LOCAL ASSISTANCE PROCEDURES FOR CONSTRUCTION MANAGER/GENERAL CONTRACTOR (CMGC) PROJECTS

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1. Introduction

Construction Manager/General Contractor (CMGC) is a project delivery method that allows certain regional transportation agencies (RTAs) to select a construction contractor early in the project development process to act in an advisory role. Even if the CMGC delivery method is applicable to both federally and non-federally funded projects, the procedures are only intended for federally funded projects. The CMGC contractor provides constructability reviews, value engineering suggestions, construction estimates, construction scheduling, and other construction-related recommendations. When design is completed to about 90 to 95 percent, the RTA requests the CMGC contractor to provide a price to construct the project. If the RTA finds the price reasonable, the CMGC contractor will become the general contractor and will construct the project or portion of the project.

2. Background

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 CMGC contracting method for delivering Federal-aid projects. Section 1303 of MAP-21 required the Federal Highway Administration (FHWA) to promulgate regulations as are necessary to implement the statutory provisions. FHWA issued a Final Rule for CMGC that became effective on January 3, 2017. The provisions of the Final Rule have been incorporated into these procedures, for use on federally-funded projects on local highway systems that have been specified in State law as being eligible to use the CMGC method of procurement.

The California Legislature passed, and the Governor signed the following bills: Senate Bill (SB) 848 (June 27, 2018), Assembly Bill (AB) 115 (June 27, 2017), AB 2374 (September 28, 2016), and AB 1171 (October 01, 2015). These bills authorized certain RTAs to use the CMGC method of procurement to design and construct certain expressway projects not on the State Highway System (SHS) under specified circumstances. And they also authorized the use of the CMGC method for the construction of several structures that are not on SHS (see Section 4). As of January 2021, these bills have been codified under Public Contract Codes (PCC) 6970 through 6974.

These procedures were originally approved by the California Division of FHWA in February 2019, and updated in December 2022 for use by RTAs on their CMGC Federal-aid local highway system projects as required by the Code of Federal Regulations (CFR). Any proposed modifications to these procedures must be approved by Caltrans Division of Local Assistance (DLA) Office of Guidance and Oversight (OGO) and FHWA prior to their implementation. RTAs shall follow the DLA Procedures when using the CMGC delivery method for their projects.

3. Eligible Regional Transportation Agencies

The California Legislature has authorized certain RTAs to use the CMGC project delivery method to design and construct certain projects not on the SHS. Eligible RTAs are listed in Caltrans DLA website: https://dot.ca.gov/programs/local-assistance/Reports/cmgc.

4. Eligible Projects

Projects that can be delivered using the CMGC project delivery method on local highway system are documented in SB 848, AB 115, AB2374 and AB1171, and are codified in PCC 6971.

The optimal CMGC project has one or more of the following attributes: a high level of technical complexity, the need for a high level of risk management, complex phasing, and/or the need for overall schedule acceleration.

Those eligible projects where the CMGC delivery method can be employed are listed in the Caltrans DLA website: https://dot.ca.gov/programs/local-assistance/Reports/cmgc.

5. DLA and RTA's Notifications

The RTA is responsible to inform their ELAE when a project is selected for CMGC early in the process. DLAE is responsible to notify the FHWA Construction Manager and the FHWA Transportation Engineer assigned to the district. Early consultation with the FHWA will take place to determine FHWA's level of involvement in the project.

6. Procuring the CMGC Contractor

23 Code of Federal Regulations (23 CFR) Part 630 Preconstruction Procedures and Part 635 Construction and Maintenance, Subpart A – Contract Procedures; and Subpart E – Construction Manager/General Contractor (CM/GC) Contracting respectively prescribes policies, requirements, and procedures from FHWA's standpoint relating to the use of the CMGC method of contracting. The regional transportation agency (a sub-recipient) should be thoroughly familiar with federal regulations prior to engaging in any CMGC procurement activity on a local highway system project that will use federal funds.

PCC 6973 states that CMGC projects authorized pursuant to PCC 6972 shall be governed by the same process, procedures, and requirements as set forth in PCC 6703, subdivision (a) of PCC 6704, and PCCs 6705 to 6708, inclusive, except that any reference to "department" shall mean the regional transportation agency. The RTA should be thoroughly familiar with these PCCs prior to engaging in any CMGC procurement activity on a local highway system project to be funded with federal funds. If there is a conflict between the PCCs and 23 CRF Parts 630 and 635, 23 CRF will govern.

A CMGC contract is a two-phase contract with the first phase of the contract being the preconstruction services phase and the second phase being the construction services phase. The second phase will be executed if the price for the construction services is found to be reasonable by the RTA. The construction services phase may occur under one contract or multiple contracts covering portions of the project, including early work packages (e.g., utility relocation, procurement of long lead items, etc.).

The CMGC contractor should be procured early in the design process. CMGC contractor procurement should typically occur around the time the final design begins, preferably no later than the 30% design milestone, but in some instances, it may be beneficial to do so even earlier such as prior to completing the NEPA approval process, i.e., during the preliminary design process. The goal in selecting the right timing is to maximize the value of the contractor's participation in the preconstruction phase by allowing them to provide input (e.g., constructability, risk identification, costs, schedule, and innovative construction methods) into important design decisions that shape the project and direct design development.

The RTA is responsible for determining the optimal time to procure the CMGC contractor. See Section 8, Pre-NEPA Approval Activities and Requirements, if the procurement is anticipated prior to the completion of the NEPA approval process.

Procurement of a CMGC contract can be based on qualifications or on a best value-based selection process. This competitive selection process is left to the discretion of the RTA provided that its procedures do not serve as a barrier to free and open communication or conflict with 23 CFR Part 635, Subpart A & E. PCC 6703, which the RTA is required to follow per PCC 6973, requires the RTA to establish a procedure for the evaluation and selection of a CMGC contractor through a request for qualification (RFQ). A qualification-based selection is based simply on the qualifications of the proposer as described in the proposer's Statement of Qualifications (SOQ). A best value selection is based on both qualifications of the proposer as well as pricing information such as preconstruction services cost or the proposed markups on construction costs. In determining the procurement method for the CMGC contractor, the RTA should consider the benefits of qualifications-based selection such as: higher confidence that the most qualified and experienced firm is being selected, promotes higher quality of service, technical innovation and creativity, encourages competition based on merit, and allows for clear definition of scope before agreeing to costs.

Both processes use a one-step solicitation process utilizing a RFQ that shall be publicly advertised by the RTA. The RFQ must, at a minimum, provide the following:

a. Clearly define the scope of services being requested.
b. List the evaluation factors and sub-factors including their relative importance that the RTA will use to evaluate the SOQs.
c. List pass/fail factors.
d. List all the required deliverables.
e. List required referenced contract provisions.
f. List the method(s) of payment for preconstruction services.
g. Indicate if interviews will be conducted before establishing the final rank (the RTA may reserve the right to make a final determination whether interviews are needed based on responses to the RFQ).
h. If interviews will be used, indicate its relative importance to all evaluation factors.
i. Indicate the protest process.
j. Include sample contract form(s) or reference the sample contract forms.
k. Dedicated subcontractors/subconsultants requirements, if applicable.
l. Evaluation rating guidelines.
m. Identify if a short list will be used.
n. Indicate that the DBE requirements will not apply to pre-construction services, but it will apply to the construction services portion of the CMGC project.
o. Indicate the minimum percentage of work during the construction services phase that the CMGC contractor must perform (must be at least 30%, excluding specialty work).
p. The RTA's adopted subcontracting procedures that the CMGC contractor must comply with. Regarding subcontracting, the RTA must comply with PCC 6705, 23 CFR 635.504 (d) and the DBE regulations in 49 CFR 26.
q. Indicate the conditions under which the second phase of the two-phase CMGC contract, the construction services contract, may or may not be awarded. If NEPA process has not

been completed, the RFQ must indicate that the RTA will unilaterally terminate the CMGC contract if the NEPA environmental process results in the selection of the No-Build alternative.

r. Indicate whether or not the CMGC contractor must be excluded from bidding on the advertised contract.

On projects where the RTA determines specialized expertise is key for the successful delivery of the project, the RTA may require dedicated subcontractors/subconsultants as part of the CMGC Contractor's team. The dedicated subcontractors/consultants will be procured as part of the CMGC Contractor's team. Expertise and experience requirements of the subcontractor/subconsultants must be addressed in the RFQ.

Upon issuance of the RFQ, all communication between the RTA and the prospective proposers, such as responses to questions, will be through the designated RTA contact identified in the RFQ. All responses to questions and any addenda required will be posted publicly by the designated RTA contact.

