

North Carolina Department of Transportation



REQUEST FOR QUALIFICATIONS

Includes

Addendum No. 1 – April 16, 2021

CONSTRUCTION MANAGER/GENERAL CONTRACTOR

Multiple Bridge Replacement along I-40

Haywood County, North Carolina

March 12, 2021

PURPOSE OF REQUEST

The purpose of this Request for Qualifications (RFQ) is to solicit Statements of Qualifications (SOQ) from Contractors interested in providing Construction Manager/General Contractor (CM/GC) pre-construction services for five bridge replacements along I-40 in Haywood County, herein after referred to as the “Project”.

Qualified, responsive CM/GC proposers will be ranked based on demonstrated competency and qualifications without consideration of the requirement to submit a CM/GC fixed-markup percentage. The CM/GC fixed-markup percentage will not be opened until the rankings are known. The Department will review the proposed fixed-markup percentages from the CM/GC proposers. If the most qualified CM/GC proposer’s proposed fixed-markup percentage is not reasonable, the Department reserves the right to negotiate an acceptable fixed-markup percentage prior to executing the Professional Services contract. If Department and the CM/GC proposer cannot successfully reach an agreement on a CM/GC fixed-markup percentage, the Department may terminate negotiations and begin negotiations with the next highest qualified CM/GC proposer. This consecutive negotiation process will continue in ranked order until a successful agreement is reached, or the process is terminated. A Professional Services contract will be prepared utilizing the Department’s current process for private consulting firms; however, typical professional engineering design liabilities will not apply.

Upon completion of the design, or individual design packages, the CM/GC Contractor and NCDOT negotiate an agreed upon price for the construction, and then the CM/GC Contractor acts as a general contractor to complete construction. The contract will employ a Construction Agreed Price (CAP) administered on a cost-reimbursable basis, with unit price and lump-sum items. If an acceptable price cannot be reached, the project will be advertised following the Department’s normal competitive bidding process and the Pre-construction Phase Professional Service contract will not be extended into the Construction Phase. The selected CM/GC contractor will be excluded from bidding on the construction project.

Once the Department has agreed to the schedule, scope, and cost for the Project or portion of the Project, a construction contract(s) will be executed, and construction shall begin while design continues on the other phase(s).

The following acronyms used in this document and are defined as shown below:

CM/GC	Construction Manager/General Contractor
Team	Project team made up from Contractor, Designer, NCDOT, and ICE
Contractor	Refers to the firm, partnership, joint venture, or other that is providing responses to this request for qualifications. Synonyms used in this document include Proposer or Firm.

Designer	Refers to the firm contracted by the NCDOT to develop the design documentation. Synonyms used in this document include Design Team.
NCDOT	North Carolina Department of Transportation. Synonyms used in this document include Department or State.
ICE	Independent Cost Estimator or the team responsible for developing the independent estimate.
RFQ	Request for Qualification
SOQ	Statement of Qualifications
LOI	Letter of Intent
DBE	Disadvantage Business Enterprise

It is not the intention of the NCDOT to receive project specific design or engineering recommendations in response to this RFQ. Proposers should limit their submittals to the information required by this RFQ, including qualifications and experience of the proposer.

To ensure that information is distributed equitably to all short-listed Contractors, all questions and requests for information shall be directed to the State Contract Officer through the e-mail address (designbuild@ncdot.gov). This precludes any Contractor member, or representative, from contacting representatives of the Department, other State or Federal Agencies either by phone, e-mail or in person concerning the CM/GC Project.

Proposer's attention is directed to the use of consulting engineer requirements in the Design-Build Policy and Procedures dated October 6, 2011. If a member of the proposer's team wishes to be granted an exception to this Policy, then that team member should submit a letter to the Department requesting an exception. The letter should be addressed and submitted to Mr. Ronald E. Davenport, Jr., PE, at the address given elsewhere in this document.

OVERVIEW

The Construction Manager / General Contractor (CM/GC) project delivery method will consist of a two-phased contracting approach. The pre-construction phase, the CM/GC, acting as construction manager, will provide services during planning, design, and estimating of the project. The Contractor will also work as part of an integrated team with the Department and its design team providing constructability support and incremental cost estimates in conjunction with design refinement; ultimately resulting in developing the schedule, scope, and cost to construct the project. The project teams focus will be to minimize risk, improve construction schedule, evaluate,

and implement innovative approaches to delivering the project, and maximize cost efficiency within budget. We anticipate that the Contractor's involvement will help reduce errors in design, improve constructability and meet budget goals. During the pre-construction phase, the Contractor works under a professional services agreement much like a design consultant and is paid for their services.

The project has been broken up into three phases in an attempt to expedite the design and construction:

- Phase 1: Bridge 430057
- Phase 2: Bridge 430171 and Bridge 430159
- Phase 3: Bridge 430124 and Bridge 430142

Subject to a successful negotiation with the Department, the Contractor will be awarded the construction phase. During the construction phase, the Contractor works as a general contractor to construct Phases 1, 2, and 3, of the project, as described above, in accordance with the 2018 Standard Specifications for Roads and Structures. Services shall include, but are not limited to, Construction Services for Phase 1, 2, and 3 – as described above.

Construction Engineering Inspection will be provided by the NCDOT Division personnel or will be performed under a separate contract.

The Section 404 Individual Permit and associated 401 Water Quality Certification Applications are anticipated to be submitted for Bridge No. 57 and No. 142 to the reviewing agencies no later than May 1, 2021 and August 1, 2022, respectively. The Section 404/401 Permits are anticipated no later than June 15, 2021 and November 1, 2022. The other three bridges do not require permits.

The permanent lane closure restrictions will be from May 21 to October 31 of each year of the project. The contractor would be permitted to have permanent lane closures from November 1 until May 20 of each year of the project. The project is expected to be completed by June 30, 2026.

PROCUREMENT TIMELINE

Procurement or other information will be maintained on the NCDOT Design-Build website. Any modifications to the procurement are subject to change without notice and will be communicated to each Proposer through the NCDOT Design-Build website.

STIPEND

No stipend fees.

