

Alternative Contracting Process – SEP 14

Construction Manager General Contractor (CM/GC)

1. Background

The Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA) has developed a Special Experimental Project Number 14 (SEP-14) work plan for the use of the Construction Manager General Contractor (CM/GC) technique on transportation projects.

Two distinct phases in the CM/GC process have been identified in the approved work plan. Phase I consists of selecting a contractor for CM/GC services before or during the design phase through a Qualifications Based Selection (QBS) process with price component selection. Selections are made through an RFP process. The goal of acquiring the services of a contractor during the design phase is to assist in the development of the design and improve constructability and project quality. Phase II begins during the 90% PS&E design phase. At this time the contractor selected in Phase I will be given the opportunity to propose a guaranteed maximum price (GMP) for construction as the general contractor. If the proposed price is not acceptable, CDOT will advertise the project in the Design-Bid-Build delivery method. The original proposer can submit a bid if the project is advertised using Design-Bid-Build.

There can be multiple construction and/or procurement packages in Phase II on a project as distinct phases or events are identified (such as early acquisition of long lead items). For example, a large roadway project may have an earthwork and drainage construction phase concurrent with the design phase, and a second construction phase once the remainder of the design is completed. FHWA will concur on all Phase II's in the final contract award for construction. Each construction or procurement package will be required to consist of complete Plans, Specifications, and Estimates package that could be advertised if a GMP is not accepted.

2. Purpose

The objective of SEP-14 is to evaluate project specific innovative contracting practices that have the potential to reduce life cycle costs of projects while maintaining product quality. While the design-bid-build process is suitable for a majority of the projects, a State DOT undertakes pressure and constraints from design challenges, budgets, complex construction, and time challenges and certain projects lend themselves to alternative management practices. CDOT and the FHWA have identified thirteen criteria for evaluating the applicability of the CM/GC process:

- a) Project Complexity
- b) Opportunity for Innovation
- c) Delivery Schedule
- d) Level of Design
- e) Project Unknowns
- f) Staff Experience/Availability
- g) Level of Oversight
- h) Risk Allocation

- i) Competition and Availability
- j) Resource Availability
- k) Team Experience
- l) Third Party Involvement
- m) Regulations and Clearances

It is CDOT and FHWA's goal to analyze the benefits provided by the CM/GC process to these thirteen criteria identified above and to document the CDOT process developed for the CM/GC delivery method to include project selection, contractor selection, design and advertisement. CDOT and FHWA will identify projects annually that will allow for the experimentation of CM/GC effectiveness extended over a three year period. The analysis will be performed on the results obtained from project reports based upon measures of cost and time savings, environmental impacts, improvements to constructability, increased quality and public benefit.

3. Process

Over the next three years CDOT and FHWA have agreed to create an annual list of projects for CM/GC delivery to correspond with the Statewide Transportation Improvement Plan (STIP). The approval of the annual project list is contingent upon the timely receipt of the annual CM/GC report due the end of January each calendar year. Selected projects will be identified through a collaborative process with the CDOT Regions and FHWA. This process can begin at the first of each calendar year and will conclude at the end of May of each calendar year when the STIP is completed. This process includes the CDOT STIP Workshop, programming of project funds, and subsequent approvals for proposed projects. The projects selected will be of sufficient complexity to warrant contractor participation in design and contribute to quantitative measures of the CM/GC delivery method. It is expected that up to eight projects within the next three years will be selected.

3.1 Stewardship

The CDOT Innovative Contracting Program will provide stewardship over the program with responsibilities for program consistency, administration of RFP's, and publication of reports.

3.2 Federal Oversight

FHWA will monitor all CM/GC projects in accordance with the current FHWA/CDOT Stewardship and Oversight agreement and FHWA SEP-14 policy. FHWA will be an active participant in the entire process with concurrence or approval on items 3.2.1 through 3.2.5 as described in the most current FHWA/CDOT Stewardship and Oversight Agreement.

- 3.2.1 Annual list of candidate CM/GC projects
- 3.2.2 RFP procedures
- 3.2.3 Selection of contractor prior to Phase I
- 3.2.4 Award of contract prior to Phase II
- 3.2.5 Final inspection and acceptance of construction during project closeout.

3.3 Project Selection

A joint CDOT/FHWA selection process will be used to determine annually which projects will move forward for evaluation under the CM/GC process. Project selection and approval will follow a five step process that includes Region Recommendation, Project Screening, Project Evaluation, CDOT Recommendation, and FHWA approval.

3.3.1 Region Recommendation – Each of the CDOT Regions will develop an annual list of projects for consideration for contracting under the CM/GC process by the end of May of each calendar year when the STIP process is finalized. Each project identified will be accompanied by a justification that will as a minimum contain the following:

- (a) Individual project CM/GC work plans consistent with the approved CM/GC process.
- (b) Project justifications in narrative format of the applicable selection criteria as established in Section 2 that justifies the use of CM/GC on the project. All thirteen criteria do not have to be considered. In addition to any of the applicable criteria areas, the Region will identify any additional characteristics that make the project a good candidate for evaluation under the CM/GC process. The merit of using CM/GC on a project will be readily evident in the explanation(s) and highlight any unique characteristics such as innovative financing, complex construction phasing, and potential for the use of innovative technologies, or benefits to the public (e.g. accelerated construction). Projects that are recommended for approval that do not have readily evident characteristics to use this alternative bidding technique should explain what CDOT is trying to achieve by using CM/GC over traditional “design-bid-build” format.