SOQs will be submitted to the RTA by a specified date and time. The RTA oversees the opening and completes the initial review of the SOQs for completeness.

The SOQs are then distributed to the RTA's evaluation team members to be evaluated. The evaluation team consists of project members and/or subject matter experts appointed by the RTA who perform independent evaluations of the SOQs against the evaluation factors. The RTA may request FHWA and Caltrans DLA Construction Oversight Engineering (COE) staff to participate on the evaluation team as a non-voting member.

During the evaluations, communications may be used through the designated contact to the proposers to clarify minor ambiguities, errors, omissions, or other information that would not necessitate a change of the SOQ.

Once all evaluations are complete, the qualitative ratings are converted to points and a score is assigned to each proposer. If the RTA establishes a short list based on SOQ scores and the selection process includes interviews, the RTA must invite all proposers on the short list to interview. If a short list is not used and the selection process includes interviews, the RTA must invite all responsive proposers to interview. All evaluations are performed in accordance with the RFQ and the evaluation procedures approved by the RTA. A preconstruction services contract will be awarded to the highest ranked proposer.

Allowable methods of payment for preconstruction services are lump sum, cost plus fixed fee, cost per unit of work, or specific rates of compensation. Method of payment for construction services will be defined in the construction services contract.

The CMGC Contractor is to certify that all costs are allowable in accordance with the federal cost principle. All costs included in the proposal to establish final indirect cost rates for are allowable in accordance with the cost principles in 2 CFR part 200 subpart E, and the proposal does not include any costs which are expressly unallowable under applicable cost principles of 2 CFR part 200 subpart E.

7. Preconstruction Services

Preconstruction services means a CMGC contractor will provide a RTA and its designer (in house or A&E consultant) with information regarding the impacts of design elements on the physical construction of a project, including but not limited to: scheduling, work sequencing, cost estimating, constructability, and risk identification/analysis. Under a preconstruction services contract, the CMGC contractor may, depending on when procured, provide consulting services during both preliminary design and/or final design. Preconstruction services may include on-site material sampling and data collection to assist the RTA's design team in its design work, but do not include engineering or design related services as defined in 23 CFR 172.3. Pre-NEPA pre-construction services may include preliminary staging or preliminary falsework plans when needed for the NEPA process. However, services involving plans or submittals that are for the final design and not needed for the NEPA process (such as shop drawings and fabrication plans) is not permitted, even on an at-risk basis, prior to a NEPA environmental document approval.

After award of the preconstruction services contract, the CMGC contractor becomes a member of the project development team and can perform a variety of preconstruction services at the direction of the RTA. The RTA's designer provides the Engineer's Estimate (EE) and advises the RTA on cost related issues. In addition, the RTA shall procure an Independent Cost Estimator (ICE) to provide independent cost estimates for the purposes of evaluating the acceptability of the EE and the CMGC contractor's price proposals and to advise the RTA on cost related issues. The ICE consultant may be involved in many of the preconstruction services (e.g. partnering, design reviews, innovation and risk workshops) as directed by the RTA allowing the CMGC Contractor to obtain good understanding of the project in order to develop informed cost estimates. The ICE must be a consultant not affiliated with the CMGC contractor and not affiliated with the RTA's designer and must have experience performing contractor style or production based estimating in order to assist the RTA in reconciling cost estimates with the CMGC contractor. The RTA must procure the ICE consultant using the DLA procurement procedures in Chapter 10 of Local Assistance Procedures Manual (LAPM). To determine the appropriate DBE goal for the contracts, the RTA must follow the standard goal setting method stated in the LAPM Chapter 9.

If the CMGC contractor determines and the RTA agree that additional expertise would be beneficial to the project (better constructability, reduced risks, etc.), the CMGC contractor can be authorized to procure those services through a competitive process. The competitive process must include a cost element, but can include other factors such as qualifications, schedule, and approach to project. The proposed selection process must be approved by the RTA prior to solicitations.

In addition to the activities described below, the CMGC contractor may provide other potential preconstruction services to assist the RTA in developing the project, such as those listed in Table 1. Appendix B provides some descriptions of these services. The preconstruction services requested by the RTA will vary from project to project and is to be determined by the RTA following 23 CFR 630 & 635 Subpart A & E.

The following is a brief overview of the typical activities required in the CMGC preconstruction phase and included in the preconstruction services contract.

A. Project Kickoff Meeting and Partnering Workshop

The CMGC preconstruction phase usually begins with a project kickoff meeting and partnering workshop. These can be conducted separately, or they may be combined into a multiday workshop. The partnering workshop is often facilitated by a third party experienced in partnering, with the goal to develop trust, respect, and cooperation among all key players. The project kickoff meeting is used to review the team's roles, responsibilities, preliminary schedule, scope of work and project goals.

B. Prepare Risk Management Plan/Risk Register

Following, or in conjunction with, the project kickoff meeting, the project team meets to develop a risk register for the project as part of the Risk Management Plan. The risk register is a tool used to identify, assess, mitigate, and monitor project risks. The risk register includes a matrix that identifies each risk; its risk level, cost impact, schedule impact, and responsible party; approaches to minimize risk and results of the risk mitigation. The risk register is continually reviewed and updated by the project team throughout the preconstruction phase to assist with key decisions on design development, risk, and project costs.

C. Prepare Cost Model

The CMGC contractor prepares a project cost model with input from the project team. The cost model is an open and transparent document that defines the CMGC contractor's pricing assumptions for use by the ICE consultant and the RTA's designer. The cost model defines the CMGC contractor's costs related to labor, materials, equipment, subcontractor and supplier quotes, means and methods, production rates, risk, direct costs, mobilization, overhead and profit. The cost model is continually reviewed and discussed by the project team and updated by the CMGC contractor prior to submitting its Opinion of Probable Construction Cost (OPCC) at each pricing milestone and prior to submitting its price proposal. This assists all estimating parties in developing their estimates, and ensuring item costs can be reviewed and compared among the estimates. Although the CMGC contractor is responsible for developing the cost model, the intent is to have the RTA's designer and the ICE consultant concur with the CMGC contractor's cost model.

D. Design Development

The RTA's designer is responsible for developing the design plans (PS&E). The CMGC contractor's input during the design developing process is used to supplement and enhance the design. The RTA's designer develops final design plans, collaborating with the CMGC contractor on key design issues. Early (for example, 30% PS&E) and continuously through the design development, the CMGC contractor provides both formal and informal input on constructability, construction phasing, innovative design alternatives, and potential schedule and cost savings opportunities. Because no guarantee exists that the CMGC contractor and the RTA will come to final agreement, it is important that the design plans aren't configured in a way that make them only useful for the CMGC contractor.

E. Design Reviews

The RTA, its designer, and the CMGC contractor participate in design reviews throughout the design process. The purpose of the design reviews are to (1) ensure a constructible and cost-effective design that is consistent with the design intent; (2) ensure that the design complies with

standards; (3) endeavor to confirm that all work has been included and described in sufficient details for each stage of design; (4) allow all parties to provide feedback on the constructability of the plans; (5) discuss assumptions on means and methods, and construction staging or sequencing of work that affects cost; (6) reconcile quantity differences between the estimators (i.e. Quantity Reconciliation Meetings); and (7) identify any errors, omissions, ambiguities, or other items that need to be corrected.

F. Innovation Management

The CMGC contractor develops, proposes, and tracks challenges and quantifies benefits of innovations throughout the preconstruction phase, including proposing criteria to evaluate suggestions and select improvements that will offer the most value in terms of cost, schedule, and quality. The CMGC contractor prepares, modifies, and maintains an innovation register, which identifies the person and entity that proposed the idea, the value of the idea (in terms of cost, savings, risk reduction/mitigation, and schedule impact), and which ideas were incorporated by the project team into the final design and construction documents, and ideas which were not incorporated and the reasons why should also be documented. The CMGC contractor submits written documentation of all suggested innovations at each design milestone at a minimum. While the RTA may entertain Value Engineering Change Proposals during the construction phase, the expectation is that these proposals are developed and incorporated into the project during the design development phase.

G. Risk Workshop

A risk workshop is typically a half-day to full-day workshop that occurs in conjunction with, or shortly after, the design review workshop. The risk workshop allows the RTA, its designer, and the CMGC contractor to update the risk register.