SCOPE OF WORK*Pre-construction Phase*

Construction Services during the pre-construction phase shall include, but not be limited to the following items;

- (1) Design and Constructability Review – The Contractor will be expected to become an integrated part of the Design Team and provide input and feedback relating to constructability of the project as well as provide innovation to create greater value for the Department.
- (2) Risk Analysis and Mitigation – The Contractor will be expected to participate in regular risk reviews and multiple risk management workshops designed to identify and quantify risks associated with the project. The Contractor will be expected to work towards mitigating those risks that fall within its area of expertise.
- (3) Cost Estimating – The Contractor will estimate the quantities of materials, labor, and equipment needed to construct the Project. The Contractor will be required to prepare Opinions of Probable Construction Cost (OPCC) at various intervals throughout the pre-construction phase of the project. The Contractor will be required to utilize a “production-based” methodology in developing the OPCC. These opinions of cost will be compared to others prepared by the Department and the Independent Cost Estimator. The Contractor must be prepared to engage in an "open-book" discussion of the various components that make up its own opinion of cost.
- (4) Material Cost and Availability- The Contractor will be expected to identify the availability, cost, and lead times of materials, labor, and equipment.
- (5) Scheduling – The Contractor will be required to prepare construction schedules with each OPCC submittal that demonstrate the Contractor can deliver each phase within the timeframe. This will require the skills and knowledge to determine the tasks (work breakdown structure) needed to complete the Project and the duration, and sequence of these task.
- (6) The CM/GC contractor will be required to be available for virtual and / or in-person meetings, office or on site, through the duration of the preconstruction phase. The goal of the preconstruction portion of the project is for the Department and CM/GC contractor to arrive at a mutually agreeable opinion of probable construction cost and schedule, and to proceed with construction of the project.
- (7) If the Department determines that the Contractor is successful in helping the Department meet their project goals, the Department may request that the Contractor prepare “bids” for the Work. If so, the Contractor will prepare and submit bid documents per the project specifications and shall meet the requirements for Prequalification’s.

Confidential or Proprietary Information

During the pre-construction phase of the project, the Contractor will be expected to share pricing information that may be deemed proprietary in nature with the CM/GC Team. If desired, the Contractor may submit a request to NCDOT to hold such information private.

Construction Phase

Construction shall include, but not be limited to, all necessary work items for bridge construction, traffic control, geotechnical work, grading, roadway construction, drainage, utility coordination, erosion and sediment control, and other incidental items. Construction shall comply with an eventual construction contract which includes 2018 NCDOT Standard Specifications for Roads and Structures and all applicable special provisions and plans.

- General Items:
 - In addition to the items listed above the following items will be required for all Phases and throughout the duration of construction.
 1. Bridge and Roadway Construction
 2. Utility Construction / Coordination
 3. Construction Management
 4. Construction Surveying
 5. Agency Coordination
 6. Assistance preparing any necessary permit modifications required for construction phasing unaccounted for in initial permit.

PREQUALIFICATION REQUIREMENTS

The Proposers were required to be prequalified with the Department prior to submission of Letters of Interest, all Joint Ventures, LLCs, or any legal structure that is different than the existing prequalification status must be prequalified prior to the submittal deadline for the SOQ.

Subcontractors need only be prequalified prior to performing the work.

QUALIFICATIONS AND EXPERIENCE

The NCDOT will evaluate the Statements of Qualifications (SOQ) according to the criteria contained herein. Listed below are the required items to include in an SOQ from the proposing Contractor. Also noted is the maximum length and **SUGGESTED** page distribution of each item.

Item	Maximum Pages
A. Introductory Letter	2
B. Proposal Content	21
1. Project Understanding & Approach	
2. CM/GC Project Team	

3. Proposer's related Capabilities and Project Experience	
4. Approach to CM/GC Process	
5. Approach to Price	
6. Quality Program	
7. Safety Program	
C. Supportive Material (May include charts, graphs, photos, references, etc. provided maximum page limit is not exceeded.)	7
D. Work History Form (Complete the form attached or a facsimile thereof and include in the Statement of Qualifications)	10

Total**40 pages**

A page shall be 8½" x 11", except the organizational chart and project schedule may be on 11" x 17". Throughout the entire Statement of Qualifications, no specific font size or line spacing is required. However, all aspects of the Statement of Qualifications, including but not limited to the narrative, tables, charts, and graphics, should be clearly legible.

If dividers are used and contain specific project information they will be counted as pages.

Submissions exceeding the page limitations outlined above may be rejected and the Proposer will be notified in writing of the reason(s) for the rejection.

SOQ EVALUATION CRITERIA

SOQ will be evaluated in each of the following categories:

Evaluation Criteria for SOQs

Project Understanding and Approach	20
Contractor Team	15
Proposer's related Capabilities and Project Experience	20
Approach to CM/GC Process	15
Approach to Price	20
Quality Program	5
Safety Program	<u>5</u>
Maximum Score	100

The Department reserves the right to conduct interviews with the Proposers prior to award of Contract. The Selection Team may use optional oral interviews as an extension of the Proposal evaluation for clarification of the information provided in the SOQ or to obtain additional information from the Contractor.

The Proposers will be asked to reserve the following date for tentative interviews, April 26, 2021.

SUBMITTAL AND CONTENTS OF SOQ AND CM/GC FIXED MARKUP PERCENTAGE FORM

Statement of Qualifications and the CM/GC Fixed Markup Percentage Form located in Appendix D, shall be submitted separately, electronically. No Statement of Qualifications or CM/GC Fixed Markup Percentage Forms will be received after **4:00 p.m. Local Time on April 22th, 2021**. Proposers shall use the NCDOT File Transfer System (<https://fts.dot.state.nc.us>) to submit the Statement of Qualifications and CM/GC Fixed Markup Percentage Form located in Appendix D, electronically in separate pdf files to mmsample@ncdot.gov and drkennedy1@ncdot.gov by the deadline. Ms. Marsha Sample or Mr. Ken Kennedy, PE will send each Proposer an invite to NCDOT's FTS site with detail instructions.

If any team member, including an individual, or contractor, identified in the Statement of Qualifications changes, the Contractor shall immediately notify the Department in writing. The Team shall present to the Department the name of the individual, contractor and / or firm that will replace the entity that left the Team. The Department reserves the right to evaluate the new team member(s) and reject the proposed revision to the Team and / or reject the Team from further consideration during the selection process.

