

DGS-30-456

(Rev. 02/22)

Construction Management at Risk Procurement Review Submittal Form

General Project Information

Agency Name:	Virginia Polytechnic Institute and State University (208)		
Is the agency a covered institution per §2.2-4379?			Yes
Project Name:	Expand Virginia Tech Carilion School of Medicine & Fralin Biomedical Research Institute		
Project Number:	P18682		

Other Project Information

Advising A/E Name:	Liza Morris NCARB, University Architect	License Number:	VA 0401018243
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)	Yes
Need for Project Phasing (COV Sections: §2.2-4380.C.5, §2.2-4381.D.5)	Yes
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)			
Virginia Tech-Carilion School of Medicine (VTC SOM) and Fralin Biomedical Research Institute (FBRI) currently share a 151,000 gross square foot (GSF) facility constructed in 2010 and located in Roanoke, Virginia. The medical school occupies approximately 51,000 GSF of the building and the research institute occupies approximately 100,000 GSF. Neither VTC SOM or FBRI have sufficient space available to meet future student and research volume demands. Expanding both facilities will aid in resolving the Commonwealth's medical professional deficit while enhancing medical research sector economic development efforts in southwest Virginia.			
Construction Cost:	\$183,700,000	(COV Sections: §2.2-4380.C.3; §2.2-4381.D.3)	
Project schedule:	Design Start Date	Apr-24	Design Compl. Date
(COV Sections: §2.2-	Const. Start Date	Jul-26	Const. Compl. Date
			Jun-29

4380.C.3; §2.2-4381.D.3)

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:

Project Complexity:

This project includes two components:

- Educational component:** Construction of a new, free-standing, approximately 100,000 GSF building for the school of medicine. The facility will include patient clinical exam rooms and support spaces, a wet anatomy laboratory with cadaver cooler, medical instruction laboratories, team instruction rooms, large and medium-size lecture halls, a testing center, academic support space, and administration spaces. The facility will double existing enrollment capacity from 200 to 400 students and expand faculty from 33 to 66 personnel. The facility will be located on land provided by Virginia Tech's partner, Carilion Clinic, in close proximity to the existing building.

- Research component:** Renovation of the existing 51,000 GSF medical school space to create research laboratory and computation/data analytics capacity for FBRI. Renovations will create additional dry research space, wet research space, office and administrative space, including customized spaces for the research institute's growing programs in human subjects and patient research. This renovation will allow the institute to grow its research portfolio, compete for additional research grants and contracts, and increase externally sponsored research in the Commonwealth. The building will remain operational and occupied during renovations to avoid disrupting the ongoing, critical research of FBRI.

Other specific project complexity considerations include:

- Complex facility infrastructure and systems. Medical facility construction will include, but is not limited to, complex components such as robust mechanical systems to support high air change rates, dedicated lab exhaust, specialty medical equipment, plumbed lab gas and purified water systems, and multi-feed electrical systems to support the larger equipment and systems. Specialty medical and research equipment will likely include chemical fume hoods, snorkels, cold rooms, environmental chambers, biological safety cabinets, -80° freezers, and sterilizers.

- Pedestrian and traffic control. VTC SOM will be near and within the existing school of medicine and FBRI where hundreds of students, faculty, staff and patrons/patients interact. Additionally, the local area is densely populated with neighboring apartment complexes, retail venues, etc. CMaR early planning and coordination of pedestrian and vehicular traffic through and around the construction area will be essential for safety and logistics management.

- Site location challenges. Prior projects in this area of southwest Virginia have encountered large underground karst formations and extensive veins of rock. As site conditions become more fully known during design, alternative foundation systems and below grade building characteristics on many structures may be required. Additionally, flood plain considerations will need to be taken into account. Early CMaR involvement will enhance design decisions addressing these concerns.

Construction Cost with Need for Cost/Design Control:

Construction costs are anticipated at \$183.7M. Project cost, complexity, scope, scale, and schedule drive the need for a robust, sophisticated CMaR with significant experience in:

- Medical and research facility construction standards.
- Phased project delivery and complex occupied renovations.
- Comprehensive cost estimating and cost control to ensure scope and budget alignment throughout all phases of design and construction.

- Guiding determination and management of early procurement packages to fast-track essential long-lead components.

- Managing multiple, high-value, highly complex scopes of work in requiring sophisticated cost control mechanisms, logistics management and collaborative scheduling.

Collaborative involvement of the CMAr with the A/E throughout preliminary design and working drawings will inform design processes, enhance project cost estimation, ensure sequencing of work is efficiently planned and budgeted, and provide constructability analysis—all of which are critical to maintaining project costs within budget.

Project Timeline and Need for Project Phasing

Project phasing timeline:

- Phase 1 – Construction of new medical school: The project will deliver the new 100,000 GSF facility for VTC SOM.

- Phase 2 – Renovations of existing, vacated VTC SOM space: Upon completion of phase 1, existing 51,000 GSF facility will be renovated for FBRI expansion. FBRI will continue to occupy adjacent space within the existing facility during phase 2 renovation.

Operations within the existing VTC SOM and FBRI facilities cannot be interrupted during construction, so vacancy, occupancy, and construction phasing logistics, to include an occupied renovation of the existing facility, will be primary project drivers. Medical research will be ongoing adjacent active construction.

Maintaining utilities, life safety systems, code-compliant egress, and minimizing sound and vibration intrusion within the active spaces will be imperative throughout the renovation. Early involvement of the CMAr during design to ensure phasing/constructability considerations will be essential.

Need for Quality Control/Vendor Prequalification:

- Use of two-step procurement procedures will help ensure selection of a CMAr with the qualifications, expertise and experience best suited for this project.

- Due to the budget constraints and intense delivery timelines, subcontractor pre-qualification by the CMAr for certain work packages will be essential for effective financial management and cost control.

- Southwest Virginia has a limited subcontractor population and use of CMAr will expand market reach through early subcontractor involvement during design.

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

Submitted by:

Christopher H. Kiwus, PE, PhD

Date:

11/1/2023

Signature:

DocuSigned by:

Christopher H. Kiwus

C798F8A440FE40E

Title:

Vice President for Campus Planning, Infrastructure, & Facilities

(Agency Head or Authorized Representative)

For DGS Use Only

Based upon the information provided by the Agency, the use of Construction Management at Risk

IS

recommended for this project.

Recommended by:	DocuSigned by: 
W. Michael Coppa, RA C2C8454B56A44EF...	
Director, Division of Engineering and Buildings	

is
is not

Yes
No