H. Develop and Submit Cost Estimates and Schedule

The CMGC contractor and the ICE consultant each independently prepare a contractor-style, production-based, cost estimate and schedule that is based on the early design stage (for example, 30% design plan and specification, if prepared at the time). The RTA's designer prepares an EE using its typical historical bid-based estimating process. With the three estimates, the RTA's designer then develops a variance report for use by the project team. The variance report shows the CMGC contractor's OPCC. In addition, the variance report notes whether the CMGC contractor's OPCC is within 10% or, alternately, within a fixed dollar figure of the ICE for each Price Proposal item. The CMGC contractor's schedule is provided to the RTA and ICE consultant for their review and comment. This occurs at, or slightly before, the submission of the CMGC contractor's OPCC.

I. Price Reconciliation Meeting

Following the submission of the estimates at an early design stage (for example 30% design milestone), the RTA, the RTA's designer, the CMGC contractor, and the ICE attend a Price Reconciliation Meeting that typically ranges from one to three days, depending on the size and complexity of the project and the extent of the price differences. The purpose of the meeting is to review pricing assumptions and attempt to reconcile price differences between the CMGC contractor's OPCC and the ICE. The meeting gives each party an opportunity to understand each other's perspective about pricing assumptions and risk assignment. This meeting also helps the

RTA develop a greater confidence level regarding the cost of the project and the reasonableness of the CMGC contractor's OPCC. Neither the EE nor the ICE is disclosed to the CMGC contractor. The RTA and its designer participate in these meetings but does not disclose the EE to the ICE consultant nor the CMGC contractor.

RTA's designers and consultants representing structures, construction, and design should participate in these meetings to support the ICE consultant in reconciling the estimates as well as to help validate assumptions. Participation by construction staff will also help improve the transition to construction.

J. Adjust Cost Model, Schedule, and Pricing

The RTA and CMGC contractor agree upon changes to the pricing assumptions. The CMGC contractor adjusts the cost model and the schedule to reflect these changes and resubmits them to the RTA. This information is then documented in the project file. Any pricing changes will be carried forth to the next estimating milestone or the price proposal. During the reconciliation process, the RTA's designer and the ICE consultant may believe it is necessary to adjust their pricing assumptions and estimates.

K. Subsequent OPCCs

As the design progresses, the previous activities are repeated to coincide with each remaining design milestone, as determined by the RTA (subsequent milestones typically occur at the 60% and 90% final design). Additional OPCCs may be necessary if significant design changes occur or significant pricing variances remain. One of the goals through this iterative process is to reconcile pricing differences throughout the preconstruction phase, thereby helping ensure that the CMGC contractor's price proposal is determined to be reasonable by the RTA (i.e., the price proposal becomes the Agreed price, subject to substituted changes upon the selection of responsible & responsive bids through a competitive bid process on all the sub-contracted work.).

TABLE 1 – POTENTIAL PRECONSTRUCTION SERVICES

DESIGN RELATED	SCHEDULE RELATED
Validate RTA/Consultant design	Validate RTA/consultant schedules
Assist/input to RTA/Consultant design	Prepare and manage project schedules
Design reviews	Develop sequence of design work
Design charrettes	Construction phasing
Constructability reviews	Schedule risk analysis/control
Operability reviews	**ADMINISTRATION RELATED**
Regulatory reviews	3rd party impact avoidance and reduction strategies
Market surveys for design decisions	Prepare document control
Verify/take-off quantities	Coordinate contract documents
Assistance shaping scope of work	Coordinate with 3rd party stakeholders
Feasibility studies	Attend public meetings
Risk identification and mitigation	Bidability reviews
Maintenance of Traffic	Subcontractor bid packaging
Staging needs	Analyze environmental commitments/permits
COST RELATED	Coordinate site visits for subcontractors
Validate RTA/consultant estimates	Project Meetings
Prepare project estimates	Assist in right-of-way acquisition
Cost/Benefit engineering reviews	Assist in permitting actions
Early award of critical bid packages	Study labor availability/conditions
Life cycle cost analysis	Prepare sustainability certification application
Value analysis	Coordinate site visits for subcontractors
Material selection and cost forecasting	**PRECONSTRUCTION RELATED FIELD WORK**
Cost risk analysis	Utility Relocation
Cash flow projections/Cost control	Potholing
	Preliminary soil and geotechnical studies
	Right of Way demolition
	Preliminary surveying

Note: This list adapted from National Cooperative Highway Research Program Project 10-85 "A Guidebook for Construction Manager-at-Risk Contracting for Highway Projects"

8. Pre-NEPA Approval Procurement and Requirements

If the CMGC contractor is procured prior to completing the NEPA approval process, the RTA must abide by and include the following provisions in the CMGC RFQ and the CMGC Preconstruction Services Contract:

a. A provision allowing unilateral termination by the RTA if the approved NEPA environmental document does not result in selection of a build alternative.
b. A provision that the scope of services in the preconstruction phase includes all alternatives identified and considered in the NEPA process.
c. A provision ensuring that no commitments are made to any alternative during the NEPA approval process and that the comparative merits of all alternatives identified and

considered during the NEPA approval process, including the no-build alternative, will be evaluated and fairly considered.

d. A provision that the CMGC contractor must not prepare NEPA documentation or have any decision-making responsibility with respect to the NEPA environmental document approval process. However, the CMGC 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 included in the record.

RTA will not proceed, or permit any consultant or contractor to proceed, with the development of shop drawings and fabrication plans before completion of the NEPA approval process for the project. Nor will the RTA proceed with award of a construction contract (including early work packages such as advanced material acquisition) and will not proceed, or permit any consultant or contractor to proceed, with construction (including early work packages and portions of the project) until the completion of the NEPA approval process for the project.

The RTA is required to follow the procedures in the Chapter 6 of the LAPM regarding the NEPA environmental process. Final design work done prior to NEPA environmental document approval is called at-risk design. Chapter 6 does not allow at-risk final design. While 23 CFR 635.505 (c) conditionally allows use of at-risk final design, the DLA will not allow the RTA to proceed with at-risk final design.

9. Work Packages

An advantage of CMGC project delivery method is that it allows the flexibility to perform construction in phases with multiple work packages as project phases are identified and approved for construction. Reasons for using multiple work 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. Note that FHWA's construction contracting requirements will apply to all CMGC construction contracts if any portion (including an early work package) of the CMGC construction contract is funded with Federal-aid funds.

If a RTA proposes to utilize multiple work packages for the main portion of construction, it must at the time of requesting authorization of the initial work package: (1) provide written documentation on the availability of the amount and type of funds for each of the multiple work packages and that these funds are committed for construction of the entire project. An authorization request requires that the required funds for the phase be committed and included in the approved STIP and other funding programs prior to any authorization of said phase, (2) provide a detailed explanation of why the main portion of the project needs to be delivered using multiple work packages and the proposed construction schedule for each of the work packages, (3) provide a schedule for beginning construction on each of the multiple work packages which must be consistent with committed funds for each of the multiple work packages.

Work packages must be a severable phase of the construction, such that the RTA is not obligated to have the CMGC contractor construct any other portions of the work. Each work package must obtain all required clearances, including applicable FHWA approvals, and be evaluated and awarded through the Price Proposal process. For this reason, a single package may be more

efficient as the Price Proposal and contracting processes are only performed once. Furthermore, a single package helps ensure that the cost of the entire project is within budget and that the project has cleared all constraints before proceeding with Construction.

An early work package is a type of work package for a portion of physical construction work (including but not limited to site preparation, structure demolition, hazardous material abatement/treatment/removal, or early material acquisition/fabrication) that is procured after NEPA environmental document approval but before all final design work for the project is complete. Early work 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 work packages to avoid price escalations for volatile construction materials.

Per the FHWA's Final Rule for CMGC (https://www.govinfo.gov/content/pkg/FR-2016-12-02/html/2016-28977.htm), early work packages are intended for minor elements of project construction that can be accomplished during the period after NEPA environmental document approval is complete and before final design of the project is sufficient to permit the RTA and the CMGC contractor to reach price agreement for construction of the entire project. Early work packages are not to be used to piecemeal construction. Therefore, when considering use of an early work package for any federally funded project, the RTA must provide written notification stating reasons for using early work package and consult with the DLAE and if necessary, with FHWA to verify the early work package for the scope of work constitutes minor elements, and not a main portion of project construction.

If a work package is being issued, the first OPCC must be for the entire project and must be requested from the CMGC contractor prior to awarding a contract for the work package, including an early work package. The OPCC for the entire project is used by the RTA to confirm that the overall construction scope can be completed within the available project budget. Exact timing for requesting an OPCC for the entire project from the CMGC contractor is evaluated on a project-by-project basis; however, it is typically requested in conjunction with an OPCC for a work package.