The following describes more specifically, the content of each part:

A. INTRODUCTORY LETTER

The introductory letter should be addressed to Mr. Ronald E. Davenport, Jr., PE and provide the following:

- An expression of interest in being selected for the Project.
- A statement detailing the legal structure of the Contractor and / or consortium of firms.
- A statement acknowledging that all prime contractor(s) (individually) are currently prequalified with NCDOT.
- A statement confirming the commitment of the key subcontractors and personnel included in the Statement of Qualifications and acknowledging that those identified in the Statement of Qualifications may only be replaced or removed through written Department approval.

B. EVALUATION CRITERIA

1. Project Understanding and Approach Primary Selection Criterion

This criterion relates to the Contractor's basic or preliminary understanding of the Project. Major elements of the design and construction process should be briefly addressed.

- Discuss any major issues, project risks and third-party risks, and associated conceptual solutions.
- Discuss any innovative concepts that may be employed in design or construction.
- Discuss the project-specific technical elements / challenges for each major construction operation.
- Provide a general schedule for the major project milestones, critical tasks and critical events. A graphical depiction, such as a bar chart, will suffice.

2. Contractor Team Primary Selection Criterion

This criterion relates to the Primary Proposer, the Project Managers, Key Staff and other members of the Contractor. Comment on how well each individual's qualifications, experience and time allocation relate to the Project.

- Identify the legal structure of the Contractor, and / or consortium of firms, submitting the Statement of Qualifications. Describe the business experience of the firm(s) as it relates to carrying out the Project.
- Describe the organizational structure of the Contractor, the management approach and how each team member fits into the structure. Include an Organizational Chart with ample specificity to document the personnel committed to the Project.
- Identify the individuals to serve in the roles outlined in (a) through (d) below. Briefly address these individuals' responsibilities and qualifications. In addition, provide a brief description of work experience for each individual:
 - a. CM/GC Project Manager - Identify the person (or persons) who (1) will be responsible for ensuring that adequate personnel and other resources are made available for the Project; (2) will handle contractual matters; and (3) will be ultimately responsible for the quality and timeliness of the Contractor. Discuss previous similar projects for which this person has performed a similar function.
 - b. Construction Project Manager - State who will actively manage the construction. Identify any projects that person will be involved with concurrently and time committed to each project. List recent similar projects for which this person has

performed a comparable function. Discuss relevant experience, professional registrations, education and other components of qualifications applicable to the Project. Individual must have at least 15 years of experience in the construction of similar projects.

- c. Environmental Compliance Manager - State who will ensure compliance with all Environmental Commitments to prevent any violation or failure to comply with all Environmental Approvals. List recent similar projects for which this person has performed a comparable function. Discuss relevant experience, professional registrations, education, and other components of qualifications applicable to the Project. Individual must have at least 15 years of experience in the construction of similar projects.
- d. Identify the lead estimator and scheduler and other members of the Contractor including subconsultants / subcontractors (firms) and other Key Staff (individuals) that will provide special expertise or will perform key tasks. At a minimum, the major construction superintendents should be identified. Describe their anticipated roles and responsibilities.

3. Proposer's Related Capabilities and Project Experience Primary Selection Criterion

This criterion relates to the Contractor's capabilities regarding the Project. All contractors are expected to have performed satisfactorily on previous projects.

- Provide a brief profile of the prime contractor(s) capabilities.
- Provide a brief profile for those construction subcontractors deemed by the Contractor to be the most pertinent to the Project.
- Describe the current workload for the prime contractor(s) identifying all projects currently under contract with a bid more than \$10 million. It is recommended that this discussion include a reference to current workload versus capacity, as well as the percent complete for all projects. A table of projects will suffice, and it is recommended, but not required, that this information be provided in the Supportive Materials Section.
- List projects (completed over the last five years) that have resulted in the assessment of liquidated damages against any major participant for a delay in the substantial or final completion of a project. If projects (completed over the last five years) include schedule delays, identify these delays and address how the Contractor will alleviate similar issues on the Project. Furnish examples of projects in which the major participants have completed their tasks ahead of schedule, including an explanation of how this was accomplished. Describe the Contractor's internal procedures for developing, monitoring, and maintaining project schedules.
- List all project / construction related Notice of Violations (NOVs) or their equivalent received by any team member within the last five years on projects in the United States and the

disposition of each listed NOV. Explain the Contractor's approach to environmental responsibilities and permit compliance.

- Indicate the anticipated activities that the prime contractor(s) will self-perform to accomplish a minimum of 40% of the work as specified in Section 108-6 of the 2018 NCDOT Standard Specifications for Roads and Structures.
- Indicate the resources that will be made available, and from what source, to complete the Project. Demonstrate that appropriate resources will be committed to perform the work. Describe any equipment or other resources the Contractor has which will enhance their ability to accomplish the Project.
- Discuss methods that the Contractor has in place for addressing claims and contract modifications. For projects (completed over the last five years), describe total project costs and the total value of change orders. If recent projects (completed over the last five years) include verified claims, identify these verified claims, and address how the Team will alleviate similar issues on the Project. Furnish examples of similar projects in which the major participants have completed their tasks below budget, including an explanation of how this was accomplished.
- The Contractor shall complete the Work History Form provided. This form requires the Contractor to list minimum of five projects **completed** within the last eight years individually for the prime contractor(s) with a brief description of each project. A reference shall be included for each project listed. At a minimum, all references shall include an individual's name and current telephone number.
- Discuss the Contractor's recent relevant experience. Projects listed should be similar in nature to the Project (i.e.: Design-Build, Progressive Design-Build, Construction Manager/General Contractor...) and, to the extent possible, involve team members proposed for the Project. Projects discussed in this portion of the Statement of Qualifications may expand on those projects listed in the Work History Form or may provide a discussion on other relevant projects.
- Describe any notable expertise, increase in capacity or other special capabilities of the team members that are unique and / or critical to the Contractor's Statement of Qualifications.
- Describe the Contractor's approach to including MB/WB subcontractors as part of the Team. Detail how this plan will be implemented and monitored throughout the life of the Project.

4. Approach to CM/GC Process

Primary Selection Criterion

This criterion relates to the Contractor's approach to the pre-construction phase of the Project. Supporting the CM/GC process and the Project goals is critical to the CM/GC Team's success. In the Approach to the Project some responses may have been provided to this issue. This section is an opportunity to provide additional clarity.

- During preconstruction and construction activities explain the method to identify, price, and mitigate risk through a formalized risk management process, see under *Project Key Issues*.

