TEAM KENTUCKY
TRANSPORTATION CABINET

CM/GC Guidance Document

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List of Exhibits

The following acronyms shall have the meanings set forth below.

ACRONYMS	
Abbreviation	***Title or Description***
ABC	Accelerated Bridge Construction
CFR	Code of Federal Regulations
CM/GC or CMGC	Construction Manager General Contractor
CPM	Critical Path Method
DB	Design-Build
DBB	Design-Bid-Build
DBE	Disadvantaged Business Enterprise
DOT	Department of Transportation
EEO	Equal Opportunity Employment
FHWA	Federal Highway Administration
GMP	Guaranteed Maximum Price
ICE	Independent Cost Estimator
KYTC	Kentucky Transportation Cabinet
NEPA	National Environmental Policy Act
NHS	National Highway System
NTI	Notice to Industry
OCRSBD	Office of Civil Rights and Small Business Development
OJT	On-the-Job Training
PDB	Progressive Design-Build
PDMS	Project Delivery Method Selection
PM	KYTC Project Manager
QBS	Qualifications-Based Selection
RFC	Released for Construction
RFP	Request for Proposals
RLOI	Request for Letter of Interest
SOV	Schedule of Values
STA	State Transportation Agency (e.g., KYTC or Cabinet)
TPCE	Total Project Cost Estimate
TRC	Technical Review Committee
USC	United States Code (e.g., federal law)
VE	Value Engineering
WBS	Work Breakdown Structure

PREFACE

Document Purpose

This CM/GC Guidance Document describes processes and procedures that are specific to CM/GC projects, from initial project scoping to construction completion, and conforms with 23 CFR 635.504(c) when using federal funds. This Guidance Document provides general guidance for the Kentucky Transportation Cabinet's ("KYTC" or "the Cabinet) internal operations and describes (at a high-level) strategies, methods, and best practices that can serve as the basis for successful CM/GC implementation. Its content is drawn from national best practice in CM/GC delivery as well as common KYTC practices for procurement and project delivery. Cabinet staff are expected to follow the processes outlined in this Guidance Document, unless otherwise approved by the Alternative Deliver Program Manager. This document does not cover all the processes necessary to deliver a project. CM/GC projects follow all standard Cabinet project development guidelines and procedures, except as noted in this Guidance Document.

CM/GC is an evolving contracting process. Changes in thought and practice will inevitably occur following the publication of this guidance (or its subsequent versions). Therefore, emergent or evolving practices should be incorporated into CM/GC project delivery as warranted and coordinated with the Alternative Delivery Program Manager and in conformance with 23 CFR 635.504(c) when using federal funds for projects delivered under this procurement method. KYTC's Alternative Delivery Program Manager is responsible for updating this Guidance Document with approval from the FHWA Kentucky Division Administrator.

Who will use this Guidance Document?

This Guidance Document is written primarily for Cabinet employees procuring and managing CM/GC contracts. It may also be used by other Cabinet personnel, consultants, and contractors to better understand the steps in delivering a CM/GC project in Kentucky.

Acknowledgements

This Guidance Document is a compilation of efforts and lessons learned from CM/GC projects delivered by other transportation agencies. KYTC's CM/GC Guidance Document incorporates content from CM/GC manuals and CM/GC guidance documents developed by several agencies, including the Minnesota Department of Transportation (MnDOT), the Connecticut Department of Transportation (CTDOT), the Colorado Department of Transportation (CDOT), and the Denver Office of Transportation and Infrastructure (DOTI).

1 INTRODUCTION

This section provides an overview of the Construction Manager/General Contractor (CM/GC) project delivery method, including the state of practice, laws and regulations, and a comparison of the CM/GC, Progressive Design-Build (PDB), Design-Build (DB), and Design-Bid-Build (DBB) delivery methods.

1.1 Background

The Kentucky Transportation Cabinet has a variety of project delivery methods available to deliver its construction projects. One of these is Construction Manager / General Contractor (CM/GC). The use of CM/GC by State Department of Transportation Agencies has grown throughout the United States over the past 20 years either to respond with faster, more efficient project delivery, and to provide agencies with the opportunity to bring qualifications into the selection process. During the Preconstruction Phase, the Contractor serves as an advisor to the Cabinet to provide pricing, constructability reviews, and risk analysis during design development. When the Preconstruction Phase is near completion, the Cabinet and the Contractor negotiate a price for construction services, and after the Cabinet accepts the price, the Contractor is authorized to complete project delivery of a specified scope and schedule with a combination of self-performing the work and managing subcontractors to perform the work.

1.2 Federal Laws, State Laws, and Regulations

This section covers Federal and State Laws/regulations covering the use of CM/GC contracting.

1.2.1 Federal Practice and Requirements

The federal surface transportation act “Moving Ahead for Progress in the 21st Century” (MAP-21) was signed into law on July 6, 2012. MAP-21 authorized the use of the CM/GC contracting method for delivering federal-aid projects. Under § 23 Code of Federal Regulations (CFR) 635 (501-507) Subpart E (Dec. 2, 2016), FHWA issued specific regulations related to CM/GC contracting. FHWA issued a Final Rule for CM/GC that became effective on January 3, 2017. The provisions of the Final Rule have been incorporated into this Guidance Document, for use on federally funded projects. Highlights from § 23 CRF 635 Sections 501-507 are shown below.

- An agency “may use any of the following solicitation options in procuring a CM/GC contract: Letters of interest, requests for qualifications, interviews, request for proposals or other solicitation procedures provided by applicable State law, regulation, or policy. Single-phase or multiple-phase selection procedures may also be used.”
- An agency “may award a CM/GC contract based on qualifications, experience, best value, or any other combination of factors considered appropriate by the contracting agency and the (FHWA) Division Administrator, and which are clearly specified in the solicitation documents.”
- “The State Transportation Agency (STA) must submit its proposed CM/GC procurement procedures to the FHWA Division Administrator for review and approval. Any changes in approved procedures and requirements shall also be subject to approval by the Division

Administrator. Other contracting agencies may follow STA approved procedures, or their own procedures if approved by both the STA and FHWA."

- "Contracts for construction services must specify a minimum percentage of work (no less than 30 percent of the total cost of all construction services performed under the CM/GC contract, excluding specialty work) that a Contractor must perform with its own forces." This is a FHWA requirement which may not apply to work performed under the direction of other federal agencies or jurisdictions.
- The "method of payment for preconstruction services" may be "lump sum, cost plus fixed fee, cost per unit of work, rates of compensation, or other payment methods permitted by State law."
- An agency may hire a Contractor and authorize them to perform Preconstruction Work prior to the completion of the National Environmental Policy Act (NEPA) document, but the agency "shall not initiate construction services (including early work packages) prior to the completion of the NEPA process."
- "The FHWA Division Administrator must approve the price estimate for construction costs for the entire project before authorization of construction services (including authorization of an early work package)."
- An agency "must perform a price analysis for any contract (or contract modification) that establishes or revises the scope, schedule, or price for the construction of the CM/GC project or a portion of the project (including an early work package). The price analysis must compare the agreed price with the contracting agency's engineer's estimate or an independent cost estimate (if required by the contracting agency)." "The (FHWA) Division Administrator must review and approve the agency's price analysis and agreed price for the construction services of a CM/GC project or a portion of the project (including an early work package) before authorization of construction services."

1.2.2 State Practice and Requirements

Authorization of CM/GC projects is done under the authority of the *Kentucky 2022-2028 Enacted Highway Plan* and subsequent Enacted Highway Plans that include such authorization, as signed by the Governor, and passed by the Kentucky General Assembly. Projects authorized for CM/GC are directly identified in the Kentucky Highway Plan. At this time, there is not specific legislation in Kentucky outlining State practice and requirements for CM/GC contracting for transportation projects.

1.3. Description of CM/GC and Other Delivery Methods

The project delivery method is the process by which a construction project is comprehensively designed, procured, and constructed by the Owner Agencies, including the Cabinet. It includes defining project scope; organizing and procuring for designers, constructors, and various consultants; sequencing of design and construction operations; and executing the delivery of design and construction functions. Different project delivery methods are distinguished by the way contracts between the Cabinet, designers, and builders are formed and the relationships that evolve between each party as described in the Contract.

The Cabinet employs several types of project delivery methods: (1) traditional Design-Bid-Build (DBB), (2) Design-Build (DB), (3) CM/GC, and (4) Progressive Design-Build. These delivery

methods differ in the contractual relationship between the Cabinet, the contractor, and designer as represented in Figure 1-1. The following is an overview of these delivery methods.

1.3.1 Design-Bid-Build (DBB)

DBB has been, and continues to be, the Cabinet's most used project delivery method. Most Cabinet staff members are very knowledgeable about DBB and are familiar with the way it works including the linear nature of the planning, preconstruction, and construction phases. In this delivery method, Cabinet staff or a consultant designs a project and creates the construction plans. When the plans and specifications are complete, the Cabinet solicits competitive bids from construction contractors. Typically, the lowest responsible bidder is awarded the contract and construction subsequently occurs under Cabinet oversight. The Cabinet allocates most of the responsibility for risk to itself by using this delivery method.

1.3.2 Design-Build (DB)

In DB, the Cabinet procures a DB team (a paired Contractor and Design Consultant) with a best-value procurement package. A designer and builder work together under a single contract to provide design and construction services to the Cabinet. The selected DB team takes the preliminary design to prepare the final design for the project. When construction packages are ready, the Contractor builds the packages until the project is complete. With this delivery method, most of the responsibility for the design and construction is allocated to the selected DB team. However, for it to be effective, the Cabinet needs to recognize the risks that it is better able to manage, and properly allocate all project risks to the party best able to manage them.

1.3.3 Construction Manager General Contractor (CM/GC)

In CM/GC, the Cabinet procures a contractor based on qualifications to provide input during the Preconstruction Phase of the Project as well as to construct the Project. During the Preconstruction Phase, the Contractor provides constructability input to the Cabinet on matters such as constructability, risk, cost, and construction schedule optimization. Once the Preconstruction Phase reaches the appropriate stage, the Cabinet attempts to reach agreement with the Contractor on the price to construct the project. If the parties reach agreement, the Contractor is then responsible for the construction of all or part of the project.

Like DBB, the Cabinet is the primary manager of the project in CM/GC. But with CM/GC, the Cabinet takes on new roles because of managing the CM/GC services and design services. The Cabinet must act as facilitator, negotiator, decision maker, collaborator, manager, and leader and must be an active participant in every step of the preconstruction and construction phases. Committed Cabinet personnel, including strong project managers, are required for CM/GC to effectively perform.

PMs must be able to make risk-based decisions to meet project deadlines and budget constraints. PMs must also be able to challenge important decisions in the areas of estimating, design, and construction.

While the Cabinet retains control of design decisions, the Cabinet relies on the Contractor's expertise in the following areas during the design phase:

- The skills and knowledge to estimate the quantities of materials, labor, and equipment needed to construct the project.
- The skills and knowledge to determine the tasks needed to construct the project and to estimate the costs, duration, and sequence of these tasks.
- An understanding of the availability, cost, and capacities of materials, labor, and equipment.
- The skills and knowledge to identify potential risks (including financial risks) and methods or solutions to mitigate them during the design process.
- The skills and knowledge to review the design plans and provide suggestions and methods to improve the design for constructability, add innovative value engineering solutions, optimize schedule, and reduce cost.

Once a construction contract is executed, the Contractor's role in construction is similar to that of a Prime Contractor on a DBB project. The Contractor also manages the risk that it assumed responsibility for. The Contractor works under a single contract with the Cabinet which covers both Preconstruction Work and Construction Work.

1.3.4 Progressive Design-Build (PDB)

PDB is similar to CM/GC in that the Cabinet procures a contractor, based on qualifications, to provide input to the Cabinet on matters such as constructability, risk, cost, and construction schedule optimization during the Preconstruction Phase of a project. However, unlike CM/GC, the Contractor brings and manages its own design team under a single contract similar to the contractual relationship used in DB contracting. Like CM/GC, the Cabinet attempts to reach agreement with the PDB Team on the price to construct the project. If the parties reach agreement, the Contractor becomes responsible for the construction of all or part of the project. Other goals and required skills required of the Cabinet to manage a PDB project are similar to CM/GC contracting. In general, the Cabinet still retains control of design decisions in PDB (similar to CM/GC) up until the point when the Contractor becomes the builder, at which point the Cabinet's ability to retain control of design decisions follows more of a DB contracting approach. PDB typically uses a lump sum contract (similar to DB) but provides the Cabinet with increased flexibility to discuss risk assignment openly with the Contractor, including the use of allowances or provisional bid items outside of the lump sum contract amount.

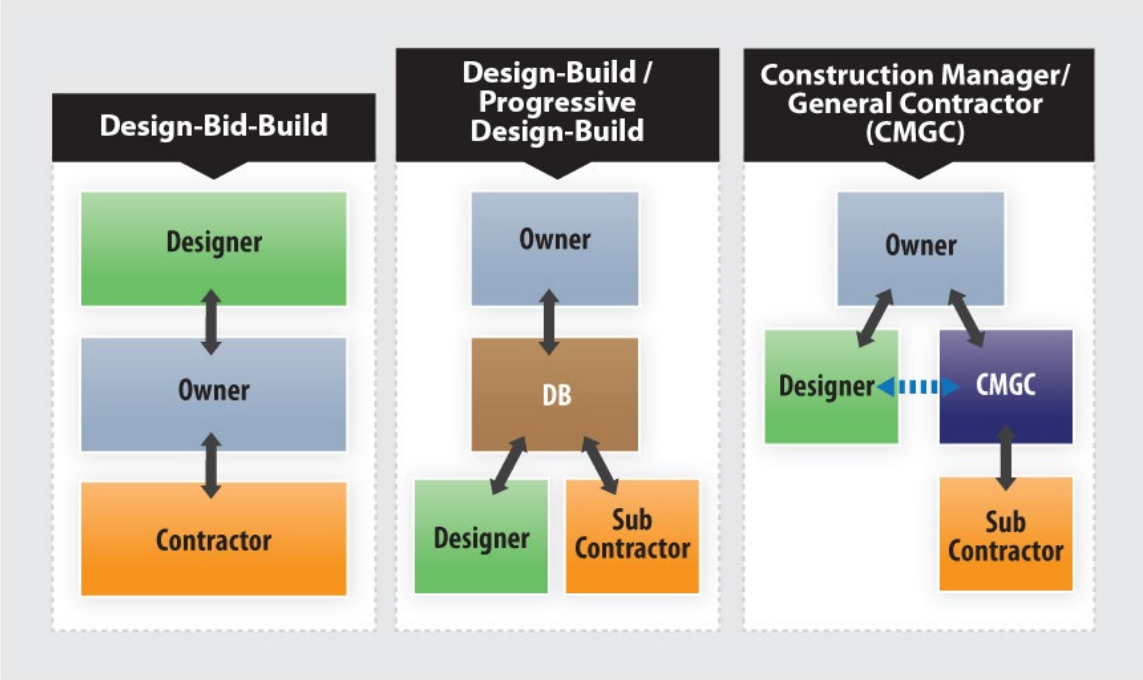

Figure 1-1: Project Delivery Methods Contractual Relationships

2 PROJECT SELECTION PROCESS

This section provides an overview of the process used to select CM/GC projects. Determining the best project delivery method for a project starts with developing and reviewing the project's goals and risks. The identified goals and risks can then be used to help inform the Cabinet if CM/GC is the most appropriate delivery method for a project. Also, consider the project schedule and resources available to manage the process. CM/GC projects place a unique demand on project staff members, especially at the management level, and require a high level of interaction between Cabinet personnel, the Designer, and the Contractor.

2.1 General Guidelines for Considering CM/GC

The use of CM/GC should be carefully considered based on a variety of factors, including project goals, project complexity, and risk. The project team must consider the following questions when determining whether to use the CM/GC project delivery method:

- **Is the project technically complex (e.g., Accelerated Bridge Construction, tunnels, mechanical/electrical facilities, or a multi-disciplined vertical construction project)?** Technically complex projects typically benefit more from Contractor input during the Preconstruction Phase. CM/GC can certainly be used on projects that lack technical complexity, but the Cabinet will not typically realize the same level of benefit from Contractor involvement during the Preconstruction Phase as it would on a project with a high degree of technical complexity.
- **Are the project scope of work and technical requirements difficult to define or is the owner undecided?** CM/GC gives the owner more flexibility and time to work out the scope and technical requirements during preconstruction, whereas other forms of contracting (DBB or DB) may require greater scope clarity and certainty prior to procurement.
- **Are there project risks that are hard to predict and have significant consequence?** CM/GC contracting provides an excellent environment to discuss approaches with the Contractor during the Preconstruction Phase on how to manage and mitigate project risk before entering into a construction contract. CM/GC also provides an environment where the Cabinet and the Contractor can jointly review risk assignment during the Preconstruction Phase to decide which party is best suited to manage and price the risk, instead of the Cabinet making that decision unilaterally.
- **Does the project involve new or customized (non-standard) types of designs?** CM/GC provides an opportunity to get constructability input from a Contractor on new, or customized designs.
- **Is there phased funding on the project that could allow early construction for portions of the project?** CM/GC allows flexibility for the Cabinet to begin construction early (i.e., after NEPA is complete but before the design is complete for the entire project), and/or to accommodate phased funding releases using early Pricing Packages.

- **Is there a lot of third-party interaction, such as with a railroad?** CM/GC allows the Cabinet to involve the Contractor during the Preconstruction Phase to gain a better understanding of third-party issues, work through such issues prior to starting construction, or have additional time to gather necessary third-party permits/clearances.
- **Are there complex construction sequencing or phasing requirements on the project?** CM/GC contracting allows the Cabinet to involve the Contractor in developing the construction sequencing or solution to phasing the work in an efficient, constructable manner, which may better allow for construction logistics and/or ongoing facility operations during construction.
- **Is the project schedule-driven?** CM/GC can accelerate the start of construction by enabling the Contractor to begin long lead material and equipment procurement, mobilization, and/or can simply allow the Contractor to assist in creating the construction schedule. This approach results in Contractor buy-in to the schedule, making milestone goals more likely to be achieved.
- **Are there opportunities for innovation?** CM/GC allows the Cabinet to consult with the Contractor on potential innovations, including the benefits and challenges associated with those innovations.
- **Are there opportunities to find schedule and cost savings?** CM/GC provides for the Cabinet and Contractor to identify opportunities to reduce cost and/or optimize the construction schedule using continual value engineering input and/or Contractor procurement strategies throughout the preconstruction process.
- **Will the project benefit from early Contractor involvement?** One of the key advantages of CM/GC contracting is that it allows the owner to hire a Contractor during the Preconstruction Phase of the project to act as a CM. In this role, the Contractor works alongside the owner and the design team during the Preconstruction Phase of the project to provide input on schedule, phasing, constructability, materials availability, and risk identification. The expectation is that use of a CM will lead directly to lower project costs, more efficient construction sequencing, reduced risk to the owner, and/or less expensive methods of construction and material procurement. Cost and schedule savings that are gained from the Contractor's input during preconstruction are expected to offset any costs that result from involving a CM. Projects that will not have sufficient opportunities to offset the savings that can be realized by involving the Contractor during the Preconstruction Phase are not good candidates for CM/GC.
- **Has the design advanced beyond a point where the Contractor can provide input?** Benefits from CM/GC delivery are maximized when the Contractor is brought on early (at or before the 30% milestone for projects. This benefit decreases the later the Contractor is brought into the project.
- **Does the owner want to maintain design decision control?** CM/GC allows the Designer to get input from a Contractor during the Preconstruction Phase (similar to DB) while

maintaining full design control because the Designer's contract is directly held by the Cabinet.

- **Are the Contractor's qualifications (or the qualifications of its key staff) an important factor in Contractor selection, or is competitive price the driving value in Contractor selection?** CM/GC allows the Cabinet to select the Contractor wholly by its qualifications and proposed approach to the project. However, because CM/GC procurements lack a price component, the Cabinet must negotiate the price to construct the project during the Preconstruction Phase. CM/GC is best suited for situations where the Cabinet is driven by hiring the most qualified contractor to perform the work given many of the parameters in the bullet points above. CM/GC is not well suited if lowest price is the driving value.

If the answers to most of these questions are yes, CM/GC may be a favorable method of delivery. Regardless, a formal project delivery method selection process (as covered in Section 2.4 of this guide) can further help the Cabinet decide if CM/GC is the right contracting method to deliver the project.

