DGS-30-456
(Rev. 10/18)

Construction Management at Risk
Procurement Review Submittal Form

General Project Information

Agency Name:	Science Museum of Virginia	
Is the agency a covered institution per §2.2-4379?		No
Project Name:	Northern Virginia Science Center	
Project Number:	146-18428-000	

Other Project Information

Advising A/E Name:	**HGA**	License Number:	0407005851
COV Sections: §2.2-4380.B.2, §2.2-4381.C.2			
Attach written determination for use of CM at Risk.			
COV Sections: §2.2-4380.C.2, §2.2-4380.B.1; §2.2-4381.D.2, §2.2-4381.C.1			
Is the procurement process proposed a two-step process?			Yes
COV Sections: §2.2-4380.C.2, §2.2-4380.B.7; §2.2-4381.D.2, §2.2-4381.C.7			

Agency Reasons for Use of CM at Risk

Construction Cost (COV Sections: §2.2-4381.B.1, §2.2-4380.C.3, §2.2-4381.D.3)	Yes
Building Use (COV Sections: §2.2-4381.B.1, §2.2-4380.C.3, §2.2-4381.D.3)	Yes
Project Timeline (COV Sections: §2.2-4381.B.1, §2.2-4380.C.3, §2.2-4381.D.3)	No
Need for Project Phasing (COV Sections: §2.2-4380.C.5, §2.2-4381.D.5)	No
Project Complexity (COV Sections: §2.2-4381.B.1, §2.2-4380.C.4, §2.2-4381.D.4)	Yes
Value Eng. and/or Constructability Analysis Concurrent with Design (COV Sections: §2.2-4381.A)	Yes
Need for Quality Control/Vendor Prequalification (COV Sections: §2.2-4380.C.5, §2.2-4381.D.5)	Yes
Need for Cost/Design Control (COV Sections: §2.2-4380.C.5, §2.2-4381.D.5)	Yes

Supporting Information for Procurement Method Selection

Project Use (i.e. lab, classroom, office, etc.): (COV Sections: §2.2-4380.C.3; §2.2-4381.D.3)				
The Northern Virginia Science Center will be a 70,000 sf regional facility focused on providing a science center where children, families, educators, and citizens will encounter a showcase of innovation, past and present to help inspire them towards their own innovative future. The facility will include the museum, office and administration, ticketing, classrooms / multipurpose rooms, event space, gift shop, exhibition spaces both inside and outside, an innovation studio, gallery area, and a domed theatre.				
Construction Cost:	$38,257,365	(COV Sections: §2.2-4380.C.3; §2.2-4381.D.3)		
Project schedule: (COV Sections: §2.2-4380.C.3; §2.2-4381.D.3)	Design Start Date	11/15/2019	Design Compl. Date	5/8/2021
	Const. Start Date	6/1/2021	Const. Compl. Date	6/30/2023
	Attach bar chart schedule to illustrate fast tracking or other schedule complexities. (COV Sections: §2.2-4380.C.3, §2.2-4380.C.4; §2.2-4381.D.3, §2.2-4381.D.4)			
Additional description to highlight key attributes that affect the project complexity, need for value engineering/constructability analysis, quality control/vendor prequalification, and cost/design control as indicated by "Yes" answers above:				

Determination: The Science Museum of Virginia has determined that this project should be procured by the CM at Risk procedure, finding that competitive sealed bidding is not practicable or fiscally advantageous.

♦ The new Science Center will contain multiple floors of unique and complex elements for interior and exterior exhibition and public use spaces. The exterior and core design will be completed by the A/E firm and the interior exhibit spaces will be completed by the exhibit designer/fabricator. Having two designers working concurrently on different aspects of the same spaces will require extensive coordination and review of all major systems and components. Exhibit spaces will require special finish, electrical, lighting, mechanical, audio visual, security, fire protection and life safety considerations. The CMaR will provide value to this dual designer process in the review of all documents, specifically evaluating and providing feedback on constructability concerns, coordination of materials and systems, ensuring all costs are accounted for during the budgeting phases, and providing value engineering services. Early review from a CMaR will allow these comments to inform the design and be incorporated into the overall documents as the project progresses from Schematic to Working Drawings. This will ensure the project is within budget, reduce change orders during construction, and provide for cohesive design and construction integration.

♦ The concept for the museum is to allow for changing functional use of multiple spaces, allowing the lobby and exhibit spaces to be utilized as special event and large meeting venues. This dual purposing of spaces that have specific access/egress, temperature, control, and humidity requirements will necessitate additional evaluation and considerations for the exit path, lighting, mechanical, building automation, and life safety systems. The CMaR can provide feedback on design, system routing, equipment, and overall installation sequencing and methods. Considering both the core design as well as the exhibit design, this review is critical to have the most efficient layouts incorporated into the final design documents. This will ensure coordination of all systems and finishes for the entire building as project moves from design into construction, eliminating changes in the field that would result in time delays and monetary impacts to the project. The CMaR will also have the ability to pre-qualify firms for the critical trades.

♦ Being a signature museum in the heart of Northern Virginia, the building will have a distinctive architectural facade and unique interiors requiring higher standards for the finishes and execution of the installation. A CMaR firm will allow for specialty contractor input on the facade design and complex finishes. Specifically for the coordination of details, constructability review and comment, and trade specific contractor input on proposed material durability, maintenance, and cost both initial and life cycle. This input will be will be crucial to inform the design of the building, and ensure selected materials are within budget, can be properly installed and will perform as designed for the life of the building.

♦ The proposed location of the museum requires +/- 15' of structured fill to bring it to the proposed grade. One of the main design considerations is a basement for the mechanical / central plant. Having a CMaR on board will allow for detailed construction and cost analysis between various options including excavated basement, a basement placed before the site is backfilled, and a pad ready site design. This CMaR evaluation and input on design of the structural considerations, waterproofing details, and backfilling methods for each option will help the design team and the developer make the most informed decision for the project considering construction and cost implications.

♦ The Science Museum is responsible for the base building construction only. The exhibits will be funded by a combination of Loudon County and outside corporate and private donations. Many conceptual features like "The Cloud", a dome theatre, special exhibits and other mixed use spaces will be dependent upon funding from outside donors. Having a CMaR firm to provide preconstruction assistance in evaluating the potential features and provide cost and constructability input will be an asset to both the design and fundraising efforts.

♦ The project complexity is increased based on its location. It is in the center of an emerging development that has residential and retail occupancy and has ongoing construction for residential, commercial, retail, and museum facilities. Pedestrian, vehicular, and bike traffic maintenance, security and safety precautions 24/7 will be major considerations to project setup. There will also be limited onsite laydown area, requiring just-in-time deliveries for all materials as well as detailed coordination with the developer and other contractors. Selecting a CM with experience working in a residential community on a congested and tight site is extremely important to this project and to the developer of the community.

(COV Sections: §2.2-4380.C.4; §2.2-4381.D.4)

Submitted by: Rich Conti Date: 9/19/2019

Signature: Richard Conti

Title: Chief Wonder Officer - Science Museum of Virginia

(Agency Head or Authorized Representative)

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Based upon the information provided by the Agency, the use of Construction Management at Risk IS recommended for this project.

Recommended by: W. M. Coppa 9/30/19

W. Michael Coppa, RA
Director, Division of Engineering and Buildings