The RTA is required to provide the FHWA with a total construction project cost estimate prior to the FHWA's authorization of construction services (including authorization of an early work package). The RTA will use the ICE's total construction project cost estimate to fulfill this requirement. No construction activities (including early work packages, even on an at-risk basis) shall be performed or contracted prior to the completion of the NEPA approval process.

10. Price Analysis Process

Once design has been completed to a level where a price may be submitted (typically at 90 to 95 percent of design), the RTA's designer will prepare a plans, specifications and quantities package. The construction services contract must include appropriate provisions ensuring that all environmental and mitigation measures identified in NEPA environmental document, permit conditions, and other agreements will be implemented.

Upon 90 to 95% completion of the plans, specifications, and quantities the RTA will request a price proposal from the CMGC contractor at an agreed upon date. The CMGC contractor will

develop the price proposal that will include the direct cost of performing the work (equipment, labor, materials, etc.), overhead and profit. Depending on the project schedule, the price proposal may be submitted with subcontractor plug values as placeholders pending solicitation of subcontractor bids. If subcontractor plugs are used, adequate time to solicit the necessary subcontractors and to meet the Disadvantaged Business Enterprise (DBE) contract goal will need to be provided prior to awarding the contract. However, subcontractor procurement must be scheduled so that the construction contract can be awarded while the subcontractor prices remain valid. The CMGC contractor signature on the construction contract confirms validity of the subcontractor prices for that construction contract.

DBE contract goals are set by the RTA and included in each construction contract to ensure that the goal is reflective of the bid items available in that construction contract and facilitate DBE participation as the project progresses. If a construction services contract is larger than $2 million, the DBE goal set by the RTA must be approved by Caltrans DLA.

At 95% design the RTA will use Caltrans DLA Exhibit 9-D to determine the DBE goal for the construction contract. The RTA must submit their Exhibit 9-D to DLAE. For contract less than or equal $2,000,000, DLAE will review, approve or revise the DBE goal. For contract larger than $2,000,000, the DLAE will send the Exbibit 9-D to DBEgoal.gfe@dot.ca.gov for review and approval.

If the CMGC contractor can't meet the DBE goal, they must submit the Good Faith Effort (GFE) package to RTA for review. If the contract is less than or equal $2,000,000, the RTA has the responsibility to review the GFE package. If the contract is larger than $2,000,000, the RTA will send the GFE package to DLAE, and DLAE will send to DBEgoal.gfe@dot.ca.gov for review.

Subcontractors and suppliers must be procured using a competitive and transparent bid process in accordance with the subcontracting plan approved by the RTA. The competitive bid process may include, but not limited to, the considerations of cost, best value, cost-plus-time, etc. as described in the approved subcontracting plan. The subcontracting plan must demonstrate how the CMGC contractor will ensure adequate competition, how the RTA's indicated minimum 30% percentage self-performance requirement (as required by 23 CFR 635.116(a)) will be met, and that there will be adequate subcontracted work available to meet the RTA's proposed DBE contract goal. The subcontracting plan shall be sent to and concurred by Caltrans DLAE prior to start subcontractor's procurement.

The price proposal will then be compared to the ICE estimate and the EE to determine its reasonableness. A price reconciliation meeting will be held to discuss differences in the CMGC contractor's price proposal and the ICE estimate. Neither the ICE estimate nor the EE will be provided to the CMGC contractor. After the reconciliation meeting is held, a revised price proposal may be requested by the RTA from the CMGC contractor and the ICE consultant. This will then be reviewed and reconciled as necessary.

Contingency is accounted for in every contractor's bid or cost proposal for every project, regardless of contracting method, and is reflective of the risks present at the time the bid/cost proposal is submitted. Typically, higher risk means higher contingency, and lower risk means lower contingency. One of the major benefits of CMGC contracting is that it allows the RTA and

the CMGC contractor to collaboratively work together during the preconstruction phase to better understand, manage, and reduce risks on the project, thereby lowering contingency costs.

For CMGC projects, risk is accounted for by two separate means: (1) in the CMGC contractor's price proposal for risk that the CMGC contractor has accepted, and (2) in the RTA's contingency (contingency and/or supplemental work) for risk that the RTA has accepted. Risks accepted by the CMGC contractor are included in the price proposal, so there will be no change order when those risks arise during construction. Risks accepted by RTA will generally result in a change order if the risk occurs. A dollar amount shall be established for assigned risks by using a risk simulation such as Monte Carlo method. The RTA and CMGC contractor must collaborate on risk assignment so that both parties understand the approach and methods used in the risk analysis.

After several submittals or if the price reconciliation is not progressing, the RTA will decide to either award the construction services to the CMGC contractor through a construction contract or to advertise the project for bids. In the event the RTA's price reconciliation process does not progress and the project is advertised for bids, each RTA is responsible to determine if the CMGC contractor and any entity under the CMGC contractor, is eligible to bid in accordance with California conflict of interest laws, including but not limited to California Government Code section 1090.

If an agreed price is reached, the RTA finalizes the plans and specifications with all necessary approvals, including, but not limited to right-of-way certification, and utility certifications and submits a Request for Authorization (Construction Services Contract) to the DLAE. The RTA submits a Recommendation for Award Memorandum to DLA's area engineer through the DLAE. The Memorandum will address the following but not limited to: project scope, identify CMGC contractor, summarize price reconciliation process that took place, date of proposed price submittal and agreed price, ICE and EE including percentage difference and variances between the agreed price and the ICE and between the agreed price and the EE, differences between ICE and EE, determination of materially or mathematically unbalancing of bid, etc.

- If the price proposal is within the available project budget and within 10% of the ICE estimate, no additional justification in the Recommendation to Award Memorandum is required.
- If the price proposal is more than 10% over or less than 90% of the ICE estimate, the RTA must include in their Recommendation to Award Memorandum additional justification for awarding the contract to the CMGC contractor. The Request for Authorization, the price proposal and the recommendation memo shall be provided to DLA's area engineer through the DLAE for review and concurrence.

The price analysis process is shown in Figure 1.

11. Federal Highway Administration (FHWA)

FHWA requirements are applicable to all Federal-aid funded CMGC projects located within the public right-of way. The provisions of 23 CFR 630 and 635 apply to CMGC contracts. FHWA's Final Rule for CMGC outlines requirements, including FHWA approvals, specific to federally funded CMGC projects. As per Caltrans and FHWA Stewardship and Oversight Agreement (S&OA 2015), CMGC approval actions remain responsibility of the FHWA California Division.

These actions are listed in Table 2. Note that as per the S&OA, FHWA still retains approval of additional actions that by law cannot be delegated to Caltrans such as but not limited to: Post-NEPA approval review of at-risk final design costs for eligibility, approval of CMGC procurement procedures, Buy America waivers, approval of Initial Financial Plan and its Annual Updates, Project Management Plans, etc.

The DLAE should review and request FHWA approval of the RFQ. FHWA's approval of the RFQ document will constitute approval to use the CMGC contracting method and release the RFQ document. The DLAE will transmit RFQ document approval or disapproval of the RFQ document to the RTA with notification to the DLA OPI. The RTA must, through the DLAE, request FHWA's authorization of preliminary engineering (PE), including any additional costs for preconstruction services, prior to incurring such costs. Prior to FHWA's preconstruction services authorization and RTA's start of work, the RTA must obtain FHWA's approval of the preconstruction price and cost/price analysis and preconstruction services contract award. If PE has already been authorized, and the work of preconstruction services was not included, the RTA must request a modification to the PE authorization to add the preconstruction services work. The flow chart shown in Figure 2 shows the general CMGC approval process for preconstruction and construction services for one scenario. This scenario involves a post-NEPA preconstruction services contract, no early work package, and one construction contract for the entire portion of Construction.

As discussed in Section 7 of this document, the RFQ may be issued prior to or after approval of the NEPA environmental document. However, preconstruction services eligible for reimbursement may only be related to preliminary design until the NEPA environmental document is approved. Upon approval of the NEPA environmental document and FHWA authorization of final design, final design and preconstruction services related to final design may be eligible for reimbursement. Although DLA will not allow the RTA to proceed with at-risk final design, by law, FHWA retains post-NEPA approval review of at-risk final design costs for eligibility.

Once design has reached a level where a final price proposal can be solicited, and agreed to move through the price analysis process, the RTA may submit a Request for Authorization of the construction services. The DLAE will review and approve the price analysis and agreed price prior to request authorization of construction services to FHWA. Prior to FHWA's construction authorization and RTA's start of work, the RTA must obtain FHWA approval of the price estimate for entire project, construction price analysis for each construction services contract, and construction services contract awards.