2.2 Project Goal Setting

An understanding of project goals is essential to selecting the appropriate project delivery method and successfully implementing it on the project. The goals influence the development, negotiation, implementation, and administration of the Contract. These goals are used by contractors, consultants, and others in preparing proposals for the project and guiding the project throughout the design and construction phases.

Project goals should reflect the purpose and need of a project. Frequently, the main project goals can be divided into smaller objectives. Preferably the goals are prioritized to provide direction to the Project Team for making decisions relative to other goals. The goals for transportation projects are generally consistent. Nevertheless, the project goals must be considered specifically for the project and remain consistent over the life of the project. Typical project goals to consider include factors such as:

- Schedule (completing the project by a specified date, completing project phases within a specified timeframe, starting construction by a specified date).
- Cost (completing the project on budget, minimizing project cost).
- Quality (meet or exceed project requirements, providing a high-quality design and construction that minimizes future maintenance costs).
- Functional (providing innovative solutions, minimizing inconvenience to the traveling public during construction).
- Risk (providing a design or construction approach that minimizes project risk).
- Safety (maximizing safety of workers and the traveling public during construction, providing a design to maximize safety).

Significant transportation projects should include establishing goals early in the project development, prior to selection of the delivery method. Participation or concurrence in establishing the project goals should include the Alternative Delivery Program Manager.

Oftentimes, transportation projects include significant stakeholder interests beyond the Cabinet. In these cases, it can be advantageous to include the stakeholder in goal setting. To ensure that funding is available for each Pricing Package it is particularly vital to include funding partners in the development of the project goals.

2.3 Identifying and Analyzing Risk

Risk assessment should be a continual process throughout the project development. An initial assessment of project risks should be performed to help the Cabinet determine the appropriate delivery method. "Risk" is defined as an uncertain event or condition that, if it occurs, has a negative or positive affect on a project's goals and objectives. Properly allocating risks between the Cabinet and the Contractor results in overall lower costs.

A primary benefit of CM/GC is the ability to contractually allocate risks to the party who is best able to manage that risk. CM/GC allows the Designer, contractor, and the Cabinet to work collaboratively to analyze, allocate, and mitigate risk before the final cost of the project is determined.

2.4 The Project Delivery Method Selection (PDMS)

The evolution of alternative contracting methods, such as DB and CM/GC, has made it important to evaluate projects early in their development to determine the most beneficial method of delivery.

The primary objectives of the PDMS process are to:

- Present guidance to assist PMs in making project delivery recommendations,
- Assist the Cabinet in determining if there is a prevailing or obvious choice of project delivery methods, and
- Provide transparency by documenting the Cabinet's rationale for selecting a particular delivery method.

Consideration of certain factors can inform the Cabinet of the most appropriate method to satisfy project delivery goals. The PM should work with the Project Team to develop a delivery method recommendation. This recommendation should address project specific factors such as: (1) project complexity and opportunity for innovation, (2) delivery schedule, (3) cost considerations, (4) level of design, (5) risk, (6) agency staff availability, (7) desired level of oversight and control, and (8) anticipated level of competition. The PM may request assistance facilitating delivery method selection from the Alternative Delivery Program Manager. The Alternative Delivery Program Manager provides a neutral facilitator to assist the PM and Project Team with examining the project and helps prepare the delivery method recommendation. Once the recommendation is prepared, the PM must submit to the Alternative Delivery Program

Manager. The Alternative Delivery Program Manager will review and provide a final recommendation to the State Highway Engineer for delivery method approval.

Projects specifically identified to use alternative delivery by the Enacted *Kentucky Highway Plan* or Cabinet executive management are excluded from the PDMS process.

2.5 Approval for CM/GC Delivery Method Use

2.5.1 Cabinet Approval Process

After the step of completing the PDMS process has been completed (if applicable for a particular project), the Alternative Delivery Program Manager presents the results and recommendations to the State Highway Engineer for approval.

2.5.2 Federal Highway Administration (FHWA) Approval / Concurrence

When considering a CM/GC project with federal funding, the Cabinet shall notify FHWA as soon as possible. Federal involvement is required on projects with Federal funding. FHWA's Final Rule for CM/GC outlines requirements, including FHWA approvals, specific to federally funded CM/GC projects. FHWA and the Cabinet also have a Stewardship and Oversight Agreement that outlines the roles and responsibilities between the agencies on stewardship and oversight of Federal-aid projects, per 23 U.S.C. 106, as well as other federal laws and regulations. Federally funded CM/GC projects will follow the processes and procedures outlined in this Guidance Document, in the Stewardship and Oversight Agreement, and will follow any additional requirements that are part of a project specific Risk-Based Project Plan as developed by FHWA with the cooperation of the Cabinet.

Listed in Table 2-1 is an overview of the processes and procedures for involving FHWA on federally funded CM/GC projects. Additional requirements and FHWA actions may apply as further clarified through FHWA's Risk Based Project involvement process.

Table 2-1: Overview of FHWA Involvement on CM/GC Projects

DOCUMENT SECTION	WORK ACTIVITY	Action	
		Cabinet Action	FHWA Action
PROCUREMENT OF THE CONTRACTOR (SECTION 3)			
3.5.12	Contract Payment Provisions	Prepare	None
3.5.14	RFP Development Meetings	Invite	None
3.5.14	Request for Preconstruction Work Authorization	Prepare	Authorize[3]
3.5.14	RFP	Prepare	Approve
3.5.15	RFP Clarifications	Prepare[1]	None
3.5.16	RFP Addenda	Prepare	Consult[6]
3.5.18	Re-issuing Procurement	Prepare	Approve
3.5.18	Cancelling Procurement	Notify	None
3.5.19	Proposal Evaluations	Invite	None
3.5.20	Short-List	Prepare[1]	None
3.5.22	Request for Concurrence in Award	Prepare	Concur
3.5.23	Debriefing	Invite	None
PRECONSTRUCTION ACTIVITIES (Section 4)			
4.3.6	At-Risk Final Design Prior to NEPA Completion	Notify	Concur
4.3.6	Federal Reimbursement for At-Risk Preconstruction Activities Performed at Risk Prior to NEPA Approval	Prepare	Approve
CM/GC PRICE PROCESS (Section 5)			
5.2	Review of Pricing Milestone Plans	Prepare	None

DOCUMENT SECTION	WORK ACTIVITY	Action	
		Cabinet Action	FHWA Action
5.3/5.4	Attendance at Design Review/Risk Workshop	Invite	None
5.6	GMP Variance Report	Prepare[1]	None
5.7	Price Reconciliation Meeting	Invite	None
5.3.1	Final Plans for GMP Pricing	Prepare	Copy
5.3.1	Addendum to Final Plans	Prepare	Copy
5.13	GMP Abstract	Prepare	Copy[4]
5.13	Request for Concurrence to Authorize Construction Phase Amendment and/or Pricing Package Amendment(s)	Prepare	Approve[4,5]
5.14	Authorization of Construction Funds	Prepare[2]	Authorize[4]
5.12	Reject Pricing Package GMP	Prepare	Concur[4]
5.12	Terminate CM/GC Contract	Notify	Approval
5.12	Use Another Procurement Process	Notify	Concur[4]

[1] The Cabinet will provide FHWA with a courtesy copy.
[2] The Cabinet will submit the Request for Authorization to the FHWA, for the project or a Pricing Package, after the Cabinet deems the Contractor's GMP to be reasonably acceptable - per the CM/GC Price Validation process.
[3] FHWA must approve a cost or price analysis for Preconstruction Work prior to authorizing federally funded preconstruction services.
[4] Only construction Pricing Packages that are federally funded require FHWA action (i.e., the FHWA does not authorize construction, concur in the award of the construction contract, or concur in the Price Proposal rejection for non-federally funded Pricing Packages).
[5] The FHWA must review and approve the Cabinet's price analysis and agreed price for construction of the project, or a portion of the project (including early Pricing Packages), before authorizing the Cabinet to proceed with the execution of a Construction Phase Amendment and/or Pricing Package Amendments. In addition, before authorizing the Cabinet to proceed with construction services, FHWA must approve the price estimate for construction costs for the entire project (including authorizing the Cabinet to proceed with an early Pricing Package).

[6] Per 23 CFR 635.112(j), addenda to the RFP require approval by FHWA if the changes results in a major change. The Alternative Delivery Program Manager will consult with FHWA regarding whether the proposed addenda results in a "major change" to the RFP, to assist in determining FHWA involvement.

Additional Federal Requirements

(1) FHWA must authorize federally funded Preconstruction Work before the RFP is advertised.
(2) If construction is to be federally funded, the contract needs to include required Federal provisions and be procured in a federally eligible manner (i.e., it has to be federalized.)
(3) FHWA's contracting requirements (e.g., Buy America, Davis-Bacon, FHWA-1273, etc.) will apply to all the CM/GC project Pricing Package Amendment if any portion (including an early Pricing Package) of the CM/GC project construction is federally funded.

3 PROCUREMENT

This section outlines the processes for procuring the CM/GC Project Team, including the Design Consultant, the Independent Cost Estimator, and the Contractor.

3.1 Conflicts of Interest

CM/GC contracting involves the procurement of multiple entities to work together on a single project (more than what is typical for a DBB project). As a result, CM/GC projects are at increased risk for organizational conflicts of interest between the various parties working on the project (Designer, Alternative Delivery Support Consultant, ICE, Contractor). Protecting against conflicts of interests is critical to preserving the integrity of the CM/GC process. State and federal law governs organizational conflicts of interest in KYTC procurements. When procuring the various entities for CM/GC project, the Cabinet must consider the increased potential for organizational conflicts of interests and review the procurement process to ensure that any potential conflicts are identified and addressed in accordance with the Cabinet's policies regarding such matters.

Conflicts of interest may arise from prior or existing contractual obligations between a company and a federal, state, or local agency relative to the project or the Cabinet's CM/GC program. Parties must disclose all relevant facts concerning any past, present, or currently planned interests which may result in an organizational conflict of interest. If a perceived potential conflict of interest or competitive advantage is identified, the party must submit relevant information to the Cabinet's Division of Professional Services. The Cabinet is solely responsible for determining if conflicts of interest, or a real or perceived competitive advantage, exist (in the case of the Contractor) and whether a party could mitigate their effects. When the Cabinet finds that a participating entity has a conflict of interest or holds a competitive advantage (in the case of the Contractor) that cannot be mitigated, it must be excluded from procuring that role on the project, and a notification of such determination is issued by the Cabinet to the appropriate parties, including the PM and FHWA, when applicable.

Exhibits

Exhibit 3-1 Conflict of Interest Form

3.2 Alternative Delivery Support Consultant

The Cabinet employs an Alternative Delivery Support Consultant for support in the procurement of the contractor for alternative delivery projects, including CM/GC projects. The CM/GC programmatic aspects of the Alternative Delivery Support Team master contract are managed by the Alternative Delivery Program Manager; however, the work orders issued under this contract for performing work related to a specific CM/GC project are managed by the PM and funded by the Highway Plan.

3.3 Procuring the Design Consultant

For CM/GC projects, the Cabinet enters into a Contract with a Design Consultant who is required to work in partnership with the Cabinet and the Contractor. In this Guidance Document, the term "Design Consultant" or "Designer" refers to the consultant firm hired by the Cabinet to complete the design of the project. Procurement of the Design Consultant is largely the same as it would be for a DBB project and occurs through a QBS procurement process managed by the Cabinet's Division of Professional Services. Guidelines to consider when hiring the Design Consultant that are unique to CM/GC contracting include:

- The Design Consultant's contract should be written to require the Consultant to work together with the Contractor, and the scope of work should detail the unique services expected under the CM/GC project delivery.
- The Design Consultant should be prepared to incorporate the Contractor's ideas on phasing, materials, constructability, and other project approaches with the goal of mitigating project risk.
- CM/GC contracting is most successful when the contractor is paired with a Designer with proven ability to be collaborative, flexible, and responsive to contractor questions.
- Cost estimates for construction are independently prepared by the Contractor and the Independent Cost Estimator (ICE) that align with typical design milestones. The Designer's scope of work should require them to provide bid items, estimated quantities, and special provisions (to the extent possible and needed to accurately price the work) but not provide a corresponding cost estimate.
- CM/GC projects may have multiple Pricing Packages. Whenever possible, projects that are expected to be delivered with multiple Pricing Packages should have the Pricing Packages defined within the Designer's scope of work, along with delivery dates for each work package.

3.4 Procuring the Independent Cost Estimator (ICE)

To help preserve the independent nature of the ICE and maintain consistency across the Cabinet's CM/GC Program, the Cabinet utilizes ICE services for all CM/GC projects. Procurement of the ICE is accomplished through the Cabinet's standard procurement practices for procuring consultants. Procurement of the ICE consultant is the responsibility of the Alternative Delivery Program Manager. The ICE consultant for an individual CM/GC project will be assigned by the Alternative Delivery Program Manager.

Since the ICE is ultimately used to help the Cabinet reach a fair/reasonable price for construction with the Contractor, it is critical that the ICE selected for the project is a qualified estimating firm with production-based, contractor-style estimating experience on projects of similar scope and complexity. The ICE firm should be independent from the Designer and not have organization conflicts of interests with any other parties (see Section 3.4) on conflicts of interest in CM/GC Contracting for more details).

Because the ICE plays a significant role in developing the GMP and the negotiation process, engaging the ICE in the project at or near the same time the Contractor begins Preconstruction Services is recommended. Engaging the ICE early in the process allows the ICE to develop an understanding of the project goals, risks, design decisions, and assumptions, and thus, more accurately prepare the Independent Cost Estimate.

3.5 PROCURING THE CONTRACTOR

3.5.1 CM/GC Procurement Overview

The Cabinet procures a Contractor for CM/GC Projects based on a Qualifications-Based Selection (QBS) basis. Under a QBS procurement approach, the Cabinet selects the Contractor based on the qualifications and experience of the contracting firm and its proposed key personnel for the project. Price is not a factor in QBS.

The Cabinet prepares an RFP outlining the minimum and desired Contractor qualifications. Interested CM/GC Proposers submit qualitative technical proposals in response to the RFP. A Technical Review Committee (TRC) evaluates the qualitative technical proposals according to the criteria published in the RFP.

The contract is awarded to the responsive and responsible CM/GC Proposer with the highest score. Alternatively, the Cabinet has the option to not award a contract to any of the Proposers at their sole discretion (for example in the case where all Proposals are rejected). The Cabinet does not pay stipends to the unsuccessful responsive and responsible CM/GC Proposers.

3.5.2 Timing for the CM/GC Procurement

The Contractor should be procured early in the design process. Early selection of the Contractor maximizes the potential for team collaboration and allows the Contractor to provide early input that may direct design development (such as risk management, opportunities to introduce innovative construction methods, or ways to reduce costs or optimize the construction schedule). To maximize the benefits of CM/GC, concurrent procurement of the Design Consultant and Contractor is recommended. For these same reasons, a Letter Agreement for the ICE should be executed for the project authorizing the ICE to engage in the project concurrent with the Designer and Contractor.

The Alternative Delivery Program Manager consults with the PM to determine the optimal time to procure the Contractor. Final determination for procurement will be made by the State Highway Engineer.

3.5.3. Typical Procurement Timelines

Listed below are typical timeframes needed to perform each procurement item. These timeframes will vary based on project complexity and procurement type. Some items may be accelerated or developed concurrently.

Table 3-1: Typical CM/GC Procurement Timelines

Procurement Item	Approximate Time
Issue Notice to Industry (NTI)	4 Weeks
Advertise Draft RFP	6 Weeks
Advertise Final RFP	4 Weeks
Evaluate Proposals	2 to 4 Weeks
Interview and Selection	2 Weeks
Contract Award and Execution	4 Weeks
Overall Procurement Timeline	**22 to 24 Weeks**

3.5.4 Notice to Industry (NTI)

The NTI alerts the Contractor and Consultant communities to an upcoming CM/GC project. An NTI shall be issued in advance of all CM/GC procurements unless otherwise approved by the Alternative Delivery Program Manager. Information that may be incorporated into an NTI includes but is not limited to the following:

- General description and scope of the project
- The Contractor's proposed scope of work to performed
- Tentative procurement schedule
- Anticipated prequalification requirements
- Unique or special contractor and/or consultant experience requirements
- List of Contractors, Consultants, or other entities with known conflicts of interest, and which cannot be a Proposer or participate on a Proposer's team
- Availability of preliminary plans and/or project information
- Date and location of Informational One-on-One Meetings (if one has been scheduled), or information on scheduling pre-proposal one-on-one meetings.
- PM contact information

NTIs are posted as a bulletin on the Cabinet's Division of Construction Procurement webpage. Procurement documents are also published on this webpage. Exhibit 3-2 is an NTI template. To

ensure uniformity among projects, the Project Manger should use this as a guide when preparing the NTI.

The NTI may include a Request for a Letter of Interest (RLOI) instructing interested Proposers to submit a Letter of Interest (LOI) in advance of the RFP. Asking Proposers to submit a LOI is optional based on The Cabinet's desire to seek industry interest and early exchange of information with potential Proposers. Responses to the NTI are used to assist the Cabinet with gauging industry interest in the project. The NTI should include a schedule of the anticipated NTP and significant project milestone dates, as well as the project goals. Finally, the NTI should indicate the contact information for the PM, the deadline to request one-on-one meetings, and a link to the Cabinet's website where all project information can be found.

Exhibits

Exhibit 3-2a Sample Notice to Industry (NTI)
Exhibit 3-2b Sample Request for Letter of Interest (RLOI)
Exhibit 3-2c Sample Letter of Interest (LOI)

3.5.5 Industry Forum

The Cabinet is encouraged to use an industry forum to engage industry groups and potential Proposers on CM/GC projects. CM/GC projects are generally complex projects with unique challenges and/or conditions which would benefit from industry input. Industry Forums are typically conducted after the NTI is issued but before the RFP is released. The forum provides a venue in which to discuss a project's anticipated scope, schedule, and risks, and receive industry feedback. Interested Proposers are encouraged to participate but attendance is not mandatory to submit a Proposal unless specifically required in the NTI. All topics of discussion at the industry forum are provided for information only. Announcements for industry forums are posted on the Cabinet's Alternative Delivery webpage.

3.5.6 Pre-RFP One-on-One Meeting

CM/GC projects may include a Pre-Proposal Meeting during the procurement process. Pre-Proposal Meetings give the Cabinet the chance to supply all Proposers with critical information about the project and/or procurement. Pre-Proposal meetings are scheduled one-on-one with each individual team. The meeting should include the following:

- An overview of the project that includes the project scope, stage of design when contracted, and project goals.
- An overview of the CM/GC delivery method and why it was selected for the project.

3.5.7 Establishing the Technical Review Committee (TRC)

A TRC typically consists of three to five members and helps the Project Team evaluate Proposals and Interviews. The TRC includes the PM and representatives from the Cabinet. All TRC members must be Cabinet employees. To increase the project knowledge of the TRC members, the committee should be formed as early as possible during the project development process.

The PM recommends potential TRC members to the Alternative Delivery Program Manager. Candidates are evaluated based on their qualifications and their potential contributions to the project. All TRC members are bound by ethical and confidentiality requirements and must sign a confidentiality agreement. Consult Exhibit 3-3 for a template of the Confidentiality and Non-Disclosure Agreement.

The Alternative Delivery Program Manager is responsible for approving the list of TRC. It is recommended that his/her concurrence is received before advertising the RFP. If the TRC needs to be changed, the PM will obtain concurrence from the Alternative Delivery Program Manager.

Exhibits

Exhibit 3-3 TRC Confidentiality and Non-Disclosure Agreement Form

3.5.8 Setting DBE Goals for CM/GC Procurements

The section outlines only those Disadvantaged Business Enterprise (DBE) and/or Equal Employment Opportunities (EEO) procedures that must be followed prior to issuing the RFP. Additional DBE and/or EEO requirements are required prior to awarding a construction contract as outlined in Section 4.3.13 and should be reviewed for a full understanding of the entire DBE process. DBE participation is required on all Federal-aid projects and strongly encouraged for all other projects. The Cabinet's Professional Services Guidance Document (PS-15-06) lists steps the Cabinet can take to foster DBE participation.

The PM will work with the Alternative Delivery Program Manager and the OCRSBD to establish a DBE goal for all Federal-aid projects. The Project Team should enlist help from the Cabinet's DBE Goal Setting Committee and coordinate with the Office of Civil Rights and Small Business Development when developing project specific DBE goals. Having a high-level knowledge of the work types included in a project, as well as the capabilities of DBE firms, is critical for setting realistic, yet properly aggressive, goals. Any goals noted in the RFP for a CMGC project will only apply to the Preconstruction Phase of the project. The DBE requirements for the Construction Phase will not be provided in the RFP. Instead, the RFP will only identify whether goals and EEO requirements are expected to apply to the Construction Phase of the Project, that the actual goals during the Construction Phase will be established for the project as a whole prior to executing the Construction Phase Amendment and individually for each Pricing Package (if different than the goal for the project as a whole) for each Pricing Package Amendment.