3.3.2 Project Screening – Each project will be screened for characteristics that make it appropriate for CM/GC delivery. This may include complexity, risk, innovations or other relevant features where a contractor’s input in the design process will improve the project delivery. It is FHWA and CDOT’s intent to collect data for a variety of projects.

CDOT has worked with the University of Colorado, FHWA, AG’s Office, ACEC, and the Colorado Contractor’s Association (CCA) to develop a risk-based project delivery selection matrix. In order to evaluate an appropriate candidate for the CM/GC project delivery method, the process examines owner’s risks and opportunities under competing delivery methods. The review is performed in a workshop setting with a variety of stakeholders. The process provides a defensible assessment to decide if the CM/GC delivery is more suitable than other project delivery methods. The process considers thirteen risk factors associated with three different project delivery methods: CM/GC, design-build, and design-bid-build. For a given project, the screening process is started by rating each risk factor in this matrix as “most appropriate”; “appropriate”; “least appropriate”; or “not applicable” according to the effect of a specific delivery method on that factor. Then, the evaluation team analyzes the aggregate outcome of this screening process by examining both opportunity and risk of the outcome from these thirteen factors. As a result, the evaluation team can observe the benefits as well as the drawbacks of CM/GC compared to design-bid-build and design-build. If the outcome indicates CM/GC is the suitable delivery method, then the results

along with justification are documented. This documentation will lead to the next step, which is developing the RFP documents.

3.3.3 Evaluation – CDOT will evaluate the projects. This evaluation will be based on verification of the Project Screening results and analysis of the thirteen evaluation criteria for each project.

3.3.4 CDOT Recommendation – After the projects have been screened and evaluated, CDOT will submit a letter of recommendation for the selected projects to the FHWA for approval. CDOT will indicate the characteristics for selection they feel were important in determining the recommendation for each project.

3.3.5 FHWA Approval – Approval for the use of CM/GC on the projects will be based on the recommendations for CDOT and FHWA approval.

4. Measure and Reporting

Performance measures and reporting requirements will be applied at both the project level and overall program level.

4.1 Project Measures and Reporting

Each project requires an initial report prepared at the conclusion of Phase I (90% complete PS&E) and a final report at the conclusion of Phase II (final acceptance). The initial report will contain a detailed comparison of the CDOT prepared Independent Cost Estimate (ICE) and the negotiated price for construction and summary of each of the evaluation criteria for Phase I of the CM/GC process. After a GMP is presented by the CM/GC, CDOT may elect to hire an independent Cost Estimator, unaffiliated with the project, in order to provide an ICE that can be compared to the engineer's estimate prepared internally by the CDOT Cost Estimating Unit.

The final report will summarize the evaluation criteria applicable to the project and other factors deemed significant. It will also include a summary of any innovations used and analysis of the cost and time savings provided by these innovations. CDOT will also provide a comparative analysis between the bid-price, rejected negotiated price, and engineer's estimate for any project that is not awarded through negotiation during Phase II and goes out to bid. The CDOT Innovative Contracting Program will be responsible for tracking, analyzing and reporting on these measures.

4.2 Program Measures and Reporting

CDOT will submit an annual report to the FHWA Colorado Division each calendar year of this agreement. The following items are to be included in the report:

- Introduction
- Summary of Projects (includes descriptions, locations, construction costs and design costs)
- Budget Analysis
- Change Orders
- Lessons Learned

- Innovations
- Analysis of Performance Measures including cost and time savings, environmental impacts, improvements to constructability, increased quality, and public benefit.

The performance measures to be included in the annual report at a minimum must include:

- a) Number of contract change orders compared with traditional design-bid-build projects of similar scope and complexity.
- b) The current total contract change orders amounts expressed as a percent of construction contract award amounts.
- c) Construction contract cost overruns and under runs compared with traditional design-bid-build projects of similar scope and complexity.
- d) Comparison between original ICE vs. the final construction costs.
- e) Description of the innovations used.
- f) Committed advertising dates vs. the actual signed construction contract dates.
- g) Number and scope of project time extensions compared with traditional design-bid-build projects of similar scope and complexity.

In addition to these programmatic measures to be included on the annual report, CDOT will identify any project specific measures they would like included on each project as well. The CDOT Innovative Contracting Program will be responsible for tracking, analyzing and reporting on the measures. These measures will be the basis of a future CDOT CM/GC Manual.

5. Waiver of 23 CFR 635.109 (a) (3)

Unless otherwise stated all CM/GC approvals will include a waiver from the “Significant changes in the character of work” provisions of 23 CFR 635.109 (a) (3) based on changes to a design-bid-build contract. Unless otherwise noted, CDOT has elected not to waive “Compensation for Altered Quantities” per the 2011 CDOT Standard Specification 109.03. FHWA will not participate in the additional costs incurred by work covered under this specification.

6. Summary

This document details the process that CDOT and FHWA will use for implementing the CM/GC project delivery method under SEP-14. It is expected that the evaluation will enhance our understanding of the CM/GC strengths, weaknesses, and suitability of this delivery method to road building in Colorado. If more than eight projects are identified in this three year period, these projects may be added to this agreement as necessary. Therefore, this document may need to change in the future and can as necessary.