After FHWA authorization of the construction services contract, the RTA will direct the CMGC contractor to obtain subcontractor bids utilizing the RTA subcontracting procedures and the RTA's proposed DBE contract goal. The RTA then replaces the subcontractor plug in values with the responsive & responsible bids on the subcontracts and requests DLA concurrence to award the construction services contract. The RTA will provide a copy of the final executed construction services contract to the DLAE & DLA Office of Project Implementation (OPI).

Federally funded CMGC projects on local highway systems shall use these procedures and guidance described in this document. Table 3 lists CMGC actions and identifies roles and responsibilities for the RTA, Caltrans DLA, DLAE, DLA OPI, and FHWA. Any modifications to

these procedures will require Caltrans DLA Office of Guidance and Oversight (OGO) and FHWA approval. The RTA is responsible for complying with CMGC PCCs.

For RTA's reference, Appendix A lists several scenarios and documents that should be submitted to DLA and FHWA through the DLAE for CMGC procedures for federally funded local projects.

TABLE 2 – FHWA'S APPROVAL ACTIONS ON CMGC PROJECTS

23 CFR	Actions	Responsible Agency
635.506(a)(2) 635.504(c)	Approval of CMGC Procurement Procedures and Revisions	FHWA[1]
635.112	Approval of solicitation document *(i.e. RFQ)*	FHWA[2]
635.112	Approval of major Addenda to RFQ[3,4]	FHWA[2]
635.506(a)(2) 635.506(c)	FHWA post-NEPA review of at-risk final design costs for eligibility[5]	FHWA[1]
635.506(a)(3) 635.504(e)(2)	Approval of indirect cost rate[6]	CALTRANS[12]
635.506(a)(3) 635.506(b)	Approval of preconstruction price and cost/price analysis[7]	FHWA[2]
635.506(a)(3) 635.506(e)	Approval of preconstruction services contract awards	FHWA[2]
635.506(a)(3) 635.506(d)(2)	Approval of price estimate for entire project[8]	FHWA[2]
635.506(a)(3) 635.506(d)(4)	Approval of construction price analysis for each construction services contract[9]	FHWA[2]
635.506(a)(3) 635.506(e)	Approval of construction services contract awards	FHWA[2]
635.504(b)(6)	Concurrence to initiate new procurement process[10]	FHWA[2]
635.506(a)(3) 635.504(b)(6) 635.112	Approval for bid or proposals[11]	FHWA[2]

Footnotes:

1 These actions cannot be delegated to Caltrans. 23 U.S.C. 106 (c) does not allows for delegation of these activities.

2 These actions are responsibility of FHWA since they have not been delegated through the FHWA/Caltrans Stewardship and Oversight Agreement(S&OA). CFR allows for delegation to Caltrans which may occur in the future through the S&OA. However, these activities cannot be further delegated to the RTA as per 635.506(a)(3).

3 Major Addendum includes, but is not limited to, changes to the selection method, evaluation criteria, or significant changes to the scope of services.

4 The Caltrans PM will submit the CMGC RFQ to FHWA for review prior to advertising the document. Major RFQ Addenda are submitted to FHWA for approval prior to posting.

5 Caltrans must notify FHWA of decision to perform at-risk final design prior to undertake such activities. Caltrans may use at-risk final design only if Caltrans has a procedure for segregating the cost of the CMGC Contractor's at-risk work from preconstruction services eligible for reimbursement during the NEPA process.

6 Indirect cost rate only applies to the CM when the method of payment for preconstruction services is based on actual costs (cost-reimbursement contracts). This action is delegated since FHWA approved Caltrans's Procedures for handling indirect cost rate for A&E Contracts, see LAPM Chapter 5.13.

7 FHWA must authorize preliminary engineering (including the costs of preconstruction services) before incurring such costs. If preconstruction services were not included in original authorization, request a modification to include those costs if necessary. Concurrence in Award and Authorization will be issued at the same time.

8 Caltrans to provide price estimate for entire project prior to any construction authorizations, including early work packages. When Caltrans requests construction authorization for early work packages, Caltrans may submit a revised price estimate (once final design is complete), if such revision is needed to support subsequent authorization request.

9 The estimate submitted to FHWA for Price Proposal Analysis will be the ICE Estimate.

10 Applicable in the event Caltrans is unwilling or unable to enter into a contract with the CMGC for construction services

11 Applicable in the event Caltrans uses a new procurement method and uses federal funds for construction.
12 As per 23 CFR 635.506(a)(1)&(3), responsibility is delegated to Caltrans but cannot be further delegated to the RTA.

TABLE 3 – CMGC RESPONSIBILITY ACTIONS BY AGENCY

ACTIVITY	RTA ACTION	CALTRANS ACTION (DLAE/DLA OPI)	FHWA ACTION
Local Assistance Procedures for CMGC Projects *(Note: This action cannot be delegated to Caltrans)*	Comply	Review & Recommend – DLA various offices	Approve
Project Delivery Selection	Determine & Notify	Notify – DLAE	None
Potential Conflict of Interest	Determine & Notify[1]	None – DLAE	None
Cost or Price Analysis for Preconstruction Services Procurement (including contract modifications)[8]	Prepare	Review & Recommend – DLAE	Approve
Concurrence in Award – Preconstruction Services	Prepare	Review & Recommend – DLAE	Concur
Preliminary Engineering E-76 Authorization (including cost of CMGC contractor's Preconstruction Services)	Prepare	Review & Recommend – DLAE	Authorize[4]
Procure Independent Cost Estimator (ICE)	Procure	Review & Approve – DLAE	None
Request for Qualifications (RFQ)	Prepare	Review & Recommend – DLAE[2]	Approve
RFQ Clarifications	Prepare	None	None
Minor RFQ Addenda	Prepare	Review & Approve – DLAE	None
Major RFQ Addenda	Prepare	Review & Recommend – DLAE[2]	Approve
Re-issuing Procurement	Determine & Notify	Notify – DLAE	None
Use Another Procurement Process	Prepare	Review & Recommend – DLAE	Concur
Cancelling Procurement	Determine & Notify	Notify – DLAE	None
SOQ Evaluations	Conduct	Review – DLAE	None
Short-List	Prepare[1]	None	None
Debriefing	Conduct	Participate – DLAE	None
Design Review Workshops	Conduct	Observe – DLAE	None
Quantity Reconciliation Meetings	Conduct	Observe – DLAE	None
Price Reconciliation Meetings	Conduct	Observe – DLAE	None
Price Variance Report	Prepare[1]	Review – DLAE	None
Risk Workshops	Conduct	Participate – DLAE	None
Proceed with at-risk final design	N/A	N/A	Approve[9]
Use of Early Work Package	Prepare	Review & Approve – DLAE	None
Price Estimate for Entire Project[6,8] (including early work packages)	Prepare	Review & Recommend – DLAE	Approve
Indirect Cost Rate[10] *(Note: This action cannot be further delegated to the RTA)*	Submit	Approve – DLAE	None
Price Proposal Analysis[10] for Construction Services Contract (including Early Work Packages)	Prepare[5]	Review & Recommend – DLAE	Approve

Concurrence in Award[7] Construction Services (including early work packages)	Prepare	Review & Recommend – DLAE	Concur
Construction Authorization E-76 (including Early Work Packages)	Prepare[3]	Review & Recommend – DLAE & DLA OPI	Authorize
Reject Price Proposal	Notify	Review & Concur – DLAE	None
Terminate CM Contract	Determine & Notify	Review & Concur – DLAE	None
Post-NEPA approval review of at-risk final design costs for eligibility *(Note: This action cannot be delegated to Caltrans)*	Prepare	Review & Recommend – DLAE	Approve

Footnotes:

[1] RTA will provide Caltrans with a courtesy copy.

[2] The District Local Assistance Engineer (DLAE) will submit the CMGC RFQ to FHWA for approval prior to advertising the CMGC RFQ. Major RFQ Addenda are submitted to FHWA for approval prior to posting. Major Addendum includes, but is not limited to, changes to the selection method, evaluation criteria, or significant changes to the scope of services. Early and continuous coordination is encouraged by providing a draft RFQ for FHWA review.

[3] RTA will submit the Request for Construction Authorization to Caltrans DLA OPI, for the project or a work package, after Caltrans DLAE deems the CMGC Contractor's Price Proposal to be acceptable - per the CMGC Price Proposal proces, Caltrans request for authorization.

[4]FHWA must authorize preliminary engineering (including the costs of preconstruction services) before incurring such costs. If preconstruction services were not included in original authorization, request a modification to include those costs.

[5]The estimate submitted to the FHWA for Price Proposal Analysis will be the ICE estimate.

[6]RTA to provide price estimate for entire project prior to any construction authorizations, including early work packages.