3.5.9 Pre-NEPA Activities and Requirements

Prior to completing the NEPA process, the Cabinet may:

- Issue the RFP.
- Proceed with the award of a CM/GC Agreement providing for Preconstruction Work and an option to execute a Construction Phase Amendment for construction services once the NEPA review process is complete.
- Issue notice to proceed to the Contractor to perform Preconstruction Work, excluding final design-related activities.

- Issue a notice to proceed to a consultant design firm for the preliminary design and any work related to preliminary design of the project to the extent that those actions do not limit any reasonable range of alternatives.
- Proceed, solely at the risk and expense of the Cabinet with design activities at any level of detail (including final design and Preconstruction Work associated with final design) for a CM/GC project before completion of the NEPA process without affecting subsequent approvals required for the project. FHWA, however, will not authorize final design activities and Preconstruction Work associated with final design, and such activities will not be eligible for federal funding until after the completion of the NEPA process. If the Cabinet decides to perform at-risk final design, it must notify FHWA of its decision to do so before undertaking such activities and work with FHWA to implement procedures to segregate any at-risk activities from the preconstruction activities that are eligible for reimbursement during the NEPA process . It should be noted that contracting for the acquisition or fabrication of materials (including shop drawings and fabrication plans) is not allowed, even on an at-risk basis, before the conclusion of the NEPA process.

Per § 23 Code of Federal Regulations (CFR) 635 (501-507) Subpart E, if the Cabinet procures the Contractor prior to completing the NEPA process, the Cabinet must abide by and include the following provisions in the CM/GC CM/GC Agreement and the RFP:

- A provision allowing unilateral termination by the Cabinet if the environmental review process does not result in selecting a build alternative. This termination provision is in addition to the termination for cause or convenience clause.
- A provision that the scope of services in the Preconstruction Phase includes all alternatives identified and considered in the NEPA process.
- A provision ensuring that no commitments are made to any alternative during the NEPA process and that the comparative merits of all alternatives identified and considered during the NEPA process, including the no-build alternative, will be evaluated and reasonably considered.
- A provision that the Contractor must not prepare NEPA documentation and have any decision-making responsibility with respect to the NEPA process. However, the Contractor may be requested to provide information about the project and possible mitigation actions, including constructability information, and its work product may be considered in the NEPA analysis and further included in the administrative record.
- A provision that the Cabinet has the right to obtain, as needed, technical information on all alternatives analyzed in the NEPA review, if the Cabinet expects to use information from the CM/GC contractor in the NEPA review for the project.
- A provision ensuring that all environmental and mitigation measures identified in the NEPA documentation and committed to in the NEPA determination for the selected alternative will be implemented.
- A provision that the Cabinet will not proceed, or permit any consultant or contractor to proceed, with services involving plans or submittals that are considered elements of

final design such as the development of shop drawings and fabrication plans before the completion of the NEPA process for the project, even on an at-risk basis.

- A provision that the Cabinet will not proceed with the award of an agreement of the Construction Phase Amendment (including for early Pricing Packages such as advanced material acquisition or site work) and, except as provided for above in this section, will not proceed, or permit any consultant or contractor to proceed with construction, until the completion of the NEPA process for the project.

3.5.10 Developing the Contractor's Scope of Work

The scope of work for the Contractor is published in the RFP as part of the CM/GC Agreement. It can be developed along with the RFP, but ideally it should be developed before the RFP is produced to help guide the development of the RFP requirements. The PM will consult with the Alternative Delivery Program Manager to develop the Contractor's scope of work. The scope of work for any given project should include the following:

- The anticipated construction phase scope of work, including any early Pricing Packages that are anticipated by the Cabinet, and the estimated construction cost.
- The anticipated Preconstruction Phase scope of work. This should include the preconstruction activities, while accounting for the level of design development anticipated at the time the Contractor is procured. In addition, the scope of work should identify the Contractor's deliverables and any associated requirements. It should be noted that some activities performed as part of the Preconstruction Phase scope of work may be defined as "construction activities," per FHWA's Final Rule for CM/GC (such as shop drawings or fabrication plans), and that such activities will not be authorized to proceed by FHWA until NEPA is completed.
- A description of the tasks that the Cabinet expects the Contractor to perform in order to submit pricing milestone estimates and a GMP.
- Any co-location requirements. Since CM/GC contracting relies on a high degree of collaboration, co-location of key staff from the Contractor, Designer, and the Cabinet can be beneficial. Co-location may be more beneficial for projects with aggressive schedules or the need for a high degree of collaboration. For other projects, alternative forms of design coordination, such as regularly scheduled meetings, may be more appropriate. Prior to issuing the RFP, the PM should consult with the Alternative Delivery Program Manager to decide if co-location will be required on the project and if so, include the applicable requirements in the RFP.

An example of a typical CM/GC scope of work is included in Exhibit 3-4.

Exhibits

Exhibit 3-4 Sample Contractor Scope of Work

3.5.11 CM/GC Construction Markup Fee

The CM/GC Construction Markup Fee consists of the Contractor's profit plus the portion of home office overhead (G&A: General and Administrative Costs) allocated to the project, where

home office overhead (G&A) is defined as the cost of activities that are necessary to the overall operation of the Contractor's business allocated to all the Contractor's ongoing projects. This fee is represented as a fixed-markup percentage that is applied to the construction cost and becomes a part of the Contractor's GMP for the work.

The Construction Markup Fee is not requested in response to the RFP. Rather, the Cabinet discusses the Contractor's proposed Construction Markup Fee early after award with the ICE based on factors such as market conditions, project risk, and similar projects. The Cabinet uses the expertise of the ICE, who are familiar with the market conditions and production-based estimating for similar projects to provide feedback on the Contractor estimate. When possible, the Contractor and the ICE agree on a common percentage to use for the Construction Markup Fee percentage. However, ultimately it is up to each party to use the fixed-markup percentage that they think is appropriate for the project. Any differences between the ICE and the Contractor factors into the fair price analysis conducted by the Cabinet when the Contractor submits their GMP.

3.5.12 CM/GC Contract Payment Provisions

The Cabinet allows the following payment provisions on CM/GC projects: (1) a lump sum GMP contract (where payment is derived from either a cost loaded schedule and a schedule of values similar to DB contracting), or (2) a GMP contract that caps the cost of construction at a maximum (not-to-exceed) value where payment is based on actual costs during construction. For either payment approach, the Cabinet may utilize provisional bid items or allowances outside of the lump sum or GMP designed to mitigate risk (refer to Section 4 for additional definition of provisional bid items and allowances). The intended contract payment provisions should be noted in the RFP and defined in the construction contract documents.

3.5.13 Contractor Prequalification

Pursuant to Section 102.01 of Kentucky's Standard Specifications for Road and Bridge Construction, all Proposers and subcontractors must be prequalified by the Cabinet and hold a Certificate of Eligibility as described the Cabinet's regulations (in accordance with KRS Section 176.140). Some prequalification is required as a condition for submitting a Proposal, and others may be required at the time of construction. The RFP should clarify any prequalifications required in order for the CMGC proposal to be deemed responsive. The PM works with the Division of Construction Procurement to establish required prequalifications. The Cabinet may reject a Proposal if the Proposer does not meet all qualifications. All subconsultants and subcontractors used by the Contractor must be prequalified to perform work for the Cabinet. Entities which have not been prequalified are not eligible to work on a project.

3.5.14 RFP Development & Advertising

The procurement process for CM/GC proceeds directly to the advertisement of the RFPs, without submittal of an initial Statement of Qualifications. Though only one document is submitted by interested Contractors, the Cabinet can elect to shortlist proposers at the

interview stage. Selection is determined in accordance with the evaluation criteria set forth in the RFP.

Use of RFP Template: RFP Templates have been developed to maintain consistency between projects. The contents of the RFP must be modified based on the scope of work, goals, and risks of each project.

The Alternative Delivery Program Manager may assign an Alternative Delivery Support Consultant to assist in developing the RFP. The Alternative Delivery Program Manager and PM will be responsible for developing the letter agreement for the Alternative Delivery Support Team contract. The Alternative Delivery Program Manager will work with the PM to schedule an RFP development meeting to determine the qualitative evaluation criteria (including sub-criteria) and relative weighting for the project.

The development of the RFP qualitative evaluation criteria should be a systematic, thorough process. The qualitative evaluation criteria should:

- be tailored to the goals, as noted in Section 2, and risks for the project;
- be clear, defendable, and easy for the Proposers and public to understand;
- focus on items that bring measurable value to the project; and
- be tailored to the specialized aspects of the project.

When choosing the evaluation criteria to be used in the RFP, the following guidelines are provided to help guide teams when developing evaluation criteria. The information below is to be considered a guideline. Each project should tailor the approach that best suits the individual project:

- **Choose Criteria That Discriminates Between Proposers.** Care should be taken to include enough criteria to allow the Cabinet to differentiate between highly qualified competitors.
- **Avoid Including Too Many Criteria in the RFP.** Too many criteria will complicate the scoring process, are burdensome for Proposers to address, and dilute the criteria, making it difficult to differentiate between Proposers. A suggested rule of thumb when selecting evaluation criteria is to use somewhere between four to six criteria in the RFP.
- **Balance the Qualifications and Approach.** Try to achieve an even balance between criteria that address the team's qualifications (key personnel, firm qualifications, past experience, etc.) and criteria that relate to approach (preconstruction approach, approach to risk management, approach to cost estimating, etc.).
- **Consistent RFP Evaluation Criteria.** There are many advantages of using consistent evaluation criteria in the RFP. Maintaining consistent criteria will make it easier for industry to understand the Cabinet's expectations and prepare for the procurement. Consistency also results in consistent scoring practices and expectations, resulting in more defensible procurement practices.

- **Allow Criteria to be Weighted to Meet Project Goals.** Evaluation criteria do not need to be weighted equally. Rather, the project team has flexibility to assign points to each individual criterion to best reflect each individual project's goals and circumstances, while keeping in mind programmatic consistency.
- **Avoid Specifically Asking for Past CM/GC Experience.** To ensure a fair procurement process for industry and inadvertently excluding qualified Contractors, avoid specifically asking for past "CM/GC experience." Instead, allow Proposers to include comparable experience on other similar contracting methods.
- **Avoid Overemphasis on "Construction Approach" or "Construction Schedule."** One of the key reasons for using CM/GC as a delivery method is to allow the Contractor, the Designer, and the Cabinet to work together in collaboration to develop the best approach and schedule for constructing the project. Any approach developed by the Contractor as part of the proposal will lack input from both the Cabinet and the design team, unintentionally defeating the primary principle of CM/GC, collaboration. Furthermore, Contractors are not provided with a stipend (like in DB contracting) to develop a well-thought-out approach with concepts that have been vetted by a design team. As a result, the construction approach has a high likelihood of getting modified significantly once the Contractor engages with the Cabinet and the design team. When using "Construction Approach" as a part of the evaluation criteria, balance it with "Preconstruction Approach" (or combine into a single criterion "Approach to Executing the Project") as both are required for a successful CM/GC experience.
- **Evaluating Safety Record.** Safety is an important part of every project. However, safety record is rarely a differentiator in CM/GC selection. If used to evaluate Proposers, consider providing minimal acceptable safety performance ratings in the RFP and make this criterion a pass/fail requirement instead of including it as part of the qualitative score.
- **Include "Approach to Pricing" in the Evaluation Criteria**. Including "Approach to Pricing" as part of the evaluation criteria is highly recommended. "Approach to Pricing" simply means asking the Contractor to describe the approach that they will use to price the work using a process that is open and transparent to the Owner. This should include providing a Cost Model that is open and transparent on topics such as risk, labor/equipment rates, production rates, crews, escalation, and so on. An open and transparent estimating process is critical to the success of a CM/GC project. Potential subfactors to include as part of evaluating this criterion include: (1) the Contractor's approach to providing open and transparent cost estimating/pricing; (2) the Contractor's approach to ensuring the Owner that it is getting a fair price for construction; and (3) the Contractor's subcontracting process. It is recommended that the Cabinet include a requirement in the RFP for the Contractor to provide a copy of its open book Cost Model, which will be needed both to validate the GMP and to compare estimated costs with actual costs during construction.

- **Guidelines for Key Personnel.** The qualifications of the Contractor's key personnel should always be included as part of the RFP criteria. Consider these guidelines in the RFP when requesting the qualifications for the following personnel:
    - **Personnel to Include in the RFP:**
        - **Project Manager, Construction Manager, and Lead Cost Estimator**. Always include these positions as part of the key staff requirements. These positions are critical to success in CM/GC and are often differentiators.
    - **Optional Personnel to Include in the RFP Based on the Project Characteristics:**
        - **Preconstruction Manager.** If the project has a long or complex Preconstruction Phase, include the Preconstruction Manager as part of the key staff. For smaller projects, the Contractor's Project Manager may fill both positions. However, for more complex projects, it is beneficial to allow the Contractor to include a dedicated Preconstruction Manager on its team who focuses on finding opportunities for innovation and optimization during the Preconstruction Phase of the project.
        - **Project Scheduler.** For projects with long durations or complex phasing, include the Contractor's Project Scheduler as part of the key staff.
        - **Quality Managers.** This position is rarely a differentiator in selection. Include only if this role is critical to achieving the project goals.
        - **Value-Added Specialists.** Allow the Contractor to propose one or two "value-added" specialists as part of the key staff. This can be a differentiator in selection.
    - **The number of key personnel to include in an RFP is at least five but no more than eight.**

Table 3-2 summarizes potential qualitative evaluation criteria to be considered for a RFP.

Table 3-2: Potential Qualitative Evaluation Criteria for CM/GC RFPs

Qualifications	Approach
• **Qualifications of Firm and/or Key Subcontractors** • **Qualifications of Key Personnel** • **Past Performance on Projects Similar in Scope and Complexity**	• **Approach to Preconstruction** • **Approach to Construction** • **Approach to Estimating and Subcontracting** • **Approach to Risk Management**

Federally Funded Projects: Per 23 CFR 635.112(j), the Cabinet must obtain FHWA approval of the RFP prior to its advertising the RFP. The Alternative Delivery Program Manager shall provide the FHWA with a copy of the RFP for approval prior to release of the RFP and notify FHWA when the RFP has been advertised.

The RFP will include a copy of the Cabinet's CM/GC Agreement and the Instructions to Proposers (ITP) document, which includes the following information:

- Up-to-date project and procurement information:
  - Project description and scope
  - Anticipated procurement and project schedules
  - Required Contractor pre-qualifications
  - Special requirements for Contractor experience
  - List of Contractors, Consultants, and entities with known conflicts of interest which are ineligible to participate on as a Proposer or team member
- Response protocols for questions submitted to the Cabinet
- Proposal submission requirements, including mandatory format and elements (i.e., sections) the TRC will evaluate
- Date and location of the Pre-Proposal Meeting. In most cases this meeting is held soon after Draft RFP publication.
- Criteria used to shortlist Proposers (if shortlisting is to be used)
- A clear definition of the required scope of work for the Contractor, including a list of anticipated deliverables.

Exhibits

Exhibit 3-5 CM/GC Instruction to Proposers Template

3.5.15 RFP Clarifications

After the RFP is published, the Cabinet will respond to questions submitted pursuant to requirements stipulated in the RFP. Responses must be posted on the Division's webpage before the Proposal submission deadline. All responses should be carefully drafted to ensure consistency and fair competition. While the main purpose of these responses is to clarify aspects of the RFP, they may also be used to substantively adjust the RFP via the addendum process. Clarification responses are meant to clarify the RFP but should not be used to materially change the RFP. Material changes to the RFP should be made via the addendum process.

Unless the RFP states otherwise, Proposers may only request information through the formal RFP Clarification process using the RFP Clarification Request Form (Exhibit 3-6). Proposers may not contact the Cabinet staff for additional project-related information outside of this process. The Cabinet reserves the right to disqualify Proposers that violate this restriction.

Listed below is the procedure for receiving and responding to RFP clarification questions:

(1) The PM (or their designee such as the Alternative Delivery Consultant Team) will retain document control of the clarifications.

(2) The PM will draft responses to the clarification questions using the RFP Clarification Response Form (Exhibit 3-7). Guidance to clarifications include:

  (i) All responses need to be fact based (no opinions).

  (ii) Refer to the RFP sections, as necessary, when drafting responses.

(iii) Clarifications should be numbered sequentially.

(iv) Do not disclose which contracting firm submitted the clarification question.

(3) The PM will send a draft of the clarification response to the Alternative Delivery Program Manager for review and approval.

(4) Clarifications are posted on the Alternative Delivery webpage in the Contract Documents folder.

Exhibits

Exhibit 3-6 RFP Clarification Request Form

Exhibit 3-7 RFP Clarification Response Form

3.5.16 RFP Addenda

RFP addenda may be generated by clarification questions or by the Cabinet to materially change the RFP. RFP addenda may have significant impacts to the CM/GC Proposals. If an addendum needs to be issued less than one week before the Proposal due date, the PM and Alternative Delivery Program Manager should consider extending the Proposal due date.

Addenda modifying the evaluation criteria are discouraged. However, if such an addendum is necessary, it should be issued early in the process before contracting firms begin preparing their Proposals.

Addenda are posted on the division of Construction Procurement's webpage.

For federally funded projects, the Cabinet must obtain approval from FHWA before issuing addenda which result in major changes to the RFP. The Alternative Delivery Program Manager will consult with FHWA regarding the content of the addenda to determine if FHWA approval is required and notifies FHWA when the addenda has been posted.

3.5.17 Contractor One-On-One Meetings

Contractor one-on-one meetings are encouraged, but not required, for CM/GC procurements. The Alternative Delivery Program Manager and PM jointly evaluate the benefit of using one-on-one meetings on a project-by-project basis. One-on-one meetings are held after the draft RFP is released. This meeting provides the Contractor an opportunity to obtain clarification about the RFP, ask questions regarding the project, and give teams an informal opportunity to discuss ideas and their approach with the Cabinet. The RFP should designate the date for the one-on-one meetings, or the dates if more than one-on-one meeting is used. At one-on-one meetings, the Cabinet should be represented by the Cabinet's PM, the Alternative Delivery Program Manager, and other subject matter experts as jointly determined by the PM and the Alternative Delivery Program Manager. Members of the TRC are also strongly encouraged to participate in the Contractor one-on-one meetings.

The Proposer summarizes the issues they want to discuss to allow the Cabinet to select appropriate meeting attendees. All matters discussed at one-on-one meetings remain strictly

confidential and non-binding. All meeting attendees will be required to sign a mandatory Confidentiality and Non-Disclosure Agreement (see Exhibit 3-3).

3.5.18 Re-Issuing and Withdraw Procurements

If the Cabinet does not receive at least two Proposals, they may withdraw the CM/GC procurement, re-advertise the RFP, or proceed with evaluation based on a single Proposal. The Cabinet may also reject all Proposals (regardless of the number of Proposals received) and re-issue or withdraw the procurement. The decision depends upon factors such as project schedule, modification of the scope, and quality of the short-listed contracting firms. The PM will make a recommendation to the Awards Committee on which option is best-suited for the project. The Awards Committee will make a recommendation to the Commissioner of Highways for approval.

If the decision is made to re-advertise the CM/GC procurement on federally funded projects, the Alternative Delivery Program Manager will notify FHWA in writing of the Cabinet's decision to cancel the current procurement and request concurrence prior to moving forward with re-solicitation.

The Division of Construction Procurement will develop a procurement cancellation letter to send to all the contracting firms notifying them of the cancellation. The procurement cancellation letter should follow up with an Official Order signed by the State Highway Engineer.

3.5.19 Evaluation of Proposals

3.5.19.1 Development of Scoring Procedures and Optional TRC Training

The published RFP describes the process and criteria to be used to evaluate Proposals. Evaluation criteria should align with the requested qualifications. The Cabinet should develop scoring procedures that are logical and defensible and reduce or eliminate scoring subjectivity between evaluators. One way to significantly reduce scoring subjectivity is to develop project-specific scoring manuals that clearly outline how the TRC should score a particular criterion and assign points. The Alternative Delivery Program Manager, may, at their discretion and on a project-by-project basis, require all members of the TRC to undergo a training before they receive the proposals and scoring manuals. The training includes a project-specific overview that includes the project goals, complexities, risks, schedule, and budget; characteristics of the work; and proposed scope of work. The training also reviews the scoring manuals, feedback requirements, and scoring system.

