Full work plan (.pdf, 8 mb)

Work Plan

for

Special Experimental Project No. 14

Construction Manager/General Contractor

Project Delivery Method

Parks Highway MP 237 Riley Creek Bridge Replacement

Federal Project No. IM-BR-0A4-4(19)

State of Alaska Project No. 63763

State of Alaska

Department of Transportation & Public Facilities

Project Manager:
Albert Beck, P.E.
2301 Peger Road
Fairbanks, Alaska 99709
907-451-5359
albert.beck@alaska.gov

1. INTRODUCTION

The Alaska Department of Transportation and Public Facilities (Department) submits this work plan for review and approval as a Construction Manager/General Contractor (CMGC) project under the provisions of Special Experimental Project No. 14 for the use of innovative contracting practices. The Department has traditionally used the design-bid-build method for constructing highways and bridges. The Department has used the CMGC project delivery method for vertical construction, but this will be the Department's first horizontal construction application of CMGC. The Department is authorized by the attached *Authorization to Use Innovative Procurement Procedure* memo (Appendix A) to utilize CMGC for this project.

Riley Creek Bridge, near MP 237 of the George Parks Highway (Parks Highway), in Denali, Alaska has a substandard sufficiency rating and is functionally obsolete. Riley Creek Bridge is immediately south of the Denali National Park and Preserve (Park) entrance. This segment of highway carries large volumes of tourists during the summer months, with the Park being a popular destination of 350,000 to 450,000 visitors per year. Peak tourist season for the Park is from Spring to Fall, which coincides with the construction season in Alaska. A project location map is included in Appendix B.

2. SCOPE

The scope of work for this project will include the design and construction of the Riley Creek Bridge, as well as reconstruction of the Parks Highway in the project area, to include auxiliary lanes for the intersection with the Park entrance and pedestrian and bicycle facility improvements. The Department will be responsible for the design, environmental documentation, and permitting for the project. The Contractor will be responsible for assisting the Department during design as well constructing the project. The Department will provide construction engineering during construction.

Design of the project is currently at 10 percent. Design and construction costs are estimated to be approximately $18,000,000.

3. PURPOSE

The proposed CMGC contracting method is an innovative process that has been utilized by state DOTs for the construction of highways and bridges. The CMGC contracting method allows for a collaborative approach between the Department and the Contractor to manage risk, introduce cost and time saving innovations, and ultimately produce a product with increased value to the public and the Department.

CMGC allows the Department to utilize Contractor construction expertise in the design process which encourages use of innovative methods and materials, enhances the constructability and value of the project, decreases errors and omissions, and manages risk. CMGC provides this allowing the Department to select a Contractor based on qualifications and price during the design phase.

The Department will also use the CMGC contracting method on the Riley Creek Bridge project as a means to gain expertise with innovative contracting methods. Historically the Department has used the design-bid-build method and has limited experience with the CMGC method. With increasing demands

on available highway funds, the Department is actively pursuing methods that have the potential to enhance the use of each precious tax dollar.

4. PROCESS

CMGC consists of two stages, the preconstruction services stage (Stage 1) and the construction stage (Stage 2). The Contractor will be selected using a qualifications and price based selection. During Stage 1 the Contractor will provide assistance during design. Stage 2 consists of constructing the project.

The Department will begin the CMGC process by advertising a Request for Proposals (RFP) package for the preconstruction services contract (Stage 1). The selection of the Contractor will follow the Department's standard procedure for acquiring professional services. Following negotiations the Department will award the preconstruction services contract to the successful Contractor. As the project development proceeds, the Contractor will provide constructability reviews, cost estimates, and other services required by the Department.

Stage 2 of the contract begins after the design is substantially complete. The Contractor will propose a price for the project and the Department and Contractor may negotiate project costs with the intent of agreeing upon a reasonable price for the project. Either the two parties agree upon the price, called the Guaranteed Maximum Price (GMP), or the Department may suspend or terminate the CMGC contract and competitively bid the construction project. When the Department and Contractor agree to the GMP, the construction contract will be awarded.

Appendix C contains a sample detailed CMGC process.

4.1 MEASURES AND REPORTING

The Department will submit two reports on the use of the CMGC method for this project; an initial report at the conclusion of Stage 1, and a final report at the conclusion of Stage 2.