[7] FHWA concurrence in award constitues approval of the Agreed Price, scope, and schedule for the work.

[8]As per 23 CFR 635.506(a)(1)&(3), if action is assumed by Caltrans it cannot be further delegated to the RTA.

[9]Although DLA will not allow the RTA to proceed with at-risk final design, by law, FHWA retains post-NEPA approval review of at-risk final design costs for eligibility.

12. Progress Report

Within 60 days after a project is completed, and the project is finally accepted using the CMGC method, the RTA shall prepare a progress report to its governing body. The progress report shall include, but not be limited to, all the following information:

a. A description of the project.
b. The name of the entity that was awarded the project.
c. The estimated and actual costs of the project.
d. The estimated and actual schedule for project completion.
e. A description of any written protests concerning any aspect of the solicitation, bid, proposal, or award of the project, including, but not limited to, the resolution of the protests.
f. An assessment of the prequalification process and criteria required by the Chapter 6.7 of Public Contract Code.
g. A description of the method used to evaluate the bid or proposal, including the weighting of each factor and an assessment of the impact of this requirement on a project.

h. A description of any challenges or unexpected problems that arose during the construction of the project and a description of the solutions that were considered and ultimately implemented to address those challenges and problems.
i. Recommendations to improve the CMGC method.

The progress report shall be made available on the RTA's Internet Web site. The RTA shall send a copy of the progress report to Caltrans DLAE, DLA OPI and FHWA.

13. References

1) FHWA Construction Program Guide for Construction Manager/General Contractor Project Delivery – https://www.fhwa.dot.gov/construction/cqit/cm.cfm
2) FHWA CMGC Final Rule – https://www.gpo.gov/fdsys/pkg/FR-2016-12-02/html/2016-28977.htm

Figure 1- CM/GC Price Analysis Process

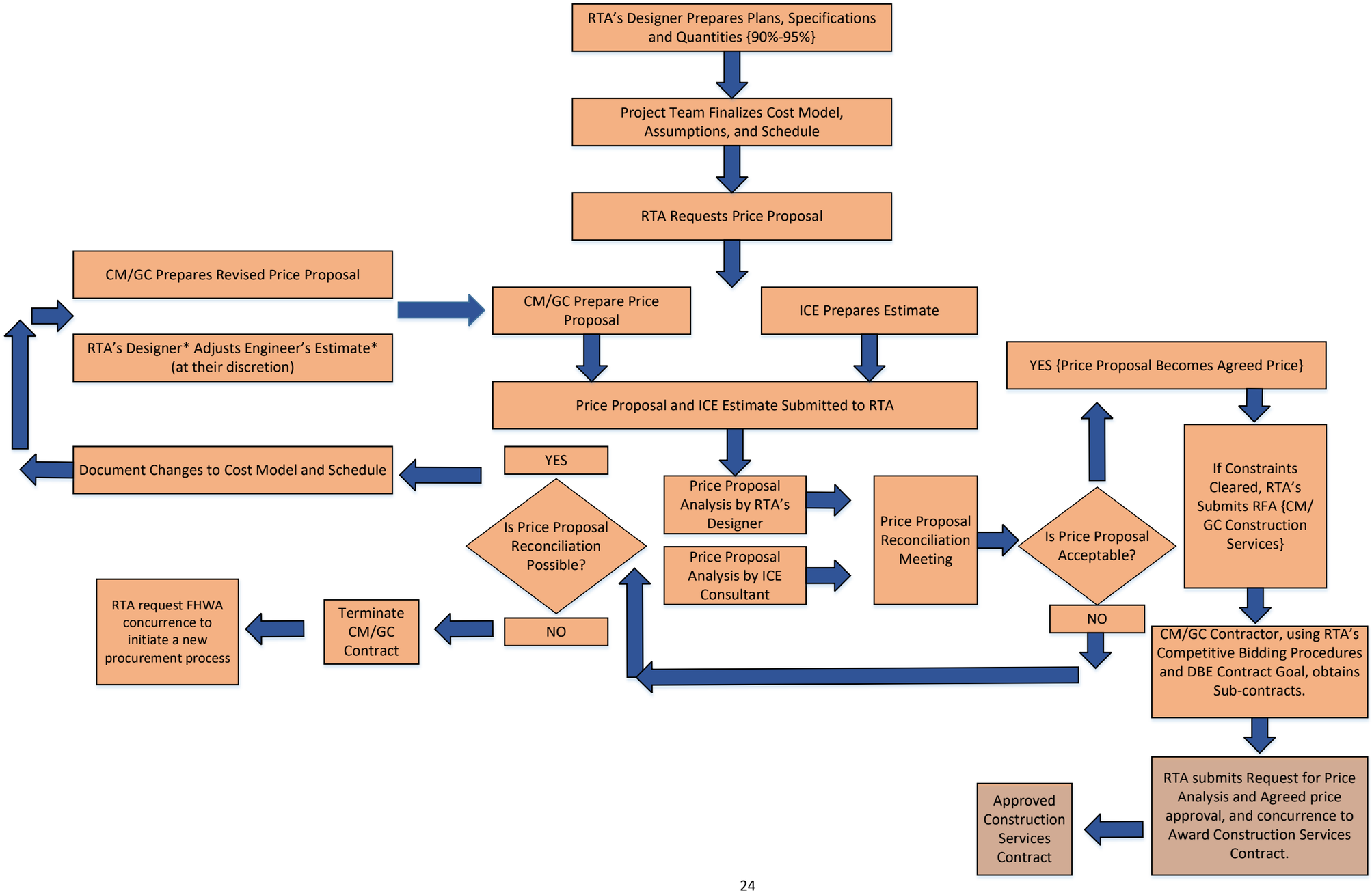
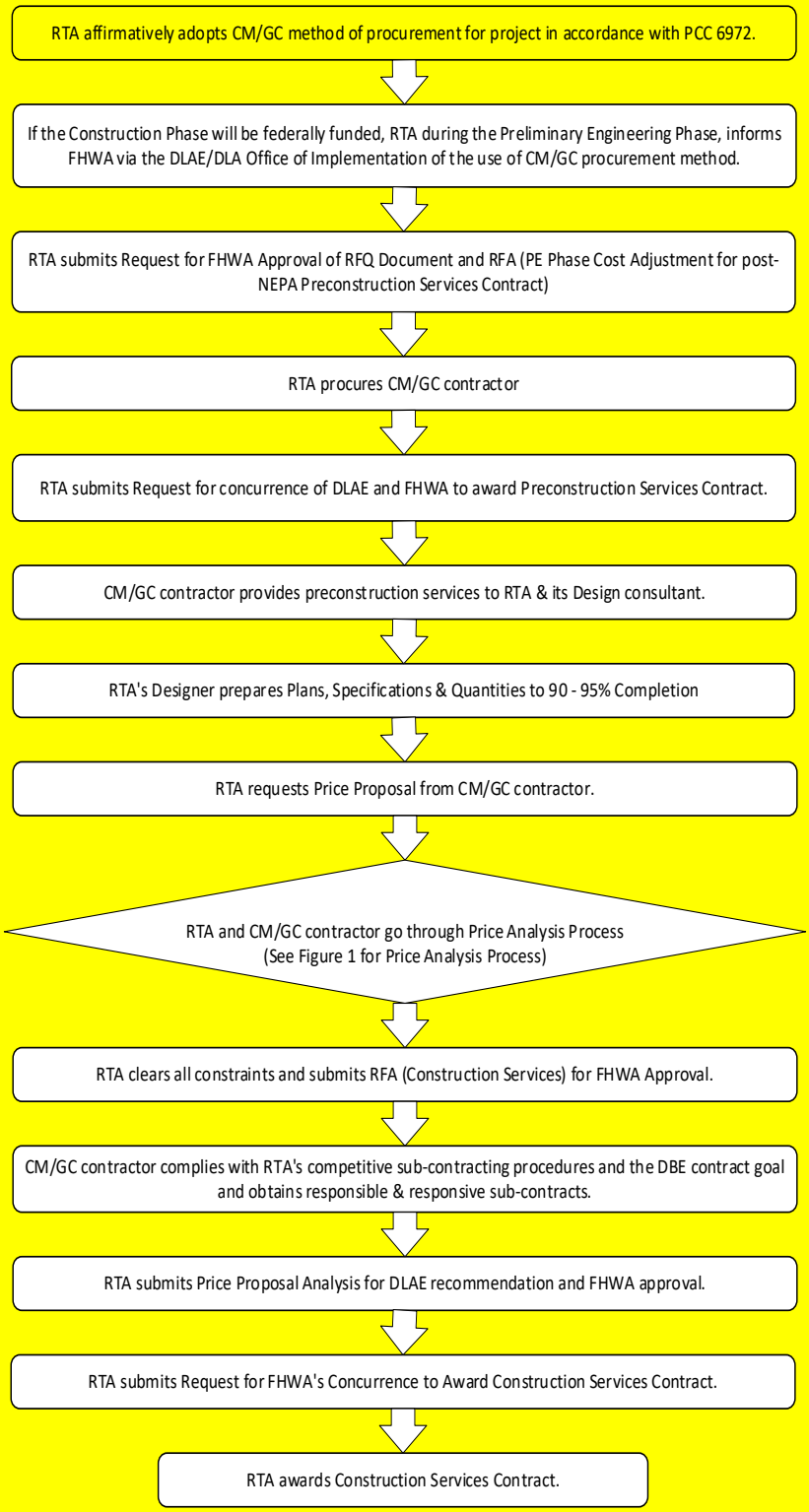