3.5.19.2 Proposal Review for Responsiveness to Minimum Requirements

Upon their receipt, the PM, or their designee evaluates Proposals to confirm that Proposers meet the minimum requirements specified in the published RFP. If a Proposer is found to be non-responsive, the Cabinet notifies the Proposer in writing within two (2) business days of the determination. The written notification must explain why the Proposal was found non-responsive. It may be delivered via email. The PM or their designee will draft the notification. The Division of Construction Procurement is responsible for transmitting the correspondence to

the Proposer. The correspondence should notify the Proposer if the Cabinet deems the deficient issue capable of being remedied.

After receiving this notification, a Proposer is requested to submit a remedy response, within 24-hours or as outlined in the notification from the Cabinet. The Proposer may include a written request in their response to the Cabinet asking the agency to reconsider its non-responsive determination. The notification sent to a non-responsive Proposer will include clear instructions for submitting a request for reconsideration. The Proposer must submit their request in writing to the Division of Construction Procurement. It should clearly enumerate reasons why the Proposer believes the Cabinet has made an error in its determination. Any supporting documentation must be submitted with the request. Before making a final determination, the PM obtains concurrence from the State Highway Engineer's Office. The Cabinet notifies the Proposer in writing of the final determination within three (3) business days. If additional time is needed to make a final determination, the Cabinet notifies the Proposer in writing (through the Division of Construction Procurement) of the estimated response time.

3.5.19.3 Evaluation Procedures

Each member of the TRC uses the RFP's evaluation criteria (and evaluation scoring manual, if used) to score responsive Proposals. TRC members must score Proposals independently and not discuss with anyone the specifics of Proposals or their scores.

The PM, the Alternative Delivery Program Manager, FHWA (as applicable for Federal Projects), and the Division of Construction Procurement oversees that the procurement is conducted in accordance with KYTC practice, the project evaluation manual (if used), and federal regulations. Legal staff can provide advice on responsiveness issues.

For complex projects and/or technically complex issues, the TRC may ask Project Team members or other Cabinet subject-matter experts to clarify technical matters during the review process. Subject-matter experts must sign and abide by the same confidentiality agreement as TRC members. Questions submitted by the TRC should only pertain to a specific, technical issue and be directed through the PM. Discussions about specific Proposers or their Proposals are not allowed.

After TRC members independently evaluate Proposals, a consensus Scoring Meeting is held. At this meeting the PM serves as the TRC chair and acts as a facilitator. All committee members must attend the meeting. The PM is encouraged to include a representative from the Division of Construction Procurement (typically the Alternative Delivery Program Manager) to provide oversight and ensure the scoring process is fair (these representatives do not vote). At the meeting, TRC members discuss their assessments and agree on a consensus score and rank Proposers against criteria published in the RFP. Proposals should be scored using adjectival scoring or as otherwise approved by the Alternative Delivery Program Manager. Once scoring is complete, the Division of Construction Procurement representative certifies the scores and finalizes the scoring documentation. Proposal rankings may be used to shortlist Proposers.

3.5.19.4 Request for Clarification of Proposals

If the TRC needs a Proposer to clarify an element of their submittal, the PM prepares a written request that is delivered through the PM via the project email address. The email should clearly state the date by which a written response is needed. The Proposer's response is directed to the project email address then forwarded to the TRC from the PM. The TRC reviews responses to determine if they are adequate, whether additional clarification is needed, or if an in-person meeting is necessary. Changes or modifications to the Proposal are not permitted.

3.5.20 Short-Listing

Short-Listing is optional. The Cabinet may select solely based on Proposer's qualifications in the Proposals. While the shortlist generally includes the top three Proposers, it remains at the discretion of the State Highway Engineer, Alternative Delivery Program Manager, and PM to determine how many Proposers will be Short-Listed based on the Proposer-submitted Proposal and the criteria in the RFP. The TRC makes recommendations to the Alternative Delivery Program Manager for Short-Listing for approval. If approved, the Division of Construction Procurement notifies Proposers of the results and posts the list of Short-Listed teams on its website and Short-Listed Proposers will be invited to advance to the interview process (see Exhibits 3-8 and 3-9).

Exhibits

Exhibit 3-8 Sample Shortlist Letter – Successful Team

Exhibit 3-9 Sample Shortlist Letter – Unsuccessful Team

3.5.21 Interviews

The interview is an important part of the selection process. Interviews provide an opportunity for the Proposer to present its qualifications and ideas but also allows the TRC to observe the project team and see how the team members work together. Interviews are mandatory for all CM/GC procurements. Interviews are assessed based on the evaluation criteria for oral interviews listed in the RFP. The weight of the interview should not exceed 20% of the total score. The TRC will establish interview evaluation criteria and questions in advance of the interview and use the same pre-scripted interview questions for each Proposer. Using the same questions for all Proposers allows the selection panel to score each team on equal terms. Unless otherwise approved by the Alternative Delivery Program Manager, interview questions should be developed prior to the evaluation of proposals to avoid biasing questions to a particular Proposer. The Alternative Delivery Program Manager and the PM may provide training to the TRC on the interview process prior to conducting the interviews. For Federalized projects, the PM invites FHWA to participate in the interview process.

3.5.22 Selection and Notification Procedures

Selection Approval: The Proposal evaluation and scoring process results in a recommendation to the Awards Committee. The Awards Committee must review the TRC's recommendations and has the ultimate approval authority for all KYTC CM/GC contractor procurements. The PM will prepare a presentation to the Awards Committee summarizing the TRC's recommendation. The

Alternative Delivery Program Manager and the PM will meet with the Award's Committee to review Proposal scores and to answer questions about the evaluation process. The Alternative Delivery Program Manager will post the aggregate scores from the technical proposal and interviews prior to meeting with the Award's Committee. The Awards Committee may concur in the result and ratify the TRC's recommendations or they may reject the TRC's recommendations and direct other appropriate action. The selection is not final until the Awards Committee has concurred. If the work covered under the Preconstruction Phase Amendment is federally funded, the Cabinet will request concurrence from FHWA prior to notifying the apparent successful Contractor.

Notification: After obtaining the Awards Committee's concurrence on the Contractor selection, the Cabinet will call each contracting firm's designated point of contact with the results of the selection. The PM notifies the successful Proposer, and the Alternative Delivery Program Manager notifies unsuccessful Proposers.

- Do not inform contracting firms that they were unsuccessful via voicemail.
- Offer each contracting firm a debriefing meeting to take place after the CM/GC Agreement is executed.

3.5.23 Debriefing Meetings

Debriefing meetings provide feedback to contracting firms on their Proposals. These meetings are one-on-one meetings that occur after Proposal evaluations and selection. Debriefings take the form of a face-to-face meeting either virtually or in person. All interested contracting firms that request a debriefing will be offered a meeting unless a firm protests or files legal action against the procurement. Debriefings offer Proposers a chance to receive comments on the merits and deficiencies of their Proposals. The Cabinet will schedule debriefings after execution of the CM/GC Agreement, but not before the end of the protest period listed in the RFP, including debriefs for Proposers that were not shortlisted (in the case where the Cabinet shortlists for interviews). However, if any team protests or takes legal action against the procurement, debriefings should be delayed until the protest or legal process is resolved, unless approved by the Office of Legal Services. The Cabinet should use debriefings to obtain feedback from Proposers on the procurement process. Debriefing meetings are at the request of the Proposer and not required unless requested. Proposers submit an agenda to the PM in at least 2-days in advance of the debriefing meeting to help the Cabinet prepare for the discussion.

The Alternative Delivery Program Manager and the PM should attend all debriefing meetings. TRC members are encouraged to attend, but their presence is not mandatory. Unless specific debriefing instructions are included in the Project's RFP, follow the guidelines provided in Section PS-15-04.0700 in the Division of Professional Services for scheduling and conducting debriefings. On Federally funded projects, the Cabinet will offer FHWA the opportunity to attend the debriefing meeting.

Listed below are additional procedural guidelines for debriefing meetings:

1. Meetings should be one-half hour in length.

2. The PM and Alternative Delivery Program Manager should attend debrief meetings between the Cabinet and contracting firms. Members of the TRC are also encouraged to attend the debrief meeting.

3. The Alternative Delivery Program Manager and the PM prepare for the debrief by reviewing the agenda submitted by the Proposer and materials from the consensus scoring process.

4. The Cabinet will discuss the requestee's Proposer's strengths and weaknesses, the breakdown in scoring for the requestee's Proposal, and the ranking of Proposers and their overall scores.

5. Do not discuss the contents of another contracting firm's Proposal.

3.5.24 Execute CM/GC Agreement and Finalize Preconstruction Phase Agreement

After notification and selection, the Cabinet executes the CM/GC Agreement and the PM meets with the successful Proposer to finalize the scope of work and cost associated with the Contractor's initial Preconstruction Phase Amendment. Once the parties have agreed upon the scope of work and cost for the Preconstruction Work the PM and the Alternative Delivery Program Manager presents the negotiated scope for Preconstruction Work to the Awards Committee for their approval, whereupon the Cabinet issues a Preconstruction Phase Amendment to document the agreed upon cost and scope. The PM may issue one or more Preconstruction Phase Amendments throughout the Preconstruction Phase of the project to adjust scope and budget as necessary to progress the work.

3.5.25 Change in Personnel after Selection

Contracting firms may request changes in personnel listed after selection. The requests often occur due to employees leaving the firm or other organizational changes. Because contracting firms are selected based on the qualifications listed in the Proposal, changes in key personnel must be carefully evaluated. The processes and procedures for reviewing and approving changes in personnel after selection are listed below:

1. The Contractor must submit a written request to change key personnel to the PM prior to replacing the contracting firm member.
2. Assess if conflict of interest exists or not, as specified in Section 3.1 of these procedures; and recommend action (if applicable).
3. The PM will determine if the replacement is equal or better.
4. The PM will provide a copy to the Contractor and will retain a copy in the project file.

4 PRECONSTRUCTION ACTIVITIES

The start of the Preconstruction Phase marks the beginning of the collaborative partnering between the Cabinet, the Designer, and the Contractor. The unique roles and defined responsibilities of each member during the Preconstruction Phase of the project are described in this Section. The project team's focus should be on building partnership and ensuring open communication to minimize risk, review constructability, improve the project schedule, incorporate innovations, and maximize work within the budget. Figure 4-1 shows a typical preconstruction organization of a CM/GC team.

4.1 CM/GC Preconstruction Agreement and CM/GC Contact Phasing

One way that CM/GC contracting differs from DBB contracting is the form of the contractor's contract or agreement. In CM/GC delivery, the contractor's contract is divided into two distinct phases: The Preconstruction Phase and the Construction Phase. The Preconstruction Phase begins upon execution of the CM/GC Agreement, which authorizes the Contractor to proceed only with certain tasks related to performing Preconstruction Work as outlined in the Contractor's preconstruction scope of work. Because the construction schedule and the approach to constructing the project is collaboratively developed with the Contractor as the design progresses, the PM may need to issue one or more Preconstruction Phase Amendments to manage the Contractor's scope and fee throughout the Preconstruction Phase.

Construction Work is authorized by the execution of a Construction Phase Amendment, followed by one or more Pricing Package Amendments which document the scope and price associated with the Contractor constructing a given Pricing Package. The Contractor is not authorized to perform any construction services as part of the Construction Phase until their price for construction (as submitted in the Contractor's GMP) is validated by the Cabinet and a Pricing Package Amendment is executed (see Section 5, Price Validation in CM/GC Contracting). Each Pricing Package GMP is developed on an open book basis. The effort associated with developing Pricing Package GMPs is Part of the Contractor's scope of work performed during the Preconstruction Phase. The PM should strive to construct the Project through as few Pricing Package Amendments as practicable. See further guidance under Section 4.3.12. The Preconstruction Phase and the Construction Phase may overlap if more than one Pricing Package Amendment for Construction Work is executed.

4.2 Preconstruction Roles and Responsibilities

The Cabinet's Project Manager (PM)

In CM/GC, the PM takes the lead role in managing and facilitating the Preconstruction Phase. PMs should be aware that their role in a CM/GC project may require more active team coordination and direct involvement than other project delivery methods. The PM is responsible for guiding design decisions while overseeing the collaborative effort between the Designer and Contractor. The PM is responsible for facilitating this collaborative process through active communication and project team meetings. The PM also leads the price validation process, reviewing both the Contractor and Independent Cost Estimator (ICE) estimates. The PM may get help from other specialists to perform this

task, including the Alternative Delivery Support Consultant, the Cabinet's internal estimating resources, or another qualified consultant with this estimating expertise. The PM or their designee serves as a facilitator between team members, and later, as the lead negotiator for the Cabinet during the pricing validation process.

Designer or Design Consultant

In CM/GC, as with traditional DBB projects, the Designer contracts directly with the Cabinet and takes direction from the Cabinet in developing the design. In CM/GC, the role of the Designer does not change as much as the role of the Owner for a CM/GC project. As in a DBB, the Designer's main roles are to design the project, manage the design, and communicate with the PM. However, the Designer does give up some of the control over design decisions due to the higher involvement of the Owner. On a CM/GC project, the Designer is also required to work with the Contractor and the Cabinet, manage the iterative design process vital to CM/GC success, and anticipate changes in the design. The Designer must keep the PM informed and involved in all design reviews and risk decisions.

Independent Cost Estimator (ICE)

The ICE is the Cabinet's default Estimator during the Preconstruction Phase of the CM/GC delivery method. The ICE uses production-based estimates in the same manner that the Contractor estimates and bids on a project. The ICE has the responsibility to question the Contractor's prices, quotes, methods, and estimate to ensure that the Cabinet is receiving a fair and open price from the Contractor. The ICE is also expected to know the local markets and network with subcontractors and DBEs. The ICE needs to work with the Contractor to understand the competitive market near the project site, regionally, nationally, and globally. The ICE is required to bring on subject matter expertise if the ICE lacks in-house knowledge of a major work item.

Construction Manager/General Contractor (CM/GC)

On CM/GC projects, the Contractor becomes a critical part of the Preconstruction team, performing the following tasks in that role:

- Reviewing construction plans to provide input on constructability, construction phasing, traffic control, materials, and design decisions.
- Providing input on ideas on how to package the work to optimize the project schedule, reduce construction risk, and lower the cost of construction.
- Assist the team in suggesting design alternatives and innovations that improve the project schedule and cost.
- Evaluating project risks and helping the project team develop input for the project Risk Register.
- Establishing the Cost Model and pricing milestone estimates.
- Obtaining subcontractor quotes and coordinating with subcontractors.

- Identifying long lead items (material, equipment, and/or utility relocations) that should be procured through early Pricing Packages.

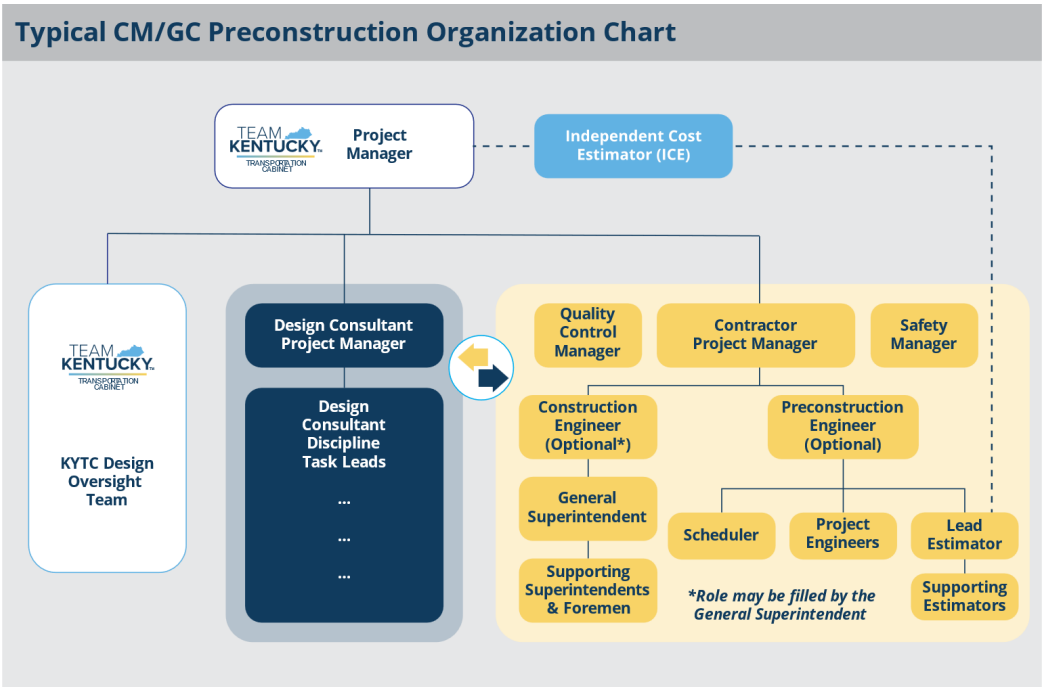

Figure 4-1: Typical 1 CM/GC Preconstruction Organization

4.3 Key Elements of the Preconstruction Phase in a CM/GC Approach

CM/GC project delivery requires a collaborative effort between the Cabinet, the Designer, and the Contractor. All parties must act as an integrated team working to develop innovative design solutions that incorporate the Contractor's proposed means and methods. This section describes the processes, meetings, workshops, and reports that the Cabinet has established to assist the PM in facilitating the Preconstruction Phase.

4.3.1 Project Kickoff Meeting

The CM/GC Preconstruction Phase begins with a Project Kickoff Meeting. The Project Kickoff Meeting is used to review the team's roles and responsibilities, preliminary schedule, scope of work and project goals. The Project Kickoff Meeting should cover the following items:

- Introduce the project, CM/GC contracting, partnering, and the project stakeholders
- Discuss roles and responsibilities related to the CM/GC process
- Present project goals and objectives
- Discuss project status, funding, and preliminary schedule
- Present project scope
- Identify major project risks and potentially develop an initial Risk Management Plan (developing an initial Risk Management Plan may be a separate meeting)

- Discuss the pricing milestones and if possible, establish the dates for any early milestones
- Review/discuss relevant plans, specifications, and reports
- Conduct virtual or in-person project site tour
- Schedule progress meetings
- Establish Communication and Document Control Plan

4.3.2 Partnering

Partnering is critical to the success of a CM/GC project, including during the Preconstruction Phase of the Project. Partnering is a process for developing a spirit of teamwork and cooperation through shared goals, defined issue resolution procedures, clear action plans, and the monitoring of team performance to ensure that goals are achieved. During the Project Kickoff Meeting, the project team should discuss the partnering approach to be implemented on the project, including during the Preconstruction Phase. Formal partnering meetings are held throughout the Preconstruction Phase of the project, at a frequency established by the PM and the Contractor's Project Manager. The Cabinet may engage an independent third-party Consultant to facilitate partnering meetings for the Project. As a part of the partnering process, the PM and Contractor Project Manager are encouraged to meet regularly (monthly when possible) with management from their respective organizations one step above their level. This approach helps keep executives from both organizations informed of project progress and fosters a working relationship that helps the team make decisions and more effectively resolve conflict.

4.3.3 Collaborative Design Development

As part of the collaborative design process, the Contractor provides constructability reviews and continuous feedback to the design team for the feasibility and practicality of any proposed means and methods; selected materials, equipment, and labor; material availability; site improvements; earthwork and foundation considerations; and coordination of the drawings and specifications, verification of quantities, and so forth. Through this process, the Contractor provides alternatives that result in cost or schedule savings or limit impacts to the public.

The Designer has the opportunity to tailor the design to the Contractor's preferred means and methods[1]. Some of the most valuable input that the Contractor provides is a review of the actual construction phasing and staging that the Contractor uses during construction. By collaboratively developing construction phasing plans, the project team helps increase the potential that the construction schedule will be accurate and achievable. Significant design decisions can be made that reduce construction impacts to the public. The CM/GC project delivery method allows the Cabinet to evaluate and direct decisions regarding construction phasing and schedule, thereby determining solutions that provide the best value to the public.

[1] It is important to note that for schedule driven projects, the Cabinet must evaluate the benefits of incorporating approaches unique to the Contractor into the design development versus the risk of a delay if the design needs to be revised because the Contractor is not awarded the construction contract.