- Describe means and methods that will be used to support the design development and decision-making process in both the pre-construction and construction phases of the Project. How will the proposed processes help NCDOT decide which suggestions to use, and how will the benefits and cost savings of CM/GC be documented.
- Describe specific innovations to the CM/GC process proposed for this Project that may further improve reaching Project goals.
- Discuss how to collaboratively integrate and optimize the construction schedule with the design schedule, outside constraints, and the overall controlling program management schedule. Address the schedule updates process throughout pre-construction and construction. How to help the Team maintain a master schedule that is realistic and achievable? Address acceleration and recovery as well as impacts from outside parties.

5. Approach to Price

Primary Selection Criterion

This criterion relates to the Contractor's approach to estimating the cost of the project and openness to take part in an open book atmosphere. Because this is a qualifications-based selection, this section is intended to be a narrative discussion relating to the Contractor's approach to price.

Proposers are required to complete and submit Appendix D, CM/GC Fixed Markup Percentage Form. Appendix D is not included in the 40-page limit of the SOQ.

The narrative response to the Approach to Price shall consist of a narrative summarizing the approach to the price topics listed in Appendix C. Also address the following:

- Risks that would increase the unit prices,
- Mitigation that would decrease risk and lower cost,
- Actions undertaken by the Contractor during pre-construction to identify and minimize risk,
- Effect of schedules on costs,
- Effect of work by others such as utilities at the Project site.

6. Quality Program

Secondary Selection Criterion

This criterion relates to the Contractor's quality management capabilities.

- Describe the qualifications of the Contractor's Quality Manager.
- Describe any significant material and / or construction quality control issues experienced on projects in the last five (5) years and the measures taken to ensure similar issues will not impact the Project.
- Identify the prime contractor's policies and / or procedures for quality control in pre-construction and construction phases.
- Describe the Contractor's control measures that ensure the quality of subcontractors, suppliers, and producers.

7. Safety Program**Secondary Selection Criterion**

This criterion relates to the Contractor's safety program.

- Describe the qualifications of the Contractor's Safety Officer.
- List the Contractor's experience modification rate for the three (3) most recent years. It is recommended, although not required, that this information be provided in the Supportive Materials Section.
- Provide a brief overview of the Contractor's safety program, including orientation programs, if any.
- Provide documentation of the past five (5) year safety record on all construction projects (i.e. OSHA citations - list circumstances and outcome, etc.). It is recommended, although not required, that this information be provided in the Supportive Materials Section.

DISADVANTAGED BUSINESS ENTERPRISES

The NCDOT is committed to complying with the North Carolina General Statute 136-28.4 with respect to disadvantaged minority-owned and women-owned business enterprises (MBE and WBE) for state funded projects and supporting Disadvantaged Business Enterprise (DBE) firms on federally funded projects. The Contractor shall identify opportunities for DBE Contractors to participate in all awarded construction work. DBE construction goals will be set forth in all construction contracts for this project.

GENERAL INFORMATION AND RESERVATIONS

The NCDOT reserves the right, at its sole discretion, to either proceed no further with the Project procurement process or to re-advertise in another public solicitation.

The NCDOT assumes no liability and will not reimburse costs incurred by firms (whether selected or not) in developing responses to this RFQ.

The NCDOT will not be bound by oral explanations or instructions given at any time during the procurement process or after award. Only information that is received in response to this RFQ will be evaluated; references to information previously submitted will not suffice as a response to this solicitation.

The NCDOT reserves the right to request or obtain additional information about any and all responses to this RFQ. NCDOT may also issue addenda to this RFQ which will be e-mailed to all RFQ holders and posted on the Design-Build Website.

The approach to bonding will be based on the risk associated with each phase of construction. It is anticipated the bond amount will increase as the project progresses with higher risk activities.

Completed activities and associated risk will be considered when calculating a required bond amount and reducing bond amounts. Due to the potential to have multiple high-risk areas of work under contract at one time, the proposer should demonstrate the ability to provide construction bonding up to \$70 million.

A proposer can only appear as a prime in one Statement of Qualifications for the Project. Proposers are encouraged to familiarize themselves with the North Carolina Public Records Act, North Carolina General Statute § 132-1 et seq. In the event the Proposer submits any documents which the Proposer believes are not subject to disclosure pursuant to the aforementioned Act, it must conspicuously mark each document “CONFIDENTIAL” or “CONFIDENTIAL TRADE SECRETS”. All unmarked pages will be subject to release in accordance with the North Carolina Public Records Act. Proposers should be prepared, upon request, to provide justification of why any or all marked materials should not be disclosed under the aforementioned Act.

All questions must be directed to Mr. Ronald E. Davenport, Jr., PE via the Design-Build e-mail address at designbuild@ncdot.gov. For tracking purposes, questions will **only** be answered through e-mail requests.

CONTRACT TIME AND LIQUIDATED DAMAGES

Date of availability, completion date and liquidated damages for each phase of the project will be determined prior to NCDOT’s acceptance of the CAP and before the Contractor enters into the Construction Phase of the Contract. The overall completion date for all phases proposed shall not be later than **June 30, 2026**.

WORK HISTORY FORM

Work by firms or joint-venture members which best illustrates current qualifications relevant to this project. List projects, completed in the last eight years. Minimum of five projects shall be listed for the prime contractor(s).					
a. Contractor's Name, Project Name & Location	b. Nature of Contractor's Responsibility	c. Project Owner's Name & Address and Project Manager's Name & Phone Number/E-mail	d. Completion Date	e. Estimated Cost (In Millions)	
				Entire Project	Work for which contractor was responsible
(1)					
(2)					

(3)					
(4)					
5)					
(6)					

(7)					
(8)					
(9)					
(10)					

Appendix A – Project Information

Project Key Issues

NCDOT has identified the following key issues to be addressed during Project execution.

Schedule Issues

Project stakeholders have dictated a deadline of **June 30, 2026**, to finish the construction of five (5) bridges. The Contractor shall be responsible for timely completion by continuous vigorous prosecution of the Work; however, the Contractor will have flexibility in proposing a construction schedule that maximizes value to the Project, taking into consideration the desired completion date, limiting impacts to the public, materials availability, Project access, and the Contractor's selected means, methods, and approach to the Work.

