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:	Student Life Village (Phase I)	
Project Number:	L00078	

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)

The Student Life Village is a new, phased delivery residential district with student housing, supporting facilities and infrastructure to enhance on-campus residential living. Located in the far westernmost region of the main campus in Blacksburg, the project will be built on land that is lightly developed, currently lacking infrastructure necessary to support the project. The overall district is envisioned to be developed in three long-term phases. (This project delivers Phase I only.)

- Phase I project scope includes:
  - Four multi-building quadrangles of “Living-Learning Community” residence halls providing 1,752 beds.
  - 900-seat state-of-the-art dining/mixed use facility with capacity to handle 4,000+ meal transactions daily.
  - 23,500 GSF recreation facility plus outdoor recreation area, village trail, and ecological buffer.
  - Extensive, community-wide utilities and infrastructure including a bus transit plaza.

- Cumulative scope and scale of Phase I is inherently complex and drives the need for use of an alternative procurement methodology in lieu of traditional Design-Bid-Build. Key components that justify use of CMaR include:
  - Anticipated cost of construction of Phase I is estimated at $260M.
  - Project is long-term, multi-phased with early delivery of critical components in Phase I.

o Buildings/quads will feature multiple room configurations with integrated laboratories that can accommodate programmatic activities such as maker spaces, design studios, performing arts venues, and IT/AV-intensive student/faculty collaboration spaces that provide real-time/real-world engagement.

o Early planning coupled with phased construction of myriad infrastructure components is critically important to the project and overall Student Life Village concept.

o Preparation and release of early procurement packages including long-lead materials, extensive sitework, and utilities/infrastructure for fast-track execution are essential.

o Properly phased construction of residential, dining and well-being/enrichment facilities will trigger timely revenue streams into the project business model to initiate debt service strategies.

Construction Cost:	$260,000,000	(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	Jan-24	Design Compl. Date	Jul-26
	Const. Start Date	Jul-25	Const. Compl. Date	Dec-28
	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:

Construction Cost/Need for Cost-Design Control:

With construction costs anticipated at $260M, project complexity, scope, scale, schedule and cost drive the need for a robust, sophisticated CMaR with significant experience in:

- Comprehensive cost estimating to ensure scope and budget alignment throughout all phases of design.
- Preparing and releasing early procurement packages including long-lead materials, extensive sitework, and utilities/infrastructure to fast-track essential front-end components.
- Managing multiple, high-value scopes of work in phased delivery format requiring sophisticated cost control mechanisms, logistics management and complex scheduling.

Building Use:

Coordination between the A/E and CMaR during all phases of design regarding foundations, underground structure, MEP, life safety systems and patron/staff/functional circulation will be essential for successful execution of Phase I. Specific project characteristics and uses that push complexity higher and justify the need for CMaR include:

- 1,752 beds of residential student housing will be established in “Living Learning Communities” essential to meet the university’s commitment as a national leader in cultivating innovative environments and communities that provide transformative experiences for students.
- Phase I dining/mixed use facility will feature various commercial franchises and unique serving venues plus extensive back-of-house operations to give students a diversity of options within a single marketplace setting.

o Mixed-use component includes community enrichment/well-being spaces to enhance the student experience and provide flexible use space for private dining events and activities.

o Dining/mixed use facilities have inherently complex building systems and circulation requirements dictating extensive zoning of HVAC systems, controls, and lighting.

o Additionally, the dining facility may possibly include an underground parking structure to

accommodate staff and other parking requirements.

Project Timeline and Phasing:
Phase I is planned for execution beginning in FY24 with the procurement of a full design services A/E contract followed by procurement of a single CMaR contractor for preconstruction and construction services. Phase I is expected to be fully operational in summer 2028 to accommodate other university priorities and timelines. This aggressive schedule propels the need for close coordination between A/E, CMaR and other stakeholders throughout project delivery—especially during design. Additional drivers include:

- Because massive project scale and extensive limits of disturbance will be created for Phase I and appropriately sized utilities/infrastructure to accommodate future phases, project permitting is expected to be a behemoth task. Involving the CMaR in early project planning/permitting will streamline this critical project milestone and set the stage for successful early phase packaging and execution.
- CMaR early/phased coordination of road and access infrastructure coupled with stormwater management facilities and other utility components in preparation for actual building construction is vital to the overall project.
- Expedited delivery and phased occupancy of completed buildings will create pedestrian/vehicular traffic coordination challenges while other Phase I construction activities are still ongoing. Coordination by the CMaR during early project planning stages will minimize risk and optimize the start-up of the overall residential district.

Project Complexity:
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. Specific project complexity considerations include:

- Pedestrian and traffic control. Phase I construction will be near the existing Oak Lane special purpose housing area where 600+ students live and interact within fraternities and sororities. Oak Lane has a single access road that will be heavily impacted throughout Phase I construction. CMaR early planning and coordination of pedestrian and vehicular traffic through and around the construction area will be essential for safety and logistics management.
- Building foundations. Prior neighboring projects 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. Early CMaR involvement will enhance design decisions addressing these concerns.
- Infrastructure and utilities of Phase I must be planned and sized to accommodate two potential future phases of the