4.3.4 Complex Construction and Innovative Approach Development

CM/GC project delivery is particularly well suited to address complex construction projects and to use construction techniques unfamiliar to the Cabinet. The CM/GC method provides the opportunity to incorporate innovative approaches into the design development. The Contractor should provide input on the design during the design process and particularly at the design review meetings and pricing milestone design workshops. For CM/GC to achieve its full potential, the Cabinet and the Designer should strive to be open to the Contractor's suggestions and review innovative methods and materials under consideration.

4.3.5 Value Engineering (VE)

A formal Value Engineering (VE) Workshop must be conducted on all projects with a Total Project Cost Estimate of $50 million or more ($40 million for bridge projects), regardless of funding source, or the roadway status on the NHS. The Cabinet may decide it is beneficial to conduct a VE Workshop for projects with a lower cost as well. The PM works with the Cabinet and FHWA to determine the focus of the VE study, which may include cost and/or schedule improvements. Typically, the VE Workshop occurs during, or prior to, the 30% design development stage and must occur before the Contractor submits a GMP.

The VE Workshop is facilitated by a third-party engineering consultant not directly involved in the design process. The Contractor may be included in the VE Workshop if the Contractor has not been involved in advancing the preliminary design. Cost saving concepts developed through the VE Workshop during the Preconstruction Phase may be incorporated into the Contract Documents at the PM's discretion.

In CM/GC, value engineering by the Contractor occurs throughout the Preconstruction Phase during the iterative design and review process. Because the Contractor is hired by the Cabinet specifically to provide constructability feedback and help the Cabinet reduce construction costs, incentives are typically not awarded to the Contractor for Value Engineering Change Proposals (VECPs) submitted later during the Construction Phase. Only those Value Engineering Proposals that are the result of new technologies or techniques that become available during the Construction Phase should be considered for any schedule or shared saving incentives.

4.3.6 National Environmental Policy Act (NEPA) Process and CM/GC

Although project design can be accelerated and advanced through CM/GC, PMs need to be aware that the design must progress in accordance with the Code of Federal Regulations (CFR) which allows preliminary design activities to proceed prior to conclusion of the NEPA process, as long as preliminary activities do not materially affect the objective consideration of alternatives in the NEPA review process. The Cabinet is at risk for design alternatives that are determined not to meet previously approved environmental assessments. Concurrence from FHWA is required to proceed with final design before completion of the NEPA process, and the Cabinet does so at their risk and expense. Furthermore, the Contractor should not be part of, or influence, the environmental alternatives process. If the Cabinet elects to proceed with final design activities, at their risk and expense, prior to completion of the NEPA

process, those activities may be eligible for Federal reimbursement after the completion of the NEPA process, pending approval from FHWA (per § CFR 635.506(c)) based on FHWA's review of those activities and the associated costs. Once the project has obtained environmental clearance, the Contractor can provide significant value by mitigating environmental impacts identified in the environmental document.

4.3.7 Design Milestone Review Process in CM/GC

At each agreed-to milestone, the Designer prepares a review set of construction plans and specifications. The Cabinet, the Designer, and the Contractor participate in project design review meetings at each milestone submittal and as construction documents are finalized for each Pricing Package as outlined in Section 5. The use of an online collaboration software to share comments with multiple parties is encouraged (e.g., SharePoint, BlueBeam ReVu, etc.). The Designer collects all design review comments and questions from the various participants, provides reports to the Cabinet, and ensures that all comments and questions have either been incorporated or resolved to the Cabinet's satisfaction.

4.3.8 Construction Plans and Specifications in CM/GC

Construction plans and specifications in CM/GC proceed in similar fashion to DBB except that the process is more iterative, involving the Contractor for constructability reviews and design alternatives. In addition, the payment terms and construction terms and conditions on CM/GC projects may need to be modified from standard DBB construction plans and specifications to reflect the terms contained in the CM/GC Agreement.

4.3.9 Construction Schedules

The Contractor is responsible for preparing and maintaining an overall project schedule, with input from the Designer and the Cabinet. The project schedule should be in a Critical Path Method (CPM) format that is coordinated with the Designer's design schedule and agreed-upon milestone dates. The schedule must have reasonable detail to allow for assessment of potential early Pricing Packages. The project schedule is updated at each milestone estimate, as further explained in Section 5.

4.3.10 Risk Management in CM/GC

Risk management is central to CM/GC project delivery. Throughout a project, the Designer, Contractor, and the Cabinet collectively collaborate to identify project risks, propose mitigation, and actively control risks. The Contractor is primarily responsible for identifying construction risks and preparing the associated cost and schedule impacts and monitoring and controlling risk during the Construction Phase. The Designer is responsible for advancing and refining the design to minimize or eliminate identified risks. The project team collaboratively discusses which party owns and controls the risk and assigns each risk to a project risk pool. Understanding which risks can and must be controlled by the Cabinet and which can and are best shared with or allocated to the Contractor results in an efficient and effective GMP and overall lower project cost.

The risk analysis and management process generally includes the following five steps, which are described in detail in subsequent sections:

1. Identify the risk.
2. Assess and analyze the risk.
3. Mitigate and plan for the risk.
4. Allocate the risk.
5. Monitor and control the risk.

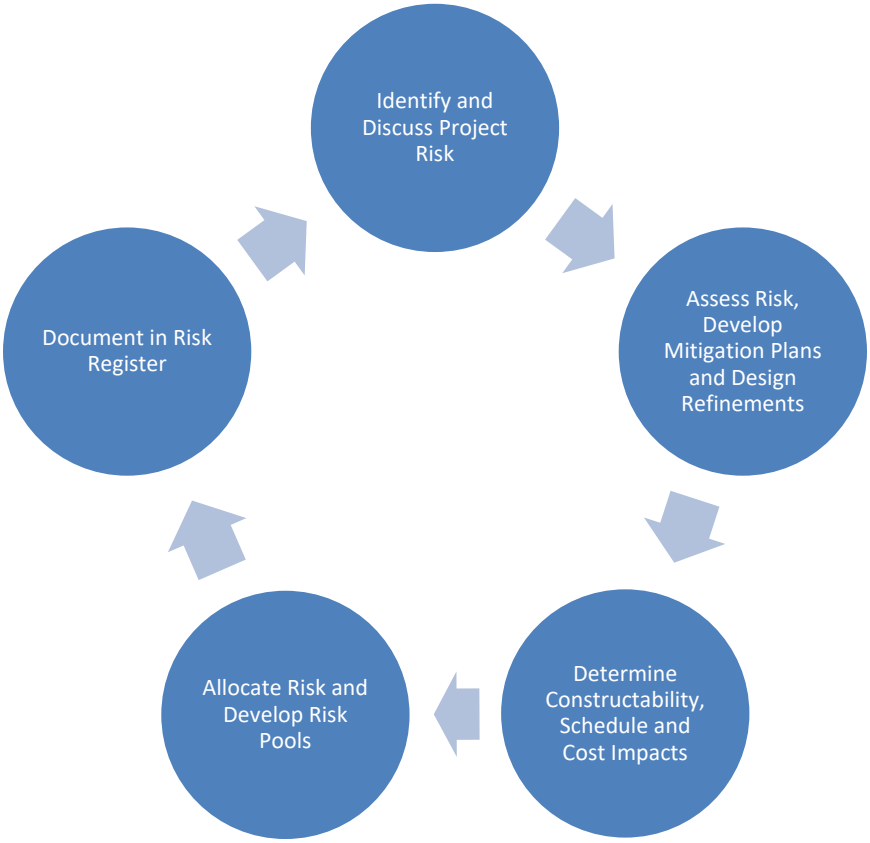

Figure 4-2. Risk Management Process

4.3.10.1 Identify the Risk

General project risks are first identified during the Cabinet's project delivery selection process described in Section 2 of this Guidance Document. During the delivery selection process, the team likely has identified project-specific risks that would benefit from early Contractor collaboration and led to the selection of the CM/GC project delivery method. During the Preconstruction Phase, the Contractor further identifies the project risks and proposes methods for controlling those risks. These early identified risks become the basis of the initial project risk matrix. The project team reviews the initial risk matrix during formal risk workshops held at pricing milestones to reach a consensus of project risks, agree on the likelihood that the risk will occur, and discuss a general approach to mitigate the risk or maximize an opportunity to provide value to the project. Additional project risks are then identified and addressed throughout an iterative design development process.

4.3.10.2 Assess and Analyze the Risk

During the Preconstruction Phase, the project team collaboratively assesses the project risks through a series of risk management meetings. These meetings are held at established pricing milestones submittals, although often additional meetings are beneficial. Initial risk management meetings typically focus on identifying and assessing project risks and investigating innovative design solutions. During later meetings, the focus shifts to discussions of the cost and schedule impacts, risk allocation, and development of the risk pools, if necessary.

4.3.10.3 Mitigate and Plan for the Risk

In a traditional DBB, without the benefit of the CM/GC collaborative process, project risks result in the Contractor adding contingency to the bid. In DB, there is more opportunity to properly allocate and manage risk, but still the Contractor must often add contingencies to the bid to cover risk that the Contractor is not in a position to effectively manage. In CM/GC, there is a unique opportunity to advance and refine the design to reduce Contractor-identified risk. Risks that had been eliminated through design changes can then be either removed from the Risk Register or noted as having been resolved. If the project risk cannot be eliminated, it remains on the Risk Register and the Contractor helps the Cabinet prepare a mitigation plan for the risk. Mitigation can involve design changes, avoidance of risk to eliminate or reduce the risk, or transferring the risk to a different risk pool.

Some risk can be mitigated through the use of early Pricing Packages. The Contractor should look for any material or equipment that is likely to benefit from early procurement. The project team should review the project and identify construction phases that are likely to benefit from staged construction packages. For example, an early Pricing Package could be procured to allow for utility construction to proceed or to allow the project schedule to advance for a phase of construction while project details are resolved on subsequent phases.

4.3.10.4 Allocate the Risk

Once a risk has been identified and quantified, it is assigned to either the Cabinet or the Contractor. The goal is to assign the risk to the party who is best able to control the risk. Risks can be allocated solely to the Contractor or the Cabinet, or they can be shared.

4.3.10.5 Monitor and Control the Risk

The objectives of risk monitoring and control are to systematically track the identified risks, identify any new risks, and effectively manage the contingency reserve. Risk monitoring and updating occurs after the risk mitigation and planning processes and then continues through the Preconstruction and Construction Phases. The list of risks and associated risk management strategies are likely to change as the project matures, new risks develop, or anticipated risks are mitigated.

Periodic project risk reviews repeat the tasks of identification, assessment, analysis, mitigation, planning, and allocation. Regularly scheduled project risk management meetings can be used to ensure that project risk is continually reviewed. If unanticipated risks emerge, or a risk's impact is greater than expected, the planned response or risk allocation may not be adequate. At this point, the project team

must perform additional planning to control the risk. Changes to project risks must be documented using the established Risk Register.

4.3.10.6 Risk Register

The Risk Register is a tool used to document the risk management process. The purpose of the Risk Register is to define the risks, document the risks, identify cost and schedules impacts associated with the risks, and produce detailed mitigation plans for the risks. Each Risk Register includes the agreement of how the Cabinet and the Contractor defined the risks, who is responsible for the risks, and how the risks are to be paid for during construction. The Cabinet is responsible for preparing and updating the Risk Register with input from the Contractor, the Designer, and the ICE. The PM may utilize the risk register that was developed by the Cabinet early in the project during the delivery selection process or as developed as part of the PDSM process (if used).

By the end of the Preconstruction Phase, the Risk Register describes all known project risks and becomes part of the Contract Documents. This Risk Register includes the agreements between the Cabinet and the Contractor that defines risk management for work package(s). Copies of the Risk Register are made available to the design team, the Cabinet, and the Contractor construction teams as the project goes into construction. During the Construction Phase, the Contractor is responsible for monitoring and controlling the risks that have been allocated to the Contractor through the Risk Register.

4.3.10.7 Contingency Pricing and Risk Pool in CM/GC

Contingency is bid into every project, regardless of contracting method, and reflects the risks present at the time the Contract is bid. Typically, higher risk means higher contingency and lower risk means lower contingency. One of the major benefits of CM/GC contracting is that it allows the Owner and Contractor to collaboratively work together during the Preconstruction Phase to better understand, manage, and reduce risks on the project, thereby lowering contingency costs. For CM/GC projects, risk is assigned to one of the following:

- **Contractor Owned Risks:** Risks that are retained by the contractor must be accounted for in their GMP as part of their bid contingency, such as risk for labor availability, material pricing fluctuations and availability, schedule delays that are the result of the Contactor's failure to perform, volatility in subcontractor pricing, and subcontractor management. The Cabinet and the ICE will review the Contractor's estimating assumptions to fully understand any contingency that the Contractor has assigned to the work. If the contingency is considered high, the Cabinet can work with the Contractor to reduce risks that are contributing to the high contingency, mitigate the risk through transferring the risk to a shared or provisional risk pool, or remove the risk from the Contractor entirely by accepting the risk in the Cabinet's risk pool. For pricing transparency and to facilitate GMP negotiations, risks owned by the Contractor should be clearly identified in the Contractor's and the ICE's open book estimates.
- **Cabinet Owned Risk:** Risks that are owned by the Cabinet should be captured as part of the Cabinet's contingency pool. The PM should consider taking ownership of the risk if the Cabinet has a better opportunity to manage it than the Contractor or if the risk is completely beyond the

control of the Contractor (e.g., weather, changes in site conditions, etc.). The PM may also consider taking ownership of the risk if they believe the probability of the risk occurring is less than the Contractor's assessed probability. For example, a Contractor is including a high contingency in a bid item to cover the cost of potential weather delays that could increase the rental costs for a piece of specialty equipment. The Cabinet may decide to take that risk and include this price within the Cabinet's contingency. If the weather delay occurs, the Cabinet is responsible for paying the Contractor. However, if the weather delay does not occur, then the Cabinet has saved the contingency cost without sharing the cost savings with the Contractor.

- **Provisional Risks:** Provisional bid items (sometimes knows as provisional sums) are a good tool for managing project risks that have a high amount of uncertainty, along with a high likelihood of occurring, but still have the potential for the Contractor to control. If the risk is encountered during construction, the Contractor is paid per the agreed-to payment specification and as outlined in the Risk Register. Examples include construction flagging (by the hour), railroad flagging (by the day), or rock excavation. The basis for the cost for provisional bid items is agreed to during GMP negotiations and validated by the ICE. Provisional bid items are typically paid on a unit cost basis but may also be paid on a lump sum basis or even on time and materials (T&M) basis. Using provisional bid items allows the Cabinet the ability to recover the unrecognized risk and collaboratively assist with controlling the risk when possible. If the Contractor and the Cabinet cannot agree to an appropriate price for the provisional bid item, the PM may decide to pay for the risk (if it occurs) based on a T&M basis (see Time and Material Allowances [T&M] below) or accept the risk entirely into the Cabinet Risk pool. Provisional bid items may be:
    - **Capped or Uncapped:** For capped provisional bid items, the Contractor receives payment up to the maximum value of the provisional bid item beyond which the contractor owns the risk.
    - **Shared or Unshared:** When a provisional bid item is shared, any remaining dollars for that bid item is shared between the Cabinet and the Contractor upon project completion, using an agreed upon cost sharing ratio defined in the contract documents. When a provisional bid item is unshared, any remaining cost savings at project completion accrue to the Cabinet. The Risk Register should clearly define whether the provisional bid item is shared or unshared. The use of Shared provisional bid items incentivized the Contactor to actively manage the risk during construction. When considering the use of Shared provisional bid items, the PM should take care to avoid influence to set the initial budget for the provisional items artificially high to guarantee a savings at project completion. If there is limited or no ability for the Contractor to control or mitigate the use of the provisional bid item, there is no advantage to the Cabinet sharing the savings.

4.3.10.8 Risk Management as it Relates to the Pricing

Developing the Risk Register and assigning risk to a risk pool is integral to preparing the Contractor's pricing milestone estimates and the GMP. The Contractor and ICE are better able to prepare accurate estimates as project risks are identified and mitigated. Assigning risks to the most appropriate risk pool

allows the Contractor to remove contingencies from the bid items. The pricing milestone estimate becomes more accurate with each successive pricing milestone. The open book format allows the Cabinet to fully understand the contingencies within the pricing milestone estimate and the risk pools provide a tool to separate risk from discussions surrounding bid item costs.

4.3.10.9 Risk Workshops

A risk workshop is typically held at each pricing milestone and includes the Designer, Contractor, ICE, and the Cabinet. If the project is federally funded, FHWA is invited. The purpose of the meeting is to review project risks, discuss mitigation and associated costs, identify the responsible party to manage the risk, and establish risk pools. Risk workshops are covered in more detail in Section 5.

4.3.11 Pricing Packages

An advantage of CM/GC project delivery is that it allows the flexibility to perform construction in phases with multiple Pricing Packages as project phases are identified and approved for construction. Reasons for using multiple Pricing Packages may include project phasing to match funding schedules, being able to construct a phase of the project while right of way is secured for additional phases or releasing a utility package in advance of roadway construction to advance the project schedule.

In addition, early Pricing Packages may be used to procure long-lead time construction materials and equipment in advance of construction, thus optimizing the overall project schedule. Materials may also be procured with early Pricing Packages to avoid price escalations for volatile construction materials.

In all instances, the Cabinet should strive to make all early Pricing Packages severable and independent, such that the Cabinet is not obligated to have the Contractor construct any other portions of the work. Per § 23 CRF 635.505, paragraph (b), under no circumstances may a contract for an early Pricing Package be awarded prior to completing the NEPA process. Each Pricing Package must obtain all required clearances, including applicable FHWA approvals, and be evaluated and awarded through the Pricing Validation process (Section 5). For this reason, a single package may be more efficient as the Pricing Validation process and contracting process is only performed once. Furthermore, a single package helps ensure that the cost of the entire project is within budget before proceeding with construction.

Per FHWA's Final Rule for CM/GC, early Pricing Packages are intended for minor elements or stages of project construction that can be accomplished during the period after NEPA is complete and before design of the project is sufficient to permit the Cabinet and the Contractor to reach price agreement for construction of the entire project. Early Pricing Packages are not to be used to piecemeal construction. Therefore, when considering an early Pricing Package for any federally funded project, it is important that the PM and Alternative Delivery Program Manager consult with FHWA to verify the early Pricing Package scope of work constitutes minor elements or stages of project construction.

When considering an early Pricing Package, it is important to consider items that may benefit from remaining in place for subsequent Pricing Packages. These may include items such as a field office, temporary sheeting, erosion/sediment control, and traffic control. If the PM determines that it is beneficial to leave certain items in place for a future Pricing Package(s), the scope of work and basis of

payment for each item must be clearly defined in each respective Pricing Package Amendment (i.e., each contract is biddable and buildable) and the Pricing Packages must remain severable.

In the event that the Cabinet has authorized the Contractor to begin construction for an early Pricing Package but is unable to successfully negotiate a GMP for subsequent Pricing Packages and elects to terminate the CM/GC agreement and procure another contractor to complete the work, it may be necessary to execute a Change Order as part of the termination process. For example, the Cabinet may need to compensate the Contractor to demobilize or to maintain certain items of work that must be left in place until another Contractor can take over the work. For federally funded projects, the Cabinet will evaluate with FHWA on a case-by-case basis federal reimbursement eligibility for any cost costs that must be paid for twice because of terminating the CM/GC Agreement.

4.3.11.1 Approval Process for Severable Pricing Packages

The PM must obtain approval to progress the work in phases using severable Pricing Packages. This approval should occur as early as possible. In many cases the idea to use multiple Pricing Packages on a CM/GC project occurs early in the project development process when the Cabinet evaluates risks and other factors to justify the use of CM/GC as the project's delivery method. As part of this approval process, the PM must recommend to the Alternative Delivery Program Manager that the CM/GC contract be separated into Pricing Packages and demonstrate that this approach is feasible and in the Cabinet's best interest by the following:

1. Demonstrate that each proposed Pricing Package is stand-alone and severable. The PM must demonstrate that the work to be performed will not conflict with the work to be performed under subsequent Pricing Packages. Stated another way, the Cabinet should proceed as if separate contractors are being hired to perform each Pricing Package. This approach helps ensure the Cabinet receives fair/reasonable GMP for subsequent Pricing Packages and, in the event the Cabinet and the Contractor are unable to reach agreement on the price for a Pricing Package, the Cabinet may procure the construction of the remaining Pricing Packages through another procurement process.
2. Document that Pricing Packages benefit the project. The PM must have demonstrable evidence of a benefit with using severable Pricing Packages. This may include cost savings, schedule savings, or risk mitigation. Any documented savings should account for potential cost or schedule increases, or risks, that result from separating the project into Pricing Packages – such as additional time and costs needed for design.
3. Document that the project funding will allow for the proposed severable Pricing Packages and that it is feasible to obtain necessary approvals/authorizations, such as those needed from FHWA.