Geotechnical Key Issues

Subsurface and geotechnical information at the project site is limited; however it is known that the sites may contain a significant amount of rock. NCDOT is currently planning for more extensive geotechnical program for the site that will be carried out throughout the pre-construction phase of the project. The Contractor should be prepared to advise NCDOT on the extents and types of geotechnical information that would be desirable to obtain and to provide input to the geotechnical program work plan.

Design Key Issues

The design is currently being progressed to a conceptual level by a designer selected by NCDOT. The concept design will be progressed to final design and construction documentation. The contractor should identify areas of concern that need to be addressed during the design development process.

Innovation Key Issues

NCDOT welcomes innovation during design development and construction. Innovative concepts relating to design and construction should guide by the following principles:

- Provide a Project that fits within the available Project funding.
- Provide a Project that delivers key elements on time.

Construction Sequencing Key Issues

Bridge construction sequencing should minimize lane closure times to mitigate impacts to the corridor. Accelerated methods will be considered but the project will also balance those construction methods and details with others to enhance durability and minimize long-term maintenance.

Construction phasing will also be affected by possible utility relocation activities. Coordination and construction sequencing to minimize impacts from utility relocation work may be required.

Specific attention and construction detailing shall be used for drainage structures and roadway embankments that are located within 100-year floodplains. Trout Moratoriums have been identified for two of the bridges and active work will not be allowed in streams during this time.

Project Technical Information

NCDOT and the Design Team will follow the NCDOT design process and will follow standard NCDOT design standards and specifications.

Implementation Strategies and Scope of Work

NCDOT has identified the following implementation strategies to ensure that Project goals are achieved. The Contractor may identify and propose additional implementation strategies during the proposal phase, the pre-construction services phase, or the construction services phase. An example scope of work for both pre-construction and construction services is presented in Appendix A – Attachment 1.

Scheduling and Project Controls

The Contractor shall be required to control his work by use of a construction schedule and will have to periodically supply updates to the schedule. This requirement applies to both the pre-construction and construction services phases of the Work.

Risk Analysis and Mitigation

In general, NCDOT expects that, as design, cost estimating, constructability reviews, and other pre-construction activities progress, risks and unknowns will be reduced by successfully implementing mitigation strategies in order to reduce both Project costs and Project contingencies.

Throughout the Project development, NCDOT plans to implement active risk management as a collaborative process for NCDOT, the program management team, the design team, and the General Contractor to assess risks, opportunities, and benefits while controlling the Project's cost and schedule.

Through active risk management, the goal for the four parties is to achieve the following:

- Pro-activity and early planning;
- Developing credible Project plans and estimates;
- Developing targeted mitigation strategies for all anticipated threats; and
- Ensuring transparency, integrity, and accountability throughout the life-cycle of the Project.

Cost-Estimating Model, Opinions of Probable Construction Cost, Contingency, and Construction Agreed Price

The Contractor may choose his own format for the cost-estimating model provided that the required level of detail and transparency of calculation and rollup are achieved as required in the instructions and forms in Appendices C and D.

The Contractor shall provide successively refined OPCCs during pre-construction. Each OPCC shall be:

- Comprehensive for the entire Project or portion of the project under consideration,
- Presented in the approved cost-estimating model format,
- Inclusive of all direct costs and allowable field indirect costs as described in Appendix C,
- Exclusive of home office overhead and profit, which shall be presented separately as fixed markup percentage in accordance with Appendices C and D,
- Exclusive of contingency, which shall be established using the results of the risk analysis and mitigation process,
- Based on milestone design drawing packages delivered by the Designer,
- Accompanied by a brief narrative that discusses significant changes since the last OPCC and remaining significant unknowns that may affect the OPCC.

The Contractor shall participate in a design review for each milestone design submittal to discuss design development and design changes as well as the cost and constructability impacts of the design.

At an agreed design milestone, the Contractor shall prepare a Proposal for executing the Project at a Construction Agreed Price (CAP). The CAP is the sum of the Total Construction Costs with the applied fixed fee. The fixed fee is a fixed percentage of the total construction cost of the construction services under the CM/GC Contract. See Appendix C for details on the CAP Proposal and contracting process. See Appendix D for further details on the fixed markup percentage. See Appendix C for the process of negotiating and awarding a construction Contract using the CAP as a basis for compensation.

The contingency amount shall be established using results of the risk analysis and mitigation process. Control of the contingency shall be established in negotiation with the Contractor and NCDOT as part of the CAP negotiation.

Availability Requirements

The CM/GC contractor will be required to be available for virtual and / or in-person meetings, office or on site, through the duration of the preconstruction phase. The goal of the preconstruction portion of the project is for the Department and CM/GC contractor to arrive at a mutually agreeable opinion of probable construction cost and schedule, and to proceed with construction of the project.

Constructability Reviews

The Contractor will be expected to advise the Project team on cost issues and concerns, provide over-the-shoulder reviews of specific design elements or details as requested, and provide constructability reviews throughout the design process.

Appendix A – Attachment 1**Overview**

An example scope of work for both pre-construction and construction services is presented below. The actual scope of work will be negotiated prior to the award for each phase of the Project.

Example Scope of Pre-Construction Services

The objective of pre-construction and associated tasks is to create a teaming atmosphere that will allow NCDOT and the Contractor to work jointly to deliver the highest-quality Project within the budget as determined by NCDOT. As part of the design team, the Contractor will provide input on schedule, phasing, constructability, materials availability, cost, etc. throughout the design. Pre-construction tasks to be performed by the Contractor may include:

1. Provide a Project Manager and associated staff to consult with, advise, assist, and provide recommendations to NCDOT and the design team on all aspects of the planning, design, any necessary permit modifications, and proposed construction, as requested by NCDOT.
2. Participate and attend a Project kick-off meeting at a site to be determined by NCDOT, that will follow the following general agenda:
 - Introduction to the Project and the Project stakeholders
 - Project status, goals, objectives, funding, etc.
 - Presentation of Project elements
 - Presentation of Project schedule
 - Preliminary discussion of major risk factors
 - Question-and-answer session
3. Participate in the Project meetings. The meetings will take place during the length of this Contract as further defined by NCDOT. The parties involved in the performance of the Project, including NCDOT, the NCDOT-selected private engineering firm, and CM/GC should establish routine scheduled meetings to establish open lines of communication.
4. Provide constructability and material availability reviews, along with written reports and recommendations, of the conceptual drawings being prepared by the NCDOT-selected private engineering firm.
5. Participate in formal constructability and material availability reviews that will be conducted at various milestones for the entire Project limits. These formal reviews will focus on identifying revisions to improve clarity for bidding, identifying potential design revisions that would reduce construction costs, and identifying elements to improve the time performance for the Project.
6. Submit written comments and recommendations to NCDOT regarding the development of the construction plans. These comments and recommendations shall address proposed construction staging and phasing; the need for field offices and parking requirements during construction; construction equipment storage and laydown yards; use of public roads and detour routes; coordination with utility owners surrounding disruptions and relocations; methodology for protection of properties during construction; techniques for mitigating dirt and debris during construction; process to address known hazardous material and remediation measures; means to address storm water management; treatment of temporary facilities and traffic management; measures to address noise, dust, and vibration during construction; proposed work hour schedule (including number of shifts