Figure 2 - CM/GC Process



Appendix A: Local Assistance CMGC Procedures for Selected Scenarios

All the following requests assume the presence of federal funds on the proposed CMGC project. Do not use if no federal fund is used. Note that FHWA's construction contracting requirements will apply to all CMGC construction contracts if any portion (including an early work package) of the CMGC construction contract is funded with Federal-aid funds.

1. Request for FHWA Authorization for post-NEPA Preconstruction Services and Approval for CMGC project

The Request must include the following RTA certifications and information:

a. Verification that the project is listed in PCC 6971.
b. A copy of evaluation of the traditional design-bid-build method versus the CMGC method of procurement for the project, and a copy of document that the RTA board has adopted the CMGC method of procurement for the project in a public meeting.
c. A copy of FHWA approved RFQ. RTA shall submit a RFQ to FHWA for approval through DLAE prior to request authorization to proceed.
d. A copy of approved NEPA document.
f. Indicate if the design is being done in-house or through an A&E Consultant firm and the percentage completion of design (PS&E).
g. Estimated substantial PS&E completion date by the RTA or its A&E Consultant.
h. Copy of approved FSTIP/FTIP documentation.
i. RTA's estimated costs of the post-NEPA preconstruction services. RTA must submit cost or price analysis for the preconstruction services procurement (including contract modifications) prior to request authorization to proceed with preconstruction services by the CMGC contractor to FHWA for approval.
j. Copy of approved Request for Authorization to Proceed with Preliminary Engineering (Exhibit 3-A).
k. Acknowledge that the RTA will need to obtain concurrence of DLAE and FHWA prior to awarding the preconstruction services contract to the CMGC contractor.

2. Request for FHWA Authorization for pre-NEPA Preconstruction Services for CMGC project

The Request must include the following RTA certifications and information:

a. Verification that the project is listed in PCC 6971.
b. A copy of evaluation of the traditional design-bid-build method versus the CMGC method of procurement for the project, and a copy of document that the RTA board has adopted the CMGC method of procurement for the project in a public meeting.
c. Indicate the type of NEPA environmental document being considered, the percentage completion of the NEPA environmental process, the anticipated date of NEPA approval, and if applicable, the estimated date of release of the NEPA draft environmental document to the public.

d. Indicate if the preliminary design & environmental studies are being done in-house or through an A&E Consultant firm.
e. Acknowledgement that the regional transportation agency will not begin final design until after NEPA approval. After NEPA approval and prior to executing an A&E consultant contract for final design, a modification to the PE Authorization is required. Funding for the final design must be programmed in the FSTIP/FTIP. Post-programming is not allowed.
f. A copy of FHWA approved RFQ. RTA must submit a RFQ to FHWA for approval through DLAE prior to request authorization to proceed. The RFQ must indicate that the RTA will unilaterally terminate the CMGC contract if the NEPA environmental process does not result in the selection of a build alternative.
g. The Solicitation Document (i.e. RFQ) must indicate that Construction Services will not be awarded until after NEPA approval of the entire Project and substantial PS&E completion of the entire Project or if FHWA approves, a segment of the entire Project. The RTA should provide an approximate timeline for NEPA approval and for substantial PS&E completion in its RFQ.
h. Copy of approved FSTIP/FTIP documentation.
i. RTA's estimated cost of the pre-NEPA pre-construction services. RTA must submit cost or price analysis for the preconstruction services procurement (including contract modifications) prior to request authorization to proceed with preconstruction services by the CMGC Contractor to FHWA for approval.
j. Copy of approved Request for Authorization to Proceed with Preliminary Engineering (Exhibit 3-A).
k. Acknowledge that the regional transportation agency will need to obtain E-76 approval from DLA OPI and FHWA prior to awarding the pre-NEPA preconstruction services contract to the CMGC contractor.

3. Request for Concurrence DLAE and FHWA to Award Post–NEPA Preconstruction Services

The Request must include the following:

a. Copy of the agreed price on the post-NEPA Preconstruction Services work.
b. A copy of approved NEPA document.
c. Scope of the preconstruction services.
   (1) Note that if RTA includes any field work in preconstruction services, federal wage rates will apply to this field work. Applicable federal wage rates would be those in effect 10 days prior to the agreed price.
d. Copy of approved Request for Authorization to Proceed with Preliminary Engineering (Exhibit 3-A) reflecting the negotiated cost of the post-NEPA preconstruction services.

4. Request for Concurrence of DLAE and FHWA to Award Pre–NEPA Preconstruction Services

The Request must include the following:

a. Copy of the agreed price on the preconstruction services work related to preliminary design & the environmental process.
b. Scope of the preconstruction services.
   (1) If RTA includes any field work in preconstruction services, federal wage rates will apply to this field work. Applicable federal wage rates would be those in effect 10 days prior to the agreed price.
   (2) Since this is prior to NEPA approval, the preconstruction services must not include any preconstruction services related to final design/PS&E.
c. Schedule for the preconstruction services.
   (1) Note that the schedule cannot go beyond the NEPA approval date.
d. Copy of approved Request for Authorization to Proceed with Preliminary Engineering (Exhibit 3-A) reflecting the negotiated cost of the pre-NEPA preconstruction services.
e. Acknowledgement that after NEPA environmental document approval the RTA will send an approval for Authorization of post-NEPA Preconstruction Services to the same CMGC Contractor.

5. Request for FHWA Authorization of CMGC Construction Services – Early Work Package

The Request must include the following:

a. The CMGC's price estimate for construction costs for the entire project, including early work package(s)
b. The agreed price for the early work package.
c. The scope of the early work package.
d. The schedule for the early work package.
e. The RTA's use of early work package notification including reasons for using the early work package.
f. Proposed DBE contract goal for the early work package.
g. Early Work Package number, even if RTA assumes that there will be only one early work package.
h. Federal wage rates from 10 days prior to agreed price date.
i. The RTA engineer's estimate and ICE estimate for the early work package.
j. The RTA's price analysis of the agreed price versus the RTA engineer's estimate or an independent cost estimate, concluding that the agreed price is reasonable. A price analysis is encouraged but not required for the procurement less than the simplified acquisition threshold in 2 CFR 200.88 ($150,000).
k. FSTIP/FTIP showing the Construction Phase for the entire project programmed.
l. Copy of approved Request for Authorization to Proceed with Preliminary Engineering (Exhibit 3-A).
m. NEPA document approval date & type.
   (1) Attach CE, or FONSI, or ROD.
n. Estimated substantial PS&E completion date by the RTA or its A&E Consultant.
o. R/W Clearance Memo on areas where the early work is proposed.
p. Utility Relocation Memo on areas where the early work is proposed.

q. Environmental Clearance Memo covering areas where the early work is proposed since any work being done must be in accordance with environmental permits.

6. Request for FHWA Authorization of CMGC Construction Services

The Request must include the following:

a. Signed and dated Exhibit 3-D (Request for Authorization to Proceed with Construction) from the LAPM.
b. Exhibit 3-E (Request for Authorization to Proceed Data Sheet(s)).
c. Copy of current FSTIP/FTIP Sheet showing the Construction Phase programmed in the year Construction (not including early work package) is to be authorized.
d. Copy of approved Request for Authorization to Proceed with Preliminary Engineering (Exhibit 3-A).
e. Type of NEPA document and date of approval.
   (1) Attach CE, or FONSI, or ROD.
f. DBE contract goal.
g. R/W Certification.
h. PS&E Certification (Exhibit 12-C) & DLAE accepted PS&E Checklist (Exhibit 12-D) with non-applicable portions struck through and initialed by the RTA's PS&E designer.
i. CTC Allocation information, if any.
j. If a value engineering was required, acknowledgement from the RTA that prior to the price estimate for Construction Services from the CMGC Contractor, the RTA's approved recommendations from the VE analysis were incorporated into the project plans & specifications.
k. Copy of a Price Analysis for the construction contract showing the scope, schedule or price for the construction of the CMGC project or a portion of the project (including early work package(s)). The price analysis must compare the agreed price with the ICE and RTA's EE. A price analysis is encouraged but not required for the procurement less than the simplified acquisition threshold in 2 CFR 200.88 ($150,000).
l. Federal wage rates from 10 days prior to the price estimate date.
m. Copy of the RTA engineer's cost estimate, ICE estimate and the RTA's price analysis document showing that the price estimate is reasonable.
n. Acknowledgement that the regional transportation agency will need to obtain FHWA's concurrence prior to awarding the Construction Services Contract.