The Alternative Delivery Program Manager presents the packaging approach to the State Highway Engineer's Office for their approval, including receiving direction regarding the need to seek further approval from the Awards Committee.

4.3.11.2 Requesting an Estimate When Issuing an Early Pricing Package

If an early Pricing Package is being issued, a construction estimate for the entire project should be developed prior to awarding a contract for the early Pricing Package. The estimate for the entire project is used by the Cabinet to confirm that the overall construction scope can be completed within the available project budget. This estimate may be developed by the Contractor or by others. The PM consults with the Alternative Delivery Program Manager regarding the most appropriate party to develop the overall cost estimate. If the Contractor prepares the estimate for the entire project, the Cabinet's expectation is that this the work for the overall project can be constructed for or below the estimate, given the level of detail provided in the plans being used as the basis for the estimate and subject to documentable changes in pricing assumptions or scope of work that affects pricing. Exact timing for requesting an estimate for the entire project is evaluated on a project-by-project basis; however, it is typically requested in conjunction with an estimate for an early Pricing Package.

There may be situations when there is a low-level of design available to estimate the entire project scope of work at the time an early Pricing Package is needed; therefore, obtaining an accurate estimate, or one without significant contingency, is not possible for the entire project. In these situations, the PM and Alternative Delivery Program Manager must consult with State Highway Engineer's Office to determine whether to issue an early Pricing Package without an estimate that confirms the overall construction scope can be completed within the available budget.

For federally funded projects, the Cabinet is required to provide FHWA with a total project cost estimate prior to FHWA's authorization of construction services, including authorization of an early Pricing Package.

4.3.11.3 Obtaining Clearances for Severable Pricing Packages

The PM is responsible for verifying that each Pricing Package can obtain the necessary environmental, right of way, and utility clearances and that breaking the work into separate Pricing Packages does not affect adjacent areas that do not have required environmental, right of way, or utility clearances.

4.3.12 Permits, Agreements, and Right of Way

In CM/GC contracting, the PM is encouraged to take advantage of the skills and expertise that the Contractor brings to the Project Team by allowing them to help the Cabinet with certain project development tasks, such as permits and agreements. Directly engaging the Contractor with the regulatory agencies[2] allows the agencies to know relevant construction details, such as staging or means and methods, versus the Cabinet having to make assumptions regarding these matters. At a minimum, the Contractor can help the Cabinet prioritize right of way acquisitions, utility agreements, or permits to optimize the overall schedule for the project.

[2] The Contractor is not allowed to engage with any regulatory agencies that are involved in NEPA approval process in the case where they are performing preconstruction activities prior to the approval of the NEPA document.

4.3.13 Office of Civil Rights and Small Business Development (OCRSBD) Goal Setting

As with DBB and DB, the OCRSBD may establish DBE goals that apply to the construction contract(s) for CM/GC projects. Depending on the project funding and scope of work, goals may be established for DBE and small businesses. In addition, On-the-Job Training (OJT) goals and Equal Opportunity Employment (EEO) requirements may be established for the project.

As noted in Section 3, the PM should engage the OCRSBD before the CM/GC procurement to inform them of the scope of work for the project, any anticipated Pricing Packages, the project funding, and the project schedule. This allows the OCRSBD to determine which goals will apply to the construction contract(s) and when those goals need to be established.

Once the Contractor is procured, the PM and Contractor should update the OCRSBD on the status of the project and engage OCRSBD in the Contractor's development of a quality subcontracting and workforce plan that helps ensure the applicable goals are met.

At 60% design, the project design plans generally contain a clearly defined scope of work to help the OCRSBD establish the applicable goals (including those for OJT). Furthermore, at 60% design there is a greater level of cost certainty, yet sufficient time is available for the Contractor to update their subcontracting and workforce plan (collaborating as needed with the PM and the OCRSBD), solicit subcontractor/supplier quotes, and for the Cabinet to validate those quotes.

The Contractor will be required to meet the goals established by the OCRSBD or to demonstrate that good faith efforts have been made. This includes having the Contractor submit a workforce planning document in which the Contractor identifies their plan to meet the EEO workforce goal for women and minorities, including OJTs.

4.3.14 CM/GC Project Estimating

One of the most important processes in the CM/GC Preconstruction Phase is developing interim pricing that leads toward successfully establishing an acceptable GMP. As the design progresses, the Contractor and the ICE prepare interim estimates at established pricing milestones. The number of pricing milestones varies based on several factors such as: the level of design at the time the Contractor is procured, the complexity of the project, and whether severable Pricing Packages will be issued for the project. In general, pricing milestones are performed at typical Cabinet design review milestones (30%, 60%, and Final Plans), but may be modified by the Project Team based on the individual Pricing Package or to best address the project's schedule needs. It is important to note that caution should be exercised when introducing additional pricing milestones or pricing resubmissions for a specific pricing milestone. This can promote gamesmanship intended to identify or dial-in on a maximum price acceptable to the Cabinet. Therefore, the decision to introduce additional pricing milestones must be made in consultation with the Alternative Delivery Program Manager and FHWA (if there is federal funding). The project may also have additional pricing milestones and Pricing Package GMPs to accommodate early construction Pricing Packages.

Pricing milestones allow the Cabinet to expose pricing disagreements early in the CM/GC process, which provides time for both the Cabinet and the Contractor to resolve these inconsistencies prior to the final

GMP commitment. Project risks and costs are reviewed through a series of design review meetings, risk management meetings, and cost estimate reconciliation meetings. The goal of this iterative and open book process is to continually review pricing, cost assumptions, and risks to create a GMP within an acceptable percentage of the ICE estimate and allow the Cabinet to proceed directly to awarding the Contract at the completion of the Preconstruction Phase. Section 5 describes the steps involved in developing pricing milestone estimates and negotiating the GMP, and the processes required by the Cabinet to execute a Pricing Package Amendment to the CM/GC Agreement.

4.3.15 Validating the Contractor's Costs During Preconstruction

During the Preconstruction Phase of the project, the PM is responsible for reviewing the Contractor's invoices and validating those costs for payment. Administration of the Contractor's preconstruction expenses should follow the practices and approaches used by the Cabinet to administer consultant contracts. On a CM/GC Contract, there may be a period when the contactor is simultaneously working on both preconstruction support and construction support at the same time (for example, when the Contractor has started construction activities through an early Pricing Package). The PM should take advantage of the open book Cost Model to verify that the Contractor is not double counting hours for overhead staff that are simultaneously working both project phases.

5 PRICE VALIDATION IN CM/GC CONTRACTING

The purpose of this Section is to outline the process that the Cabinet will use to validate the Contractor's cost estimate on CM/GC projects, which includes the process to be followed during the Preconstruction Phase of the project and at each formal pricing milestone to build the Cost Model and negotiate the Pricing Package GMP for Pricing Package Amendments.

One of the most critical steps in successfully validating the GMP on a CM/GC contract is to require the Contractor to submit their estimate for the cost of the work at logical milestones as design progresses. This allows the Cabinet to compare the Contractor's estimate for the work with the costs estimated by the Independent Cost Estimator (ICE). As discussed in Section 4.3.14, comparing the Contractor's estimate with the ICE's estimate at pricing milestones allows the Cabinet to review and resolve pricing disagreements early in the CM/GC process, rather than wait until the end when the GMP is submitted.

Estimates provided by the Contractor during pricing milestones are submitted to the Cabinet as non-binding estimates and represent the Contractor's estimate to perform the work as captured in the milestone. Although non-binding, the Contractor's estimates are considered a good-faith estimate of construction costs and assumes that prices for items of work may not vary significantly between pricing milestones, unless the change is substantiated by documentable changes in pricing assumptions or significant changes in the scope of work. The final binding GMP is submitted to the Cabinet when the Cabinet and the Contractor mutually agree the plans have been sufficiently developed to the point where the work can be priced with an acceptable level of certainty and risk in the GMP. This is usually somewhere between the 60% and 100% submittal.

5.1 Develop Estimating Cost Model (Task 1)

Successful price justification in the CM/GC process relies on thoroughly documenting the basis that is used by the estimators to price the work. Detailed documentation is to be developed and maintained to capture a history of how scope and risk elements evolve over the full Preconstruction Phase. To this end, the Contractor will be expected to be open and transparent about its approach to pricing the work and its intended means and methods. A successful CM/GC process also relies upon an "open book" cost estimating process. The Contractor will be required to develop an estimating Cost Model and will be responsible for documenting the basis for its estimating model at each pricing milestone. The Cabinet plans on fostering a cooperative GMP negotiation with intensified effort on risk identification and mitigation during the Preconstruction Phase. With the early investment of a Contractor, the Cabinet expects that the Contractor will be able to provide detailed and reasonable suggestions to minimize cost and schedule risk for both the Cabinet and the Contractor.

5.1.1 Develop Schedule and Approach to Estimating

The PM, the Designer, the Contractor, and the ICE will develop a planning schedule to facilitate the most efficient approach to providing a series of cost estimate submissions during the Preconstruction Phase of the project. This schedule will consider the design packages, the completeness of the design packages, and the estimating resources expected to prepare the estimate submission.

5.1.2 Estimate Coordination Meetings (Task 1A)

The PM, the Contractor, the Designer, and the ICE will hold regular estimate coordination meetings to plan relevant aspects of the cost estimate organization and break-down for a specific scope of work. The intent of these meetings is to have the ICE concur, when possible, with the Contractor's estimating model and provide common ground for later negotiations between the Cabinet and the Contractor. Topics to be discussed during these estimate coordination meetings focus on key assumptions used to price the work and may include labor and equipment rates, estimate work breakdown structure (WBS)[3], construction schedule, subcontractor and material plug prices, risk identification and mitigation, VE concepts and constructability suggestions, escalation, commodities, suppliers and fabricators, long-lead time items, limitations of operations, crew sizes, type of equipment proposed to perform the work, shifts per day, hours per shift, risk assumptions, assignment of risks, assumed weather delays, material costs, the planned method of measurement and basis of payment, and a description of the Contractor's planned "means and methods" for constructing the project.

5.1.3 Maintain Integrity of the Independent Cost Estimate and Confidentiality

Throughout the Preconstruction Phase of the project, including during the estimate coordination meetings, the Contractor may share certain information with the ICE to progressively facilitate estimate reconciliation, including the materials outlined in Section 5.1.2. When sharing estimating information, the Cabinet uses the expertise of the ICE to help review the Contractor's estimating assumptions. The ICE can factor such information into their estimating assumptions, but ultimately uses their own independent judgement to estimate the work. To maintain the integrity and independence of the independent cost estimate, the ICE will use discretion when discussing any cost related aspects of their estimate with the Contractor throughout the Preconstruction Phase of the project. The PM will confer with the Alternative Delivery Program Manager and the Cabinet's Estimating Branch regarding what information may be shared between estimating parties. To help preserve the ICE's independence and minimize influence, the Contractor and the ICE should not discuss their assumed production rates and crew compositions until reconciliation (see Section 5.7).

5.1.4 Develop Milestone Construction Schedule (Task 1B)

The Contractor will prepare/update a CPM construction schedule reflecting the sequencing and staging of the work for the Cabinet to review and concur ahead of the estimating efforts. The Cabinet and the Contractor will strive to reach agreement on a construction schedule during the Preconstruction Phase of the project. As construction activity durations, schedules, and constraints are integral to the

[3] Although the Contractor is responsible for developing the estimate WBS to match its production-based cost estimate, the Contractor's proposed WBS is reviewed by the Cabinet and the Designer during the estimate coordination process and at each pricing milestone. The Cabinet has ultimate approval authority for the final WBS used to price the work. Bid items in the WBS should conform with the Cabinet's standard bid items as much as possible, understanding that general conditions and indirect costs will be separated out into their own categories within the WBS rather than being spread to the bid items as they would in a traditional bid, at least for the early pricing milestone estimates.

estimating efforts, the current version of the construction schedule, as agreed upon by the Cabinet and the Contractor, will be shared with the ICE as a supporting document at each pricing milestone. The ICE will review this construction schedule and use it as the basis for estimates and the GMP, including the overall project duration. However, the ICE will use independent judgment when assuming individual activity durations, productivity rates, or crew compositions, and is not obligated to use the same assumptions used by the Contractor in its schedule. The ICE will maintain their independence regarding how individual work operations are estimated. Alternatively, to encourage independence early in the process, the Alternative Delivery Program Manager may elect to have the ICE develop their own construction schedule in parallel with the Contractor's schedule for the initial pricing milestone. In this case any differences should be discussed as part of the reconciliation process outlined in Section 5.7.

5.2 Prepare Design Milestone Review Package (Task 2)

The Designer will prepare the design milestone review package for each pricing milestone and provide it to the PM for distribution to the Contractor and the ICE. Each design milestone review package should include plans, proposed pay items, proposed method of measurement/payment definitions, and any specifications appropriate for the level of design. The Cabinet may elect to have the plans prepared by the Designer to reflect customized approaches based on requests from the Contractor to help prepare its estimate (such as the Contractor's approach to phasing, staging, or maintenance of traffic). As the plans progress between milestones, it may be necessary to redefine the method of measurement/payment definitions. Each design milestone review package will include a summary report, prepared by the Designer, that outlines significant changes to the plans between milestone submissions. Changes to specifications between milestone submissions will be identified by tracking changes within the document.

5.3 Design Review Workshop (Task 3)

The PM will schedule a design review workshop with the Designer, Contractor, the ICE, technical review staff from the Cabinet, and other external oversight reviewers. The design review workshop should take place following the issuance of the design milestone review package. Prior to the workshop, each party must be allowed sufficient time to review the plan package. The objectives of the design review workshop are to: (1) allow all parties to understand the work being estimated; (2) allow all parties to provide feedback on the constructability of the plans; (3) discuss assumptions on means and methods and construction staging or sequencing of work that affects how the project will be estimated and ultimately bid; (4) define and agree upon the scope of work in a bid item; and (5) allow all parties to identify any errors, omissions, ambiguities, or other items that need to be corrected in the plan package.

5.3.1 Incorporation of Comments from the Final Pricing Milestone Review

Following the review of the final milestone plans (or the final plans used as the basis of the Contractor's GMP if earlier than 100%), the Designer will address (and incorporate where appropriate) comments received during the final Design Review Workshop, repackage the plans and specification, and resubmit to the Cabinet. These plans will be used as the basis for the Contractor's GMP.

5.4 Risk Workshop (Task 4)

The PM will schedule a formal risk workshop that includes, at a minimum, the following parties: Designer, Contractor, ICE, and Cabinet Technical Experts who have insight into project risks. For federal projects, the PM will invite FHWA to the workshop. Other key stakeholders, third parties, subject matter experts, or representatives from the Alternative Delivery Support Consultant are added at the discretion of the PM. The risk workshop should be scheduled in conjunction with the design review workshop or soon thereafter. During this meeting, the Cabinet and the Contractor will agree on how risks and contingencies are quantified and assigned, and how risk is influencing the estimate. The ICE participates in this discussion to understand risk and contingency assignment. A project risk register will be maintained and updated as an output to the risk workshop at each pricing milestone. Adjustments to the plan package may be needed based on discussion at the risk workshop. During early risk workshops, a significant amount of time may be spent identifying risks and assigning time and cost impacts for each risk. During later workshops, the focus of the meetings will be to identify any new risks that have been encountered and update the Risk Register for risks that have been retired or where the time and cost impact have changed. The goal is to ensure all estimators have a clear and consistent understanding of how risks are proposed to be managed within the contract. At each pricing milestone, the Risk Register should be updated to document which party is responsible for managing and pricing the risk. Risks can be priced and managed in several ways:

- Risks that are assigned to the Cabinet and covered as part of the owner's contingency budget.
- Risks that are assigned to the Contractor and included in the Contractor's GMP.
- Risks that are shared or paid for as provisional bid items or allowances within the GMP.

5.4.1 Continuous Risk Management in CM/GC

Although the project team conducts formal risk workshops at each pricing milestone, risk management should be continuously applied throughout the life of the project. Proactive risk management is central to successful CM/GC contracting. The CM/GC environment provides the unique opportunity for the Cabinet to leverage the Contractor's experience and knowledge of construction risks during the Preconstruction Phase of the project to identify potential risks, develop mitigation strategies, and agree upon an approach to manage and price the risk that results in the best possible outcome for the project. The PM is responsible for leading the project team in this effort. Discussion on risk management, mitigation, and pricing strategies should be built into every meeting. Although the Risk Register is formally updated during pricing milestones, the PM should verify that the project team refers to it regularly, encourage the team to follow up on risk mitigation strategies, and confirm that the Designer is incorporating feedback from the Contractor in the project plans and specifications.

5.5 Prepare Milestone Estimate (Task 5)

The following subtasks are performed with each pricing milestone estimate submission.

5.5.1 Quantity Reconciliation Workshop (Task 5A)

A quantity reconciliation workshop should take place after the design and risk workshops but prior to submitting estimates. The goal of the quantity reconciliation workshop is to compare quantity take-offs

between the estimating parties, and when possible, reconcile differences and agree upon common quantities to be used as the basis for the estimate. The Contractor and the ICE each independently compile quantities into a spreadsheet that is shared with all estimating parties. The Cabinet, the Contractor, the ICE, and the Designer attend the workshop. Agreed-upon quantities are documented in the spreadsheet and distributed to all estimating parties following the meeting. Multiple meetings may be required to accomplish quantity reconciliation depending on the size and complexity of the design package.

5.5.2 Estimate Workshop (Task 5B)

The PM will schedule an estimate workshop at each milestone. This workshop is scheduled after the design review, risk, and quantity reconciliation workshops but prior to estimate submission. The purpose of this meeting is to allow the estimating parties to discuss final assumptions related to the means, methods, risks, and key assumptions that will be used to price the work.

5.5.3 Subcontracted Vendor Pricing

Pricing subcontracted work is a critical part of verifying a fair and reasonable price in the CM/GC process because in many cases, subcontracted work (which includes both subcontractors and vendors) can make up 50% (or more) of the GMP. This process includes verifying that the Contractor has provided adequate subcontractor and vendor outreach to obtain competitive quotes for all subcontracted work. During early stages of the estimating process, it is necessary to use "plug" prices[4] or a combination of plug prices and quotes to estimate the cost for subcontracted work. Ultimately, all plug pricing will be replaced with actual quotes. This replacement is done either at the final pricing milestone or after award during the buyout[5] process, depending on the approach used. When using plug pricing for subcontracted work, the ICE will validate the Contractor's suggested plug pricing and may ask the Contractor for additional justification if they feel the prices do not reflect fair market value for the work.

To ensure competitive pricing, the Contractor is expected to make a good faith effort to solicit a minimum of three quotes for all subcontracted work and for all material suppliers. If obtaining three quotes for any subcontracted work is not feasible, the Contractor will be required to use a transparent and collaborative process that explains to the Cabinet why three quotes are not obtainable. The Cabinet may also request that the Contractor look at self-performing the work, if possible, to help ensure competitive pricing. The Contractor may use a system of its choosing to receive and collect quotes from subcontractors and vendors. However, all quotes received by the Contractor will be shared with and made available to the Cabinet and the ICE. When preparing subcontractor bid packages, the Contractor

[4] Plug prices are estimated costs provided by the Contractor based on past relevant experience or preliminary estimates based on informal, non-binding discussions with subcontractors and vendors.

[5] "Buyout" occurs when the Contractor issues purchase orders and signs a subcontract with subs for a particular trade package (e.g., paving, signing, rebar purchase). Buyout can occur shortly after the execution of the Pricing Package Amendment but is more likely to occur during the construction phase closer to the timeframe when the sub or vendor is scheduled to perform the work.

will discuss with the Cabinet where it may be beneficial to engage the Cabinet in reviewing the scope and division of work outlined in the subcontractor bid packages. In this way, the Cabinet has the opportunity to provide input and concur with scope that is defined in the bid packages, and the Contractor and the Cabinet can work together to verify that the subcontracted work reflects a correct understanding of the work.

5.5.3.1 Subcontractor Selection

In general, the Contractor is expected to select the low bidder to perform the work. However, there are justifiable exceptions. The Contractor will discuss all exceptions with the Cabinet. The following are some common examples of situations where the Contractor may decide to select a subcontractor or vendor that is not the low bidder:

- Accounting for or adjusting a quote for exclusions. It is common for subcontractors to include various exclusions in their quotes. The prime Contractor must then account for the cost to cure these exclusions in its price, which can change the result of the bid analysis. For example, one subcontractor may indicate the prime Contractor is responsible for hauling off spoils where another subcontractor may include that cost in its quote.
- Electing to use a non-low bidder to mitigate the threat of performance risk based on history of past performance with that particular subcontractor. The Contractor should provide documentation and arguments to support any such claims.
- Selecting a subcontractor to meet the project's DBE commitment.