- and weekends); methodology to provide public and worker safety protection; and procedures to maintain Project security during construction.
7. Submit a report identifying materials that may be cost-effectively recycled during construction, including a cost estimate of potential cost increases or decreases from the baseline estimate.
 8. Identify any long lead items that may cause schedule impacts. A list of long lead items requiring early design consideration shall be submitted to NCDOT for consideration so that the Project schedule is not negatively impacted.
 9. Establish an ongoing risk analysis program to identify various at risk Project elements, and develop various strategies and/or mitigation measures that will lead to reduced risk severity. It is anticipated that this task will include a number of one-day workshops or meetings during the design phase of the Project between NCDOT, the Contractor, the NCDOT-selected private engineering firm, and relevant stakeholders along the Project corridor.

The Contractor shall identify work that the Contractor proposes to self-perform and shall identify how the Contractor will ensure that the pricing of self-performed work will be the most advantageous to NCDOT. The Contractor shall identify the plan to manage any subcontract that is not performing in accordance with the Project's requirements for budget control, on-time schedule performance, safety, or quality control procedures. The Contractor shall identify a proposed management plan to oversee all subcontracting work efforts.

The following subcontracting terms and conditions shall apply to the Contractor during the preparation of the contracting plans:

- a. The Contractor shall give advance written notification to NCDOT of any proposed subconsulting agreement or subcontract negotiated under the Contract. NCDOT shall have the right to approve all subcontract agreements and subconsulting agreements, including any change or amendment to any agreements.
 - b. No change, removal, or substitution shall be made in any of the subcontractor or subconsulting agreements without prior written approval from NCDOT.
 - c. NCDOT shall have no liability to any subcontractor for payment for services under the Contract or any other work performed for the Contractor by any subcontractor or subconsultant. For any subcontract entered into by the Contractor under the Contract, responsibility for payment to the subcontractors or subconsultants as well as any other work performed by a subcontractor or subconsultant shall be the sole responsibility of the Contractor.
 - d. All subcontract agreements shall comply with Federal, State, and local laws and regulations, including the regulations and requirements of NCDOT.
10. As part of the ongoing cost estimating for the Project, the Contractor shall prepare and submit an Opinion of Probable Construction Cost (OPCC) at various stages of design. The determination of when an OPCC shall be prepared is at the discretion of NCDOT and shall be in a written format that identifies the risks and assumptions that will be utilized when preparing the OPCC.

On completion of the final OPCC, at an agreed design milestone, a Construction Agreed Price (CAP) shall be prepared by the Contractor. If the CAP appears to be exceeding NCDOT's established construction budget, NCDOT shall notify the Contractor accordingly and shall give the Contractor an opportunity to propose how to complete the Work within budget. If NCDOT and the Contractor cannot agree on a CAP, NCDOT reserves the right to terminate the Contract and procure the Work in an alternative manner, as NCDOT deems appropriate.

11. Prior to development of the CAP, the Contractor shall prepare a detailed Schedule to serve as the Project Baseline Schedule, which identifies all activities and progress payment processing during construction.

The Contractor shall help NCDOT coordinate with any Project stakeholders on an as-needed basis. The Contractor will not be delegated the authority to act on NCDOT's behalf with a Project stakeholder. However, the Contractor will be considered to be a member of NCDOT's Project team and will be requested to be a part of coordination meetings with the various Project stakeholders.

The Contractor shall support NCDOT in developing of agreements with utility owners and other Project stakeholders, as necessary.

The Contractor shall collect detailed information required to create the plans identified in the following list:

- a. Prepare and submit a Safety Plan in compliance with NCDOT's safety program.
- b. Prepare and submit an Environmental Compliance Plan (ECP) that identifies how environmental compliance will be achieved during construction as well as any mitigation measure to be implemented.
- c. Develop, implement, and maintain a Quality Control Plan that assures equipment and material conformance to the applicable requirements of every section of the specifications. The Quality Control Plan shall focus on providing continuing attention to producing and installing error-free work that complies with the Contract. The Quality Control Plan shall include, at a minimum, provisions for continued education and training, toolbox meetings, various meetings with subcontractors and suppliers, and other activities designed to accomplish the following:
 - Emphasize the importance of high-quality work,
 - Stress the concept that quality is best achieved during initial installation of the Work,
 - Enhance the exchange of technical and other information pertaining to quality throughout the Contractor's organization; and
 - Eliminate non-complying work requiring rework or replacement.

The Quality Control Plan shall include the Contractor assuring the quality of the work of the subcontractors at all levels.

NCDOT will be responsible for quality control inspection and material sampling and testing for acceptance of the work per the 2018 NCDOT Standard Specifications for Roads and Structures.

- d. Prepare and submit a Hazardous Material Plan (HMP) that identifies how anticipated and unanticipated hazardous materials will be handled during construction. Also address appropriate mitigation measures.
12. The Contractor shall support NCDOT's public communication and outreach program throughout pre-construction. The Contractor will be required to work with NCDOT's Project Team to provide appropriate information and updates relating to the anticipated construction schedule.