The initial report will address the industry's reaction to the alternative project delivery method, lessons learned, successes, and details of the selection and award process.

The final report will be produced after final acceptance of the construction project. The proposed measures to evaluate the CMGC method in the final report are:

- Innovations incorporated into the project.
    - The final report will discuss the impacts to cost, schedule, and value that each innovation produced and discuss the potential for using the innovations on future projects.
- Project costs.
    - The Department will produce an initial cost estimate of the project based upon historical bid prices for comparable location, complexity, and economy of scale. The changes to project costs will be tracked based on the initial estimate. The final report will discuss the overall impact of the CMGC method on project costs.
- Overall project schedule.
    - After award of the preconstruction services contract, the Contractor will produce a baseline critical path schedule for the remaining project development tasks and the

construction schedule. The Contractor will maintain the schedule throughout the duration of the project and any changes to the schedule will be tracked and reasons for changes to the schedule will be documented. The final report will discuss the impacts of the CMGC method on the overall project schedule.

- Change orders & claims.
    - The final report will include analysis and discussion of any change orders executed by the Department or claims submitted by the Contractor.

Lessons learned will also be included in the final report.

4.2 PROJECT SELECTION

The Department proposes to use the CMGC contracting method for the Riley Creek Bridge Replacement project for the following reasons:

- Opportunities for innovation in materials and construction methods exist which may increase the value of this project to the public and the Department.
- The Contractor's involvement during the design of the project provides a means to mitigate and properly allocate risks.
- The project is located within a National Park boundary which places unique environmental constraints on project construction. Early involvement of the Contractor will allow for a more precise determination of environmental impacts, project schedule, and construction footprint.
- The Parks Highway is the primary commercial land route between the two largest cities in Alaska, Anchorage and Fairbanks. In 2010 annual average daily traffic in the vicinity of the project was over 3,000 vehicles per day. The CMGC method will allow early identification of the most efficient phasing of the project to maintain traffic on the Parks Highway.
- The Department expects the involvement of the CMGC to aid in public relations during the project. The project requires close coordination with the National Park Service to accommodate the 350,000 to 450,000 people expected to visit Denali National Park during the construction season and the residents of the area and visitors to the Denali Park are an engaged and vocal community. Early coordination and public involvement with the Contractor will help maintain positive relationships with the National Park Service, residents, and local business owners.

4.3 SCHEDULE

Prior to advertising the Request for Proposals, the Department will procure a consulting firm to assist in preparing the solicitation documents, selecting the Contractor, developing the construction contract general provisions, providing independent cost estimates and other necessary services to facilitate the CMGC procurement method.

The CMGC process is summarized into the following steps:

Step 1: Preparation of the Request for Proposals (RFP). Estimated time: three months.

An RFP will be developed by the Department with the assistance of a consulting firm.

Step 2: Advertisement and Selection of the CMGC. Estimated time: three months.

The timeline for advertisement, scoring, and selection of the RFP will be consistent with the Department's Professional Services Agreement process. The Department will enter into negotiations with the highest ranking, responsive Contractor. If the negotiations are successful, the preconstruction services contract will be awarded.

Step 3: Preconstruction Services Stage. Estimated time: twenty four months.

Project development phase services will be initiated after award of the preconstruction services contract. The Department and the Contractor will hold a series of meetings focusing on constructability, phasing and scheduling, collaboration and innovation, and risk mitigation and allocation. Construction cost estimates will be developed at various stages of the design. When the design is substantially complete, the Contractor will propose a construction schedule and GMP.

Step 4: Award. Estimated time: two months.

Once the Department and the Contractor agree upon a construction schedule and GMP, all required clearances are completed, and FHWA approval has been received, the Department will recommend to the Contracting Officer that the construction contract be awarded. Once the Contracting Officer awards the construction contract for the GMP, the Contractor will complete the project.

Step 5: Construction Stage. Estimated time: twelve to twenty four months.

The Contractor will procure materials, provide labor, equipment, and supervision, and manage subcontractors required to complete the work. The work will conform to the Department's construction quality standards as detailed in the General Provisions. The Department will have on-site representation to coordinate with the National Park Service and public, perform construction administration, and monitor quality of the work. Completion of the entire project is expected to be in the fall of 2016.

Step 6: Evaluation reporting of the CMGC process. Estimated time: three months.

Evaluation reports will be prepared as noted above in the Measures and Reporting section.