The ICE should participate in discussions about final subcontractor selection, but as noted earlier, is not required to use the same quotes as the Contractor based on independent judgement.

5.5.3.2 Subcontracting Plan

The Contractor is responsible for preparing a subcontracting plan and managing its Subcontractors and Vendors to complete the work in accordance with the Contract Documents, within budget and on-time. The Contractor will provide a subcontracting plan at each pricing milestone, which is progressively elaborated on throughout the project. The Cabinet reviews and approves the Contractor's subcontracting plan. At a minimum, the Contractor will provide the following as part of the subcontracting plan at each milestone:

- A description of the subcontracting process and selection criteria, including how the subcontractor and vendor selection process is fair and transparent to all potential bidders and provides an environment that fosters open competition.
- A description of the work that will be self-performed and what items of work will be subcontracted.
- A solicitation log demonstrating satisfactory solicitation coverage, including a summary of which Subcontractors/Vendors were contacted, which Subcontractors/Vendors did/did not submit a price, and which Subcontractor/Vendor was selected.
- Bonding approach for Subcontractors.

- Summary of the risks, exclusions, support services, and other adjustments (e.g., bond) required for the selected quote.
- Outline of how the quotes are distributed into the various bid items.
- Best-value documentation where the low bidder was not selected.
- Summary of outreach efforts to engage DBE providers in the solicitation process, what items of work are currently planned to be subcontracted to a DBE, and the overall plan to achieve the DBE goal.
- Tracking progression of Subcontractor/Vendor quotes between pricing milestones and explanation about upward or downward movement between milestone submissions (such as changes in scope or changing to a DBE Subcontractor/Vendor) when quotes are used as the basis for estimating the GMP.

  During project execution when the Contractor is actively soliciting quotes, the Cabinet should review the Contractor's subcontracting plan to verify that the Contractor is complying with its subcontracting plan.

5.5.3.3 Minority/DBE Goals:

As previously discussed, the PM and Alternative Delivery Program Manager should work with the OCRSBD to establish the DBE goal that applies to the Construction Phase of the project so that all estimating parties understand the expectation and have accounted for the goal in their estimate. If the Cabinet progresses the work using Pricing Packages, a DBE goal or goals may be established for each Pricing Package based on the individual characteristics of the work included with that package. The final Pricing Package Amendment should include the DBE goal that is used as the basis for the GMP. The Projects DBE goal(s) should be identified by the Cabinet well before final plans and should be a topic of discussion with the Contractor throughout the price development process and during each pricing milestone to confirm the Contractor's ability and commitment to meet the goal.

5.5.3.4 Approaches to Estimating Subcontractor Contingency

When the GMP is negotiated based on actual quotes, there is a lag between the time when the quote (used as the basis for negotiating the GMP) is received and when the work is performed. Although some subcontractors and vendors may include the risk of escalation in their quotes, most put exclusions on their quotes, such as putting limits on escalation or only honoring their quoted prices for a limited period of time. As a result, the Contractor must account for this risk in its GMP. Accounting for this risk could include adding escalation to subcontractor and vendor prices, adding contingency in the GMP, or a combination of both. The ICE and the Contractor should openly discuss this risk, including discussing an approach to carrying escalation on subcontractor and vendor prices. However, ultimately, the Contractor and the ICE each use their own independent assumptions in their respective estimates. **This is the standard approach for estimating subcontractor and vendor costs on KYTC CM/GC projects.**

Alternatively, to avoid having the Contractor add risk contingency to its GMP to account for speculation on subcontractor and vendor price escalation, the Cabinet may elect to include contract terms that allow the GMP to be negotiated using plug prices for subcontractor trade packages (or a combination of plugs supplemented by some quotes to provide a basis for the plugs). The Contractor is then allowed to

draw funds from the Bid Contingency if quotes exceed the estimated plug prices during the buyout process. Procedures for this approach are covered in more detail in the next subsection.

The PM consults with the Alternative Delivery Program Manager to evaluate which approach to use based on direction from KYTC management.

5.5.3.5 Subcontractor Cost Estimating Using a Buyout Approach and with Bid Contingency

For CM/GC projects (as directed by the Alternative Delivery Program Manager), where the CM/GC Agreement caps the cost of construction at a maximum (not-to-exceed) value and payment is based on actual costs during construction, subcontractor, and vendor costs in the GMP are based on plug prices (or estimated value). The Contractor may informally solicit some quotes to help establish a basis for the subcontractor and vendor plug prices used in the GMP, but in general, trade packages are based on estimates established by the Contractor. Subcontractor and vendor plug prices should be validated by ICE. Later during the "buyout process6", the Contractor solicits quotes from subcontractors and vendors, and the quotes are compared to the plugs used to estimate the GMP. The CM/GC Agreement should include provisions for a Bid Contingency Pool from which the Contractor can draw funds when actual buyout quotes exceed the estimated plug. Conversely, when quotes are less than the plugs used to estimate the GMP, the savings accrue back into the Bid Contingency Pool. At the end of the project, any overall savings in the Bid Contingency Pool accrue to the Cabinet). This approach puts additional administrative responsibilities on the Cabinet because it requires that the Cabinet use buyout contingency accounting during the Construction Phase of the project to track quotes received during buyout and compare them with plug values to estimate the GMP, and periodically reconcile differences. When a Bid Contingency pool is used, the same recommendations and guidelines presented earlier in this section regarding expectations for solicitation coverage and selection process should be followed at the time when the Contractor solicits quotes after award during the buyout process. The CM/GC Agreement should contain provisions related to buyout contingency accounting.

5.5.4 Subcontractor and Vendor Selection Meeting (Task 5C)

Prior to submitting estimates, the Contractor will facilitate a subcontractor and vendor selection meeting with the Cabinet and the ICE. The Contractor will use this meeting to discuss the quotes, explain how the quotes are distributed to the bid items, clarify any support services required for each Subcontractor, and review any relevant pricing exclusions from the quotes. During this meeting, the Contractor will review solicitation efforts and demonstrate to the Cabinet that it has solicited the minimum number of quotes from Subcontractors/vendors, where feasible. When pricing subcontracted work, the ICE is encouraged to coordinate with the Contractor with the goal of agreeing on common subcontracting and vendor assumptions. However, the ICE is not required to use the same quotes as the

[6] Buyout occurs during the construction phase after the Pricing Package Amendment has been executed and typically closer to the timeframe when the subcontractor or vendor is to perform their work.

Contractor and may elect to use their own approach to estimating subcontracted pricing, which may include the following options:

1. **Use a Different Quote:** The ICE may use a different quote from what is used by the Contractor. If the ICE uses a quote different from the Contractor's, they should be prepared to discuss and justify their choice openly with the Contractor during reconciliation. Although the ICE will be expected to use the lowest quote for the work, the estimating teams will have open discussion during the subcontractor/vendor selection meeting about best value selection, weighing factors such as risks (including subcontractor performance or schedule risk), exclusions, DBE participation, and support services required for individual quotes.

2. **Estimate the Work as Self-Performed:** The ICE may price the subcontracted work as self-performed. In general, the ICE will not generate independent cost estimates for the work that is to be competitively bid within the subcontracted scope. However, they will not be precluded from pricing the work as self-performed if they believe that a lower price for the work can be achieved by self-performing the work.

3. **Use Independent Judgement**: The ICE may use subcontractor and vendor pricing based on their experience and independent judgement. In this case, they should be prepared to discuss and justify their price with the Contractor during reconciliation and must demonstrate that their price is based on market conditions for the project area, rather than basing their pricing on historic values or average unit bid prices.

4. **Make Recommendations on Alternative Subcontractors/Vendors for Consideration:** The ICE may make recommendations to the Contractor on the use of alternate subcontractors and vendors not considered by the Contractor. This option should be used on a limited basis. If the ICE has concerns that the Contractor's solicitation outreach effort was not satisfactory, they will discuss this openly with the Contractor and the Cabinet prior to estimate submission and have open discussion with the Contractor where they suggest alternative choices for subcontractors/vendors that the Contractor had not considered. The Contractor will be under no obligation to use any recommendations provided by the ICE, and ultimately, the Contractor is responsible for selecting the subcontractors they use to perform the subcontracted work. During the subcontractor and vendor selection meeting, the Contractor will provide a list of subcontractors/ vendors contacted during the meeting to document the solicitation outreach efforts for the ICE and help them understand any subcontractors/vendors that were contacted but unresponsive. The ICE will not contact subcontractors and vendors directly to try to solicit pricing on their own.

5.5.5 Submit Milestone Baseline Schedule (Task 5D)

Prior to estimating, the Contractor shares a copy of the proposed construction schedule with the ICE and the Cabinet. All estimating parties will use this schedule as the basis for the milestone estimate/GMP. More detail on the process to be followed for reviewing and concurring with the Contractor's proposed

construction schedule is outlined in Section 5.1.3. It may be necessary for the Contractor to update its schedule after estimate submission to sync up with the durations and assumptions used in its estimate.

5.5.6 Finalize and Submit Estimates (Task 5E)

Following the milestone estimate workshop and subcontractor/vendor selection meeting, the following estimates are finalized:

- **Contractor Estimate:** For pricing milestone estimates, the Contractor prepares its "good faith" estimate at each pricing milestone. For the final pricing milestone, the Contractor prepares the GMP, which represents its contractual price, or bid, to construct the work. After submission, the Contractor's detailed estimate or GMP is to be shared with the Cabinet.
- **Independent Cost Estimate:** The ICE prepares its estimate for the work at each pricing milestone. The ICE is transmitted exclusively to the Cabinet and is held "in the blind" to all other parties — until only the Cabinet releases it. The ICE will be used in comparison to the Contractor's estimate as part of the finalization of the GMP process.

The ICE and the Contractor will each submit their estimates for the work directly to the PM. When the Contractor submits its estimate, it also submits its open book Cost Model that documents the basis for the estimate and the construction schedule (used as the basis for the estimate).

The Designer does not prepare an estimate for CM/GC projects at pricing milestones. The Cabinet may elect to use the Designer to prepare an initial budgetary estimate used in the process for evaluating Pricing Packages (see Section 4.3.12.2) as required under § 23 CFR 635 (506) Subpart D, paragraph 2.

5.5.6.1 Guidelines for Accepting Price Before Final Design is Complete:

If the Cabinet and the Contractor agree that the project plans and specifications are sufficiently defined to construct the project before final design is complete, and both parties are comfortable proceeding with a Pricing Package Amendment given the remaining risks and uncertainties, the Cabinet may elect to proceed with negotiating the GMP based on plans and specifications that are not 100% complete.

5.6 Preparation of Variance Report (Task 6)

The Cabinet's Estimating Branch will prepare a summary variance report comparing the Contractor's estimate to the ICE. To preserve the integrity and independence of the ICE's estimate, the variance report shared with the Contractor will not reveal the ICE's pricing (otherwise known as a "blinded variance report"), but will note whether the Contractor's estimate is "within acceptable range" or "outside acceptable range" of the ICE. The PM, with assistance from the ICE, will direct and oversee the estimate reconciliation process. The blinded variance report will be shared with the Contractor in advance of reconciliation meetings.

5.7 Review Milestone Estimate and Reconcile (Task 7A and 7B)

After the variance report has been finalized, the Cabinet reviews the Contractor's estimate or GMP, the variance report, and the Contractor's open book Cost Model. The Cabinet involves the ICE to assist with this process or other specialized experts based on the scope of work being estimated. Early review efforts may include discussions with the Contractor regarding focus areas of concern by the Cabinet.

The PM will schedule and facilitate an estimate reconciliation meeting with the Contractor and the ICE. During the reconciliation meetings, the ICE and the Contractor will attempt to reconcile pricing differences. The reconciliation process gives the Contractor, the Cabinet, and the ICE opportunities to understand each other's perspectives about pricing assumptions, risk assignment, and construction means and methods. The goal is to reconcile pricing differences so that the GMP is determined to be fair and reasonable, and the Cabinet can execute a Pricing Package Amendment. It is the responsibility of the PM to help ensure the ICE remains independent during reconciliation meetings.

The Cabinet is encouraged to involve representation from the Designer in the reconciliation meetings. Bringing the Designer into the discussions can help provide input and clarification to assist the PM in resolving differences that relate to the interpretation of the plans and specifications or the scope of work. It also allows the Designer to hear discussions on what may need to be changed in the plans and specifications to clarify scope or address risk assignment (such as moving work from the lump sum to a provisional bid item).

Open Book Process: As part of the CM/GC open book estimating environment during the reconciliation process, the Cabinet asks the Contractor to share or review with them certain materials containing information that clarifies how the proposed pricing was derived to help reconcile differences between the ICE's and the Contractor's estimates. All materials of this nature should be held in confidence by the Cabinet or other parties that the Cabinet allows to participate in the discussion. Price reconciliation should be limited to key Cabinet project management staff and estimating staff that are directly reconciling differences between the ICE's and the Contractor's estimate. Key FHWA staff may attend for projects with federal funding. All parties participating or reviewing estimate information should sign confidentiality agreements.

The Cabinet and the Contractor may not be able to resolve all differences in pricing during reconciliation meetings. The PM and the Contractor will decide to (a) acknowledge differences, move forward with design, and attempt to continue reconciling differences during later pricing milestones, or (b) agree that reconciliation is not possible and terminate the contract to allow the Cabinet to procure the construction of the project through some other method. If there are Pricing Package Amendments that have been previously executed, the Contractor is allowed to continue that work, but the Cabinet may procure the construction of future Pricing Packages through some other method.

5.8 Adjust Estimating Model, Schedule & Pricing (Task 8)

The Contractor may agree upon changes to their bidding assumptions that affect pricing based on reconciliation discussions. The Contractor adjusts its cost model, narrative, and schedule to reflect any changes and resubmit them to the Cabinet. Any pricing changes will be carried forth to the next estimating pricing milestone or GMP. During the reconciliation process, the ICE may adjust their bidding assumptions and estimate.

5.9 Document Estimate, Estimating Basis, and Schedule (Task 9)

The Cabinet retains a copy of the Contractor's and the ICE's estimate, retains a copy of the variance report, estimating assumptions (including the narrative), and the CPM schedule for each pricing

milestone. A brief report for each pricing milestone should be prepared to document the results of the pricing milestone.

5.10 Acceptance of GMP (Task 10)

5.10.1 Threshold for Accepting a GMP

The Cabinet's expectation is to get a fair market price for the work. The estimate prepared by the ICE establishes fair market price. The Contractor's GMP is considered acceptable if it does not exceed the ICE by more than 5%. Acceptable GMPs are presented to the Awards Committee for further consideration as outlined later in this section. If the Contractor's price exceeds the ICE by more than 5% but less or equal to 10%, the PM will consult with The Alternative Delivery Program Manager regarding how to proceed. If the GMP exceeds the ICE's estimate by more than 10%, the PM and Alternative Delivery Program Manager enter into the process of reconciliation or proceed with rejecting the GMP.

5.10.2 GMP Within Acceptable Range (Task 10A)

If the Contractor's GMP is within the allowable range for acceptance (as defined in 5.10.1) and is within the Cabinet's budget, the ICE prepares a memo to the PM describing their analysis of the Contractor's GMP, and the Cabinet audits the following aspects of the Contractor's GMP:

- Review the GMP for unbalancing or other irregularities.
- Confirm that the CM/GC open book cost model backup is complete and that it matches the GMP.
- Review the Contractor's baseline construction schedule and confirm it matches the assumptions used to develop the GMP.

Any deficiencies to the requirements above must be remediated before presenting the GMP to the Awards Committee for their approval.

5.10.3 GMP Outside Acceptable Range (Task 10B)

If the GMP exceeds the ICE by more than the allowable range, or the GMP contains irregularities, the ICE will prepare a memo describing their findings for the Cabinet. The Cabinet will review the details and proceed with reconciliation efforts in an attempt to negotiate a fair and reasonable price for the work. If the GMP is not acceptable due to irregularities, the PM will focus the reconciliation meeting on bringing the irregularities to the Contractor's attention so that it may resubmit its GMP to address the irregularities. If reconciliation is not possible, the Cabinet will present the results to the Awards Committee and proceed as directed. If the Awards Committee rejects the Contractor's GMP, the PM proceeds with the process outlined in Section 5.12 to package the project for procurement using other means.

5.11 Approval to Authorize/Reject a Pricing Package Amendment (Task 11)

Formal acceptance or rejection of the Contractor's GMP and authorization to execute a Pricing Package Amendment requires approval from the Awards Committee. When a final recommendation on the Contractor's GMP is at the project level (as outlined in Section 5.10.2) is prepared and the required backup materials that document the basis for the GMP have been provided to the Cabinet to their

satisfaction, the Alternative Delivery Program Manager will coordinate with the Awards Committee to schedule a meeting to obtain their concurrence to accept or reject the GMP and, if accepted, execute a Pricing Package Amendment.

The PM prepares the following documentation package for the meeting with the Awards Committee:

A) Memo from the PM recommending acceptance/rejection of the Contractor's GMP
B) GMP analysis memos from the ICE
C) GMP abstract
D) A copy of the Contractor's open book estimate backup
E) Baseline construction schedule

The Alternative Delivery Program Manager and the PM attend the meeting with the Awards Committee. During this meeting, the Alternative Delivery Program Manager will:

A) Present the results of the pricing validation process, including demonstrating that the GMP has been validated by the ICE and is within the required thresholds for acceptance.
B) Demonstrate that the Contractor's GMP meets the requirements for executing a Pricing Package Amendment as outlined in the CM/GC Agreement.
C) If recommending a Pricing Package Amendment for an early Pricing Package:
    a. Demonstrate that progressing the work covered by the early Pricing Package is in the best interest of the project and the Cabinet.
    b. Demonstrate that the work constructed under early Pricing Package does not affect/impact adjacent areas that do not have required clearances (e.g., environmental permits, utility clearances, etc.).
    c. Demonstrate that the early Pricing Package saves time, reduces inconvenience to the traveling public, and/or reduces construction costs.
    d. Demonstrate that the work defined in the early Pricing Package is stand-alone and severable.

The Awards Committee may ask questions as needed to make a determination whether or not to accept the Contractor's GMP. If the Awards Committee concurs with the recommendation to accept the Contractor's GMP, the Cabinet moves forward with executing a Pricing Package Amendment. If the Awards Committee decides that the GMP is not acceptable, the PM will notify the Contractor that the GMP is not acceptable, and the Project Team proceeds with the reconciliation efforts in order to attempt to negotiate a fair and reasonable price for the work.

5.11.1 FHWA Concurrence

For federally funded projects, concurrence is required from FHWA to authorize a Pricing Package Amendment. The Director of Construction Procurement will compose the FHWA Concurrence Request Letter and compile the supporting documents as outlined below:

A) Concurrence Request Letter
B) GMP abstract (final copy of variance report summarizing the GMP)

C) OCRDBD Clearance
D) Non-collusion form

5.12 Rejection of the GMP (Task 12)

If reconciliation negotiations do not result in an acceptable price for the work and the Awards Committee rejects the Contractor's GMP, the Cabinet will procure the Project/Pricing Package through any other lawful method. If there are early Pricing Packages, the Contractor will be allowed to continue work on any Contracts previously awarded. The Director of Construction Procurement will notify the Contractor in writing regarding its decision to terminate and reprocure the work. The Contractor's right to appeal the decision, if any, is outlined in the RFP.

5.13 FHWA Construction Authorization (Task 13)

If the Pricing Package has federal funding, the Division of Program Management will submit a Request for Construction Authorization to FHWA prior to executing the Pricing Package Amendment. FHWA must authorize federal funds for construction each time the Contractor's contract amount is increased to incorporate a Pricing Package Amendment.

5.14 Notification of Acceptance/Execute PPA (Task 14)

When concurrence to accept the Contractor's GMP has been obtained from the State Highway Engineer, the Awards Committee, and FHWA (for federally funded Pricing Packages), the Cabinet and the Contractor execute a Pricing Package Amendment (PPA) authorizing an increase in the Contractor's contract value to incorporate the construction work defined in the Pricing Package plans and specifications.