Example Scope of Construction Services

Upon completion of the services listed above under the Scope of Pre-Construction Services and NCDOT's acceptance of a CAP, the Contractor may be requested to enter into the Construction Phase of the Contract. The tasks listed below are a representative list of tasks that may be requested of the Contractor. This list is not exhaustive, and tasks may be added or deleted during the negotiations of the Construction Phase Services scope of work and CAP. **Prices for these services will be included in the final, negotiated Contract as part of the final CAP.**

1. Hold a pre-construction conference prior to beginning any construction work on the Project.
2. Conduct weekly progress meetings with NCDOT. Prepare and distribute minutes of each meeting.
3. Obtain and / or comply with all necessary construction permits needed for the completion of the Project.
4. Finalize a Schedule for the Project. Maintain and update the schedule on a monthly basis to monitor Project progress, manage all construction work effort, establish a progress payment and tracking system, and keep NCDOT fully advised of the work status through submission of a monthly progress report that identifies any delays or impacts to the Schedule. Prepare for NCDOT review, a weekly 4-week look-ahead work schedule that is consistent with the overall Schedule.
5. Maintain current, hard and /or electronic copies of all as-built drawings, including all subcontracted work, and submit as-built information to NCDOT in hard copy and /or electronic formats. All CADD and electronic work effort shall be included as part of the CAP.
6. Implement and maintain a Traffic Management Plan (TMP) in accordance with the approved plans. The goals of the TMP will be to keep roads open to traffic during the Work and to provide and maintain detour roads as specified in approved plans.
7. Support NCDOT's public outreach program during Construction by working with NCDOT's Public Information Officers and providing regular and timely Project updates to the schedule and necessary construction notification as needed.

8. Maintain, protect, and implement an effective public and worker safety program in accordance with the Safety Plan developed during Pre-Construction. This program shall be enforced until Final Acceptance of Project.
9. Implement the effective environmental compliance and mitigation measures in accordance with the Environmental Compliance Plan (ECP) developed during Pre-Construction.
10. Implement an effective quality management program for all construction work in accordance with the approved erosion control plans developed during Pre-Construction.
11. Implement an effective hazardous material handling program for all construction work in accordance with the Hazardous Material Plan (HMP) developed during Pre-Construction.
12. Implement measures to manage storm water runoff and dust during construction in accordance with the plans developed during Pre-Construction and in accordance with local jurisdictional requirements.
13. Condition of Final Acceptance of Project will include the following:
 - a. Complete all construction work for a price not to exceed the established CAP.
 - b. Assist NCDOT by preparing a Post-Construction Analysis Report. The Post-Construction Analysis will detail the changes in the project attributable to the CM/GC process as outlined in NCDOT's Guidelines for Awarding CM/GC Projects.

Appendix B – CM/GC Process for Construction

(Process Description)

Construction Contractor

The selected Contractor will be awarded a Contract, prepared and administered by NCDOT. The cost of the Contract will be based upon negotiated unit rates for key personnel and support staff identified on the Project team that will participate on the Project. The requirements will be identified in the Contract (further outlined in Appendix C). These requirements can include, but are not limited to:

- Constructability Reviews of the Design.
- Assistance in shaping the Project scope of work to the available budget.
- Assistance in improving Project schedule.
- Provide detailed cost estimates and cost estimate breakdowns of elements of the Work as the design is developed using open-book methods.
- Design reviews to ensure that the package is complete and without ambiguity.
- Finding design errors.

Contractor Submits Bid for Project (Early Construction Contract)

If time and/or money can be saved by allowing the Contractor to start initial work prior to the completion of the total design package, the Department may ask the Contractor to prepare a lump sum or unit cost bid for all or a portion of the Work.

If the Department elects to use this contracting option, it proceeds as follows:

- Early mobilization and clearing work shall start immediately after award of contract.
- The Department and the Contractor will agree upon a scope of work to accomplish in this phase of the Contract. The agreement may take the form of a set of plans or it may consist of something less formal such as sketches, drawings, or written descriptions. Both parties must agree that the scope of work is clear and unambiguous.
- The Contractor will prepare a “bid” to perform the agreed to scope of work. The bid will be based on the estimating model and the most recent OPCC for the agreed scope of work.
- The Contractor will submit the “bid” to NCDOT. The Department will secure an independent cost estimate for the Work. Upon opening the Contractor’s “bid” the Department will determine the acceptability of the “bid” by comparing it to the independent cost estimate and the engineers estimate.
- The Department personnel reviewing these costs may include: the Project manager, members of the design team, the resident engineer, an estimating consultant if hired, and staff from Technical Services.
- If the prices are acceptable, the Department will prepare a construction Contract for this portion of the Work. If a previous construction Contract had been entered into, a separate

Contract may be prepared, or the work may be added to that Contract by change order or supplemental agreement at the discretion of NCDOT.

- If the prices are not acceptable, the Department may enter into negotiations with the Contractor. NCDOT has the option to accept a negotiated price or to terminate the CM/GC process and procure the construction Project by some other method.

Contractor Submits “Bid” for Project (Design is Complete)

When the Department, the designer, and the Contractor agree that the Project has been designed to a sufficient level of detail to allow the Contractor to accurately bid the Project, the following procedure will be used:

- The designer will produce a set of plans and specifications showing all work to be accomplished. The plans will also show all work accomplished under any previous Early Construction packages.
- The Contractor will prepare a “bid” to perform the work shown. The bid will be based on the estimating model and the most recent OPCC for the agreed scope of work and to the greatest level of detail available at the time.
- The Contractor will submit the “bid” to NCDOT. The Department will secure an independent cost estimate for the Work. Upon opening the Contractor’s “bid” the Department will determine the acceptability of the “bid” by comparing it to the independent cost estimate.
- The Department personnel reviewing these costs may include: the Project manager, members of the design team, the resident engineer, an estimating consultant if hired, and staff from Technical Services.
- If the prices are acceptable, the Department will prepare a construction Contract. If a previous construction Contract had been entered into, a separate contract may be prepared, or the work may be added to that Contract by change order or supplemental agreement at the discretion of NCDOT.
- If the prices are not acceptable, the Department may enter into negotiations with the Contractor. NCDOT has the option to accept a negotiated price or to terminate the CM/GC process and procure the construction Project by some other method.

Contractor Builds Project

- From this point forward, the work proceeds in the same manner as a design-bid-build project as per the negotiated contract.

Appendix C – Approach to Price Proposal

Introduction

The following appendix provides background information explaining the approach to price that NCDOT anticipates using throughout the pre-construction phase of the project.

Total Construction Cost Elements

The overall cost of the project, or portions of the project, may be made up from the following categories:

1. Direct Cost
2. Indirect Cost
3. Contingency for risk allocated to the Contractor

Direct Costs

Direct Cost is defined as the total of all direct cost for field construction to complete the Project. These costs include loaded labor, permanent materials, construction materials, equipment, and subcontracted work.

