible for overrun have been identified, and that the plans and specifications packages have addressed all documented comments, changes, and revisions.
- Reports.
 - Risk Register, Subcontracting and various other report / reviews shall be completed by the ICE. To ensure accuracy, the ICE will review all CM reports as directed by the CDOT Project Director for accuracy, errors, and omissions.
- Cost Model Reviews.
 - The ICE will review the CM's proposed open cost model and will, in writing, make suggestions, recommendations and post questions so that the cost model is ready at the CAP stage. The ICE shall be prepared to compare and review the contractors estimates in an "open-book" environment that quantifies means and methodologies, crew productivities, quantities, unit rates, mark-ups for indirects and anticipated fee.