7. Request for FHWA's Concurrence to Award Construction Services Contract

The Request must include the following:

a. Copy of the Price Analysis.
b. Construction Contract DBE Commitment (similar to Exhibit 15-G).
c. Good Faith Effort Statement of DBE Participation (similar to Exhibit 15-H) if the DBE Contract Goal is not met.
d. Federal Wage Rates.

e. Detail Estimate (Exhibition 15-M).
f. Finance Letter (Exhibition 3-O) reflecting the agreed price.
g. Resident Engineer's Construction Contract Administration Checklist (Exhibition 15-B)
h. Estimated construction completion date.
i. Acknowledgement that the RTA will provide three copies (or an e-mail attachment) of the executed contract between the CMGC Contractor and the RTA for construction services. Copies will be sent through the DLAE to FHWA.

Appendix B: Glossary of Preconstruction Services Term

Adapted from National Cooperative Highway Research Program Project 10-85 "A Guidebook for Construction Manager-at-Risk Contracting for Highway Projects"

Design-Related Preconstruction Services

Validate agency/consultant design – CMGC contractor evaluates the design as it is originally intended and compares it to the scope of work with both the required budget and schedule to determine if the scope can be executed within those constraints. A validated design is one that can be constructed within the budget and schedule constraints of the project.

Assist/input to agency/consultant design – CMGC contractor will offer ideas/cost information to the designer to be evaluated during the design phase. Ultimately, the designer is still responsible for the design.

Design reviews – CMGC Contractor reviews the plans and documents to identify errors, omissions, and ambiguities, to improve the constructability and economy of the design submittal.

Design charrettes – CMGC contractor participates in structured brain-storming sessions with the designer and RTA to generate ideas to solve design problems associated with the project.

Constructability reviews – CMGC contractor reviews the plans and specifications to determine if the required level of tools, methods, techniques, and technology are available to permit a competent and qualified construction contractor to build the project feature in question to the level of quality required by the contract.

Operability reviews – CMGC contractor meets with RTA's operations and maintenance personnel and provides them with an opportunity to make suggestions that will improve the operations and maintenance of the completed project.

Regulatory reviews – CMGC contractor verifies that the design complies with current codes and will not have difficulty obtaining the necessary permits.

Market surveys for design decisions – CMGC contractor furnishes designers with alternative materials or equipment along with current pricing data and availability to assist them in making informed design decisions early in the process to reduce the need to change the design late in the process resulting from budget or schedule considerations.

Verify/take-off quantities – CMGC contractor verifies the quantities generated by the designer for the engineer's estimate.

Assistance in shaping the scope of work – CMGC contractor generates priced alternatives from the RTA and its consultant to ensure that the scope of work collates to the constraints dictated by the budget and/or schedule.

Feasibility studies – CMGC contractor investigates the feasibility of possible solutions to resolve design issues on the project.

Risk identification and mitigation – CMGC contractor identifies risks associated with the project and proposes response strategies.

Maintenance of traffic – CMGC contractor reviews, validates, and/or proposes alternative traffic handling concepts for the project.

Staging needs – CMGC contractor reviews, validates, and/or proposes alternative stage construction concepts for the project.

Cost-Related Preconstruction Services

Validate agency/consultant estimates – CMGC contractor evaluates the estimate as it is originally intended and determines if the scope can be executed within the constraints of the budget.

Prepare project estimates – CMGC contractor provides real-time cost information on the project at different points in the design process to ensure that the project is staying within budget.

Cost/benefit engineering reviews – CMGC contractor reviews cost to include not only the aspects of pricing but also focuses on the aspect that "time equals money" in construction projects.

Early award of critical bid packages – CMGC contractor recommends which design packages should be completed first to ensure that pricing can be locked in on the packages.

Life-cycle cost analysis – CMGC contractor provides input for design decisions that impact the performance of the project over its lifespan.

Value analysis engineering – CMGC contractor identifies aspects of the design that either do not add value or whose value may be enhanced by changing them in some form or fashion. The change does not necessarily reduce the cost; it may actually decrease the life-cycle costs.

Material selection and cost forecasting – CMGC contractor utilizes its contacts within the industry to develop estimates of construction material escalation to assist the RTA and its consultants make decisions regarding material selection and early construction packages.

Cost risk analysis – CMGC contractor furnishes RTA with information regarding those cost items that have the greatest probability of being exceeded.

Cash flow projections/Cost control – CMGC contractor conducts earned value analysis to provide the RTA with information on how project financing must be made available to avoid delaying project progress. This also may include an estimate of construction carrying costs to aid the RTA in determining projected cash flow decisions.

Schedule-Related Preconstruction Services

Validate agency/consultant schedules – CMGC contractor evaluates if the current scope of work can be executed within the constraints of the schedule.

Prepare and manage project schedules – CMGC contractor prepares and maintains schedules throughout the design phase to ensure that dates will be met and notifies the RTA when issues arise.

Develop sequence of design work – CMGC contractor recommends the sequences of the design work to mirror the construction work so early work packages can be developed.

Construction phasing – CMGC contractor develops a construction phasing plan to facilitate construction progress and ensure maintenance of traffic. This includes identification of critical parcel acquisition and utility relocations.

Schedule risk analysis/control – CMGC contractor evaluates the risks inherent to design decisions regarding the schedule and offers alternative materials, means and/or methods to mitigate those risks.

Administrative-Related Preconstruction Services

Third-party impact avoidance and reduction strategies – CMGC contractor reviews agreements, permits, and work around (commitments) made to third parties (i.e., irrigation and flood control districts, adjacent cities, adjacent construction contracts, railroad, utilities, property owners, and regulatory agencies) and/or identify feasibility issues of commitments. Advises RTA of impacts and alternative solutions to comply.

Prepare document control – CMGC contractor implements a document control process and software solution, as agreed upon by RTA, that will allow for the efficient transmittal, sharing, tracking, approval, and filing of all project related documents.

Coordinate contract documents – CMGC contractor evaluates each component to the construction contract against all other components and identifies conflicts that can be resolved before award of the construction phase contract.

Coordinate with third-party stakeholders – CMGC contractor communicates with third parties involved in the project including, utilities, railroads, and the general public.

Attend public meetings – CMGC contractor assists the RTA in organizing and/or attends public meetings to answer questions from the public about the construction of the project.

Biddability reviews – CMGC contractor reviews the design documents to ensure that subcontractor work packages can be bid out and receive competitive pricing. This action reduces the risk to the subcontractors because they are given the specific design product they need for their bids; not just told to find their work inside the full set of construction documents.

Subcontractor bid packaging – CMGC contractor coordinates the design work packaging to directly correlate with subcontractor work packages so that early packages can be easily bid out and awarded.

Assist in right-of-way acquisition/validation – CMGC contractor assists the designer in identifying options for right-of-away acquisitions by providing means and methods input. The primary purpose is to minimize the amount of right-of-way actions that must be undertaken and to assist in prioritizing individual parcel acquisition.

Assist in permitting actions – CMGC contractor meets with resource agencies and develop permit applications with assistance from the RTA's designer.

Study labor availability/conditions – CMGC contractor furnishes advice during design regarding the availability of specialty trade subcontractors and the impact of that availability on the project budget and schedule constraints.

Prepare sustainability certification application –CMGC contractor prepares the necessary paperwork to submit for certification when certification for sustainability is desired.

Analyze Environmental Commitments/Permits – CMGC contractor reviews environmental commitments/permits attached to the project and identifies feasibility issues of commitments/permits. Advises Caltrans of impacts and alternative solutions to comply.

Coordinate site visits for subcontractors – CMGC contractor coordinates site visits for subcontractors to facilitate the subcontractor procurement process.

Project Meetings – CMGC contractor attends scheduled project meetings and contributes with comments, provides solutions, and carries needed action items.