The Division of Construction Procurement sends a copy of the Pricing Package Amendment documents to the CM/GC contactor who signs and returns the documents. The Cabinet reviews the contract package for form and execution and holds the package until all approval clearances have been met and all required documentation have been submitted as defined in the CM/GC agreement. When all approval clearances have been met and documentation submitted, the Division of Construction Procurement signs the contract and bond, and issues Notice to Proceed. The Division of Construction Procurement issues the approval letter to the Contractor and copies the PM and the Alternative Delivery Program Manager.

5.15 Notice to Proceed (Task 15)

The CM/GC Agreement outlines the documents and plans that must be submitted to the Cabinet prior to receiving formal notice to proceed with construction of the work authorized by the Pricing Package Amendment. Once these plans and documents have been received and in accordance with the requirement of the CM/GC Agreement, the Division of Construction Procurement issues notice to proceed to authorize the Contractor to proceed with construction.

5.16 Expected Time Frame to Reach Agreement on Price

The process to reach agreement on the price for construction, from submitting the GMP to determining the acceptability of the GMP, typically takes between two to four weeks, depending on the extent of the differences between the Contractor's GMP and the ICE. The pricing milestone submittals during the Preconstruction Phase are implemented so that the process to reach price agreement is streamlined. However, sufficient time should be allowed for all parties to become familiar with any changes to the

Plan Package since the last pricing milestone. For the GMP submission, the PM and Alternative Delivery Program Manager should discuss the amount of time anticipated to reach price agreement and inform the parties involved in the GMP validation and approval process so they can commit to the timeframes and meetings required. Whenever possible, it is best to be conservative regarding the timeframes needed. Too little time may ultimately undermine the Cabinet's ability to ensure a fair/reasonable price is reached.

5.17 Expected Time Frame to Execute a Pricing Package Amendment

The process and timeframe to award and approve a CM/GC contract is similar to that for a DBB project – typically ranging from six to eight weeks from the time the GMP is submitted to the Cabinet until the Pricing Package Amendment is executed. This timeframe includes the time required for the PM and the Alternative Delivery Program Manager obtain concurrence from the Award's Committee as well as the time required to coordinate with FHWA (for federally funded projects) to obtain the necessary pricing analysis concurrence and construction funding authorizations as outlined in Sections 5.11.1 and 5.13 respectively.

Figure 5-1: Pricing Milestone Process

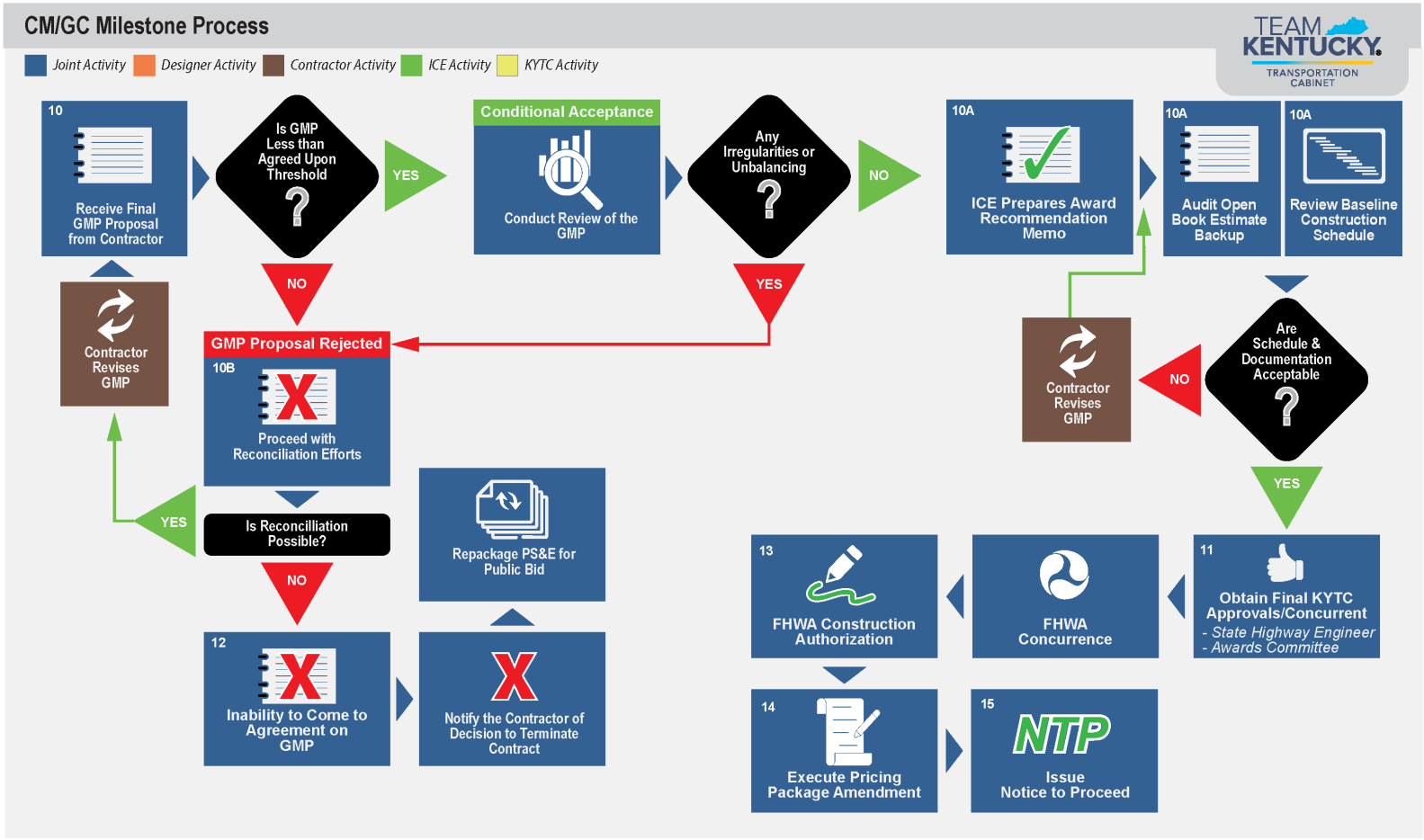

Figure 5-2: GMP Validation and Pricing Package Approval Process

6 CM/GC CONSTRUCTION PHASE

The administration of a CM/GC project during the Construction Phase differs significantly from that of a DBB project in several key areas, such as: the contract format, measurement and payment terms, and difference related to risk management and applying the risk pools that were established during the Preconstruction Phase of the Project. This Section provides an overview of the processes used to administer a CM/GC project during the Construction Phase of the Project, particularly those that are unique to CM/GC delivery. A more complete description of the requirements and processes to be followed on CM/GC projects is outlined in the CM/GC Agreement, the Technical Provisions, and the Construction and Pricing Package Amendments.

During the construction phase of the project, the goal of the Cabinet and the Contractor is to construct the project in accordance with the CM/GC Agreement and the Contract Documents while controlling the risks identified in the Preconstruction Phase and documented on the Risk Register.

6.1 Construction Phase and Pricing Package Amendments

The CM/GC agreement is divided into two project phases: the Preconstruction Phase and the Construction Phase. The Preconstruction Phase and the Construction Phase may overlap if the Cabinet and the Contractor agree to perform construction using multiple Pricing Packages as outlined in Section 4. In other words, the Cabinet may allow the Contractor to begin construction on an early Pricing Package while still participating in a preconstruction role for future Pricing Packages as the Designer completes design for the remaining work.

The Contractor is not authorized to perform any construction services until:

(1) The Cabinet has validated a GMP for the work (or a portion of the work if the Cabinet and the Contractor have agreed to construct the project using multiple Work Packages)
(2) The Cabinet has executed a Construction Phase Amendment,
(3) The Cabinet has executed a Pricing Package Amendment, and
(4) The Contractor has submitted and received approval of plans (such as the Safety Management Plan, the Subcontracting Plan, or the Construction Phase Quality Management Plan) as defined in the CM/GC Agreement.

The CM/GC Agreement outlines the requirements, documentation, and submittals that the Cabinet must receive and approve as condition precedent to executing the Construction Phase Amendment. The execution of a Construction Phase Amendment is followed by one or more Pricing Package Amendments which document the scope of work and price associated with a given Work Package. Pricing Package Amendments authorize the Contractor to begin the work defined for a given Work Package. The Cabinet must receive and approve further documentation and submittals as condition precedent to executing a Pricing Package

Amendment (such as a final approved baseline schedule for the Work Package, and approved schedule values to define payment terms, and the receipt of required bonds and insurance policies as defined in the CM/GC Agreement for a Work Package). Once the Cabinet executes a Construction Phase Amendment and a Pricing Package Amendment, the Contractor begins construction subject to the Cabinet's approval of the respective Released for Construction (RFC) documents and other required plans/submittals.

The Cabinet executes the Construction Phase Amendment only once (at the beginning of construction), and the terms apply to all Pricing Packages Amendments. However, it may be necessary to amend the Construction Phase Amendment through a Change Order based on the content of a Pricing Package Amendment.

6.2 Contractor's Role during Construction

Once construction begins, the role of the Contractor changes to focus on constructing the work for the Project (or the work authorized for a given Pricing Package if the work is progressed through multiple Pricing Packages). In this role, the Contactor takes on similar responsibilities to what a Contractor would perform on a DBB project. The Contractor is responsible for ensuring all environmental, safety, and permit commitments, which are specified in the Pricing Package Plans, Specifications, and Contract Documents, are implemented during construction. The Contractor also manages its risk by implementing the procedures defined in the Risk Register.

6.3 Design Support during Construction

The PM may retain the Designer during the Construction Phase to address contractor questions or changed field conditions, and to provide consultation to the PM. Continuing the spirit of partnership from the Preconstruction Phase, the Designer is expected to respond in a timely and cooperative manner to inquiries from the Cabinet and the Contractor. To facilitate communication, it is recommended that the Designer stay involved in construction progress meetings and be made aware of the construction schedule.

6.4 Project Management Continuity into the Construction Phase

Maintaining project management continuity throughout the life of a CM/GC project is important for CM/GC contracting. This continuity helps the Cabinet's project management understand critical details about the basis for the Contractor's GMP, including GMP negotiations, details of the Risk Register, Risk Pools, and the construction methods discussed during design development. Generally, the PM that was involved during the Preconstruction Phase is expected to have a significant role during the Construction Phase. However, in some cases the PM that was involved during the during the Preconstruction Phase may not continue as the person with responsible charge over the Project during the Construction Phase. In these cases, the Cabinet should stive to involve the individual that will oversee construction during the Preconstruction Phase to maintain continuity. As a minimum, that person should be involved during the GMP negotiations and risk workshops.

6.5 Quality Assurance/Quality Control Roles

QA/QC for CM/GC projects is typically performed as it would be for a DBB project. The Cabinet or a consultant procured by the Cabinet performs Construction Engineering, Testing, and Inspection. The Cabinet will require the Contractor to develop a Quality Management Plan for construction prior to beginning construction, as outlined in the CM/GC Agreement.

6.6 Change Orders

One of the major advantages of CM/GC projects is that the Contractor is involved during the design development, which can lead to fewer change orders during construction. Because the Contractor has had the opportunity to review the plan and verify quantities, it is expected that the Contractor will be less likely to consider a claim for additional compensation for issues related to the design. Additionally, the Risk Pools make provisions for many of the situations that would otherwise require major change orders in DBB projects. However, projects may still experience changed conditions, fluctuations in market conditions, and unforeseen circumstances that will require a change order. The change order processes remain similar to the process used on DBB projects. However, for CM/GC projects, the open book Cost Model used to develop the GMP can be a useful reference to understand what the Contractor assumed during estimating and better justify fair pricing for the change order.

6.7 Disputes and Resolutions

As with change orders, disputes and claims should be minimized with the CM/GC project delivery due to the collaboration that is instrumental to CM/GC. Should disputes and claims arise, the Cabinet handles resolution as defined in the CM/GC agreement and technical provisions. The PM should refer back to the partnering session and conflict escalation ladder defined during the Preconstruction Phase to facilitate discussions and confirm that the appropriate senior management is engaged in the dispute resolution.

6.8 Monitoring Civil Rights Requirements and Labor Compliance

The Contractor must adhere to Civil Rights requirements and FHWA labor compliance, just as with DBB projects. The Cabinet monitors the subcontractor plan (developed by the Contractors during the Preconstruction Phase) during construction and makes adjustments as needed to ensure compliance. During the Construction Phase, the OCRSBD monitors this Contractor's compliance with any DBE goals established for the entire project during the Preconstruction Phase and defined for each the Pricing Package Amendment.

6.9 Measurement and Payment on CM/GC Projects

Measurement and payment terms are defined in the CM/GC Agreement. Measurement and payment for CM/GC projects is based on a schedule of values approach (similar to Design-Build contracting) derived from the Contractor's cost loaded schedule. The Cabinet reviews the Contractor's cost loaded schedule and validates the proposed Baseline Pricing Package Schedule of Values as outlined in the contract provisions. A schedule of values approach to measurement

and payment has potential benefits to the Cabinet because it reduces the Cabinet's effort needed to track and measure quantities in the field.

6.10 CM/GC Payment Provisions - General Conditions and Project Overhead

As part of the open book estimating approach and to better facilitate reconciliation, the GMP should separate the time-related costs (including general conditions and project overhead commonly referred to as "indirect costs") from the direct costs of the work. Upon award, the Cabinet pays for the indirect costs separately based on a schedule of values (similar to how project overhead payment in DB contracting). The Cabinet and the Contractor should agree upfront on how the Cabinet will measure and pay time-related costs during construction. The Cabinet should base the method of payment for the time-related costs on a defensible approach that reflects how these costs will be incurred during construction. For example, items such as project overhead, project office, field trailers, portable toilets are often spread evenly throughout the life of the project and paid out uniformly with each estimate. Alternatively, these costs could be paid out proportional to the percentage of direct costs paid with each estimate.

6.11 Provisional Sums

As discussed in Section 4, CM/GC Projects often use Provisional Sums as a tool for managing project risks with a high amount of uncertainty, as well as a high likelihood of occurring yet still have the potential for the Contractor to control. The Risk Register defines the events eligible for relief through the use of a Provisional Sum, the extent of the relief (including whether the Provisional Sum is capped or uncapped), and the method of compensation. The Designer may need to prepare specifications to further clarify the use and compensation terms. Provisional sums typically fall into two categories, unit cost provisional bid items and allowances.

6.11.1 Provisional Sums (Unit Cost Bid Items)

The use of unit cost provisional bid items within the GMP is beneficial when the bid item is needed but the quantity is not well defined or may vary considerably. These type of Provisional Sums can also be helpful to cover items of work that may or may not be required, where the Contractor can develop a consistent cost per unit, and the Cabinet and the Contractor wish to agree on the price when they negotiate the GMP rather than during construction. Examples of unit cost items within a GMP include flagging or sweeping, which could be paid by the hour. The use of unit cost provisional items has two key benefits to the Cabinet. First, it eliminates the possibility of paying for risk in the GMP based on a conservative quantity which later underruns that estimated quantity during construction. The Cabinet pays for the actual quantity that is required, no more and no less. Second, the ICE validates the basis for unit cost provisional bid items. The disadvantage of the use of unit cost provisional bid items is that the Cabinet must measure and track the quantity placed during construction.

The Cabinet and the Contractor should clarify how to handle underruns and overruns for provisional bid items, including defining the conditions that warrant an adjustment in the unit cost in the event of significant quantity overruns/underruns when compared to the planned quantity. Finally, it is important to understand that unit costs in CM/GC are slightly different from unit prices in DBB in that unit costs typically do not include any general condition costs and/or fees.

6.11.2 Provisional Sums (Allowances)

The Cabinet can also handle Provisional Sums through an allowance. The Cabinet can pay allowances as a lump sum bid item, where the contractor gets paid an agreed upon amount when the risk is triggered, or it can be a budgetary plug number in the GMP, where the Cabinet pays the cost on a time and materials (T&M) basis. Lump sum allowances are an effective mitigation tool when the risk is a discrete risk event, for which the Cabinet can estimate the cost for relief should the risk occur. Lump sum allowances also have the advantage of being validated by the ICE. T&M allowances can be beneficial to mitigate risk by avoiding unnecessary contingency in the GMP for items of work that are difficult to define. If the risk is triggered, the Contractor submits actual costs and the associated labor costs required to perform the work, which must be validated by the PM. Due to the level of effort required to track and agree on T&M allowances (both the Cabinet and the Contractor), the Cabinet should use T&M allowances sparingly, only as needed to mitigate risk. The Cabinet can use the Contractor's open book Cost Model to validate the equipment rates, labor rates, and labor additives/multipliers (fringe, small tools/consumables rate, etc.) that are submitted by the Contractor in its T&M billings.

6.12 Pass-Through Costs

The Cabinet may treat certain costs in the GMP as pass-through costs. The CM/GC Agreement defines what is considered a pass-through cost. The Cabinet would estimate pass-through costs in the GMP and pay them based on actual costs, without any markup. Examples of potential pass-through costs include bond, builder's risk, and insurance. The Cabinet typically pays these costs upfront as a condition precedent to executing the Pricing Package Amendment or shortly thereafter. The Cabinet would handle any difference between the estimated and actual pass-through costs by adjusting the contract value via a change order. All administrative effort associated with administering these pass-through costs should be captured in the Contractor's Construction Markup Fee.

6.13 CM/GC Payment Provisions for Subcontractors and Vendors

This section outlines the approach to payment approach for subcontracted work on a CM/GC project.

6.13.1 CM/GC Projects Without Buyout Bid Contingency

The Cabinet's standard approach for CM/GC projects is to base the GMP on actual quotes the Contractor provides and not require a reconciliation process comparing the quoted values used

as the basis for the GMP with actual quotes received during buyout (See Section 4 for more descriptions on the subcontractor and vendor buyout process). The Contractor assumes the risk of any change in price between what the Contractor used to estimate GMP and actual prices during buyout. Under this condition, the Cabinet allows the Contractor to make changes in subcontracting assumptions after executing a Pricing Package Amendment without consulting with the Cabinet. This could include using a different subcontractor or vendor than what was assumed in the GMP or even electing to self-perform the work. All savings the Contractor achieves by efficiently managing the subcontracting process during construction approach accrue to the Contractor, as it owns both the risk and the reward associated with subcontractor management. This is the same approach the Cabinet accepts for DBB or DB projects. Any changes in subcontractor choice made by the Contractor during construction alters the Contractor's commitment to meet with DBE goal established in the Pricing Package Amendment.

6.13.2 CM/GC Projects with Buyout Bid Contingency Provisions

When the CM/GC Agreement contains buyout reconciliation provisions (with an associated Bid Contingency), the Cabinet negotiates the GMP based on budgetary plugs for sub and vendor packages. During buyout, the Contractor solicits final quotes from subcontractors and vendors, and the Cabinet compares the actual quotes with the plugs used to estimate the GMP (see more on this process in Section 4). The PM uses buyout contingency accounting to compare quotes with plug values from the GMP, and periodically reconciles differences to and from the Bid Contingency pool. The Cabinet requires significant administrative effort during construction to manage the buyout process. The Cabinet uses support from the ICE and other professionals with this experience to help verify the credits and expenditures claimed by the Contractor as part of the periodic buyout reconciliation process. The PM must also confirm that the subcontracts and purchase orders match the value of the quotes.

6.14 Verification of the Contractor's Costs During Construction

As a general practice for CM/GC projects, the Cabinet relies primarily on an ICE to validate the Contractor's prices at the time that the GMP is negotiated. Once the Cabinet accepts the GMP and executes a Pricing Package Amendment, cost tracking should follow the Cabinet's accepted practices used for tracking actual costs during construction and as outlined in the CM/GC Agreement.

In certain cases, as described in Section 3.5.12, the CM/GC Agreement may contain provisions to base the GMP on a maximum (not-to-exceed) value where final payment is based on actual costs during construction. During the course of the work, some items may exceed the estimated amounts and others may underrun the estimated amounts shown in the GMP. If the CM/GC Agreement uses this approach of paying for actual costs, the Contractor must submit documentation of actual costs with each pay estimate to validate their expenses, and the Cabinet would have to audit and compare these costs to what the CM/GC used in the GMP.

Actual expenses that are less than what was estimated in the GMP typically accrue to the bid contingency pool and overruns pull from the bid contingency pool. The PM is responsible for managing the process of periodic reconciliation of contingency credits and expenditures from the bid contingency pool. At the end of the Project, any remaining funds in the contingency pool are either shared or accrue to the Cabinet as defined in the CM/GC Agreement. The subcontractor buyout process described in Section 6.13.2 would be one example of comparing actual costs with estimated costs. And, like the buyout accounting process described in 6.13.2, this process would require significant administrative effort (by competent professionals with these skills) during construction to manage the comparing of actual costs with estimated costs.