Since this is a negotiated Construction Agreed Price (CAP) Contract, direct costs of the Bid Items shall not include:

- Any contingencies
- Field indirect
- The Contractor's profit and home office overhead

Indirect Costs

Indirect Cost is defined as the total of all cost for contractor's onsite overhead to support the field construction. The list below shows an example breakdown of indirect cost categories that are acceptable to NCDOT. However, it is also acceptable to use the Contractor's own customary indirect template with an explanation of the costs included within each item as long as the level of detail is similar to that shown here.

Job Supervision and Overhead: Wages including benefits, payroll insurance and taxes for onsite management, supervision, engineers, safety personnel, quality control staff, and administration staff.

Survey: Cost of construction survey including both Contractor-hired and outside service.

Site Office Expense: Ownership or rental of building, maintenance, removal, utilities, office and engineering expendables, furniture, computers and infrastructure, photographs.

Insurance and Taxes: Insurance other than that based on payroll, such as railroad protective, equipment insurance, and other specified or Contractor-required insurances. Taxes

excluding payroll taxes such as property tax and any special local or State. Sales tax should be included with the applicable item taxed.

Temporary Buildings: Cost of ownership or rental, set up, maintenance and removal of such buildings as owner's office (if not a direct bid item), warehouses, first aid building, and other miscellaneous.

Personnel Expense: Small tools and supplies, safety expendables, drug screen testing, training, physicals, and hiring expense. Include any per-diem costs for craft or indirect personnel.

Project Utilities: Site utilities such as temporary electric, water, and sanitary.

Mobile Equipment: Overhead vehicles, maintenance equipment and personnel (if not in Equipment Operating Expense), and general service equipment and personnel (such as flatbeds and forklifts if not in direct cost).

Mobilization: Cost of transportation of equipment and other items for move in, move out, set up, and take down. Include cost of personnel moves and related expense.

Construction Plant: Include site fences, parking areas, material yards, temporary access, and other such special construction not included in direct costs. Haul road construction and maintenance to be included in direct costs.

Quality Control: Cost of QC labor, equipment, and supplies and outside services and Contractor-hired personnel with site overhead wages.

Bonds: Include cost of payment and performance bond or other guaranties as specified or allowed. Cost of subcontract or material bond shall also be included here.

Escalation: Estimated cost of Items for which firm pricing cannot be obtained. Includes increases in craft and field indirect wage rates and fringe benefits whether by agreement or estimated. Include material and subcontract that are not firm for the given durations. Explain basis for all escalation costs.

Allowable Construction Costs for Direct and Indirect Costs

The following are components of the direct and indirect cost categories. These cost components should not be included in the Fixed Markup Percentage.

Labor: Includes wages and add-ons including overtime, vacation pay, and all fringe payments such as health and welfare, pensions, and any other that may be included in union agreement or as paid to both craft and staff employees. Payroll insurance including Worker's Compensation and General Liability if based on labor amounts. Payroll taxes including FICA and State and Federal unemployment.

Permanent Materials: Includes the cost of materials incorporated into the Work. To include estimated loss, waste, and non-pay overruns. Sales tax and any shipping for these materials will be a part of this category.

Construction Expendable Materials: Includes non-permanent materials, temporary facilities, small tools, formwork, temporary construction, office supplies, services, insurance, and taxes.

Equipment Ownership: Includes rental or ownership charge of both company-owned and outside rentals and sales tax on any rentals.

Equipment Operating Expense: Includes repair parts, tires and tracks, Contractor's repair labor, services and fuel, oil and grease.

Subcontract: Cost of Items of work subcontracted including contracted trucking.

Use of Total Construction Cost Estimate

During the pre-construction phase of the project, the contractor will utilize the approach to price described within the SOQ as the basis for developing the Opinion of Probable Construction Cost (OPCC). Estimating teams will reconcile costs associated with the direct and indirect costs described above, or as presented in the winning Contractors SOQ.

Fixed Markup Percentage, OPCC, and CAP

Construction Agreed Price (CAP) is an alternate approach to setting prices that provides for an overall price of a project while allowing flexibility for the inclusion of quantity changes and/or various risk elements to the contract and allows for greater flexibility facilitating early release/multiple contract packages. Under the CAP concept, the CM/GC Team may identify certain risk elements the Contractor is best suited to mitigate during construction and include them within the contract as contingency items, or through other means. The owner holds contingency dollars to cover the cost of the contingent items if they occur. In this manner, the overall cost of the project is allowed to fluctuate to handle these pre-planned items as opposed to fixing a guaranteed lump sum price for the contract.

The Contractor shall propose a fixed fee for the work expressed as a percentage (Appendix D). The fixed fee shall not include any field indirect costs or direct costs of the Project. The fixed markup percentage shall be applied to the Total Construction Cost, and the result shall be the CAP. It is expected that a Joint Venture or LLC provide one fixed markup percentage that will apply to all member companies in the Joint Venture or LLC. The fixed markup percentage will include the Contractor's profit and the portion of home office overhead (G&A) allocated to the Project. The fixed markup percentage proposed in this RFQ will be used in the OPCC estimates and final CAP. The profit component of the fixed fee is to include any bonuses and incentives but excludes all costs associated with direct Project construction activities, including but not limited to risk or contingency. Home office overhead (G&A) is defined as all auditable costs that are allocated to all of the Contractor's ongoing projects, including insurance that is maintained by the Contractor as a general cost of doing business.

Appendix D – CM/GC Fixed Markup Percentage Form

Proposers, please read the following carefully before preparing this Fixed Markup Percentage Form:

The Proposer shall insert a fixed markup percentage to be applied to the Total Construction Cost to arrive at the Construction Agreed Price (CAP) as described in Appendix C. The **Fixed Markup Fee** should be carried out to two (2) decimal points (e.g. 0.00%). Conditioned, qualified, or incomplete Fixed Markup Percentage Forms will be considered Non-Responsive.

I-40 Bridge Replacements Fixed Markup Percentage	
Fixed Markup Percentage to be applied to the Total Construction Cost	____.____ %

Company Name

Proposer's Name (Signed)

Proposer's Name (Printed)

Email and Phone Number

Reporting Number (SAP Vender Number), Expiration Date

Proposer's Tax ID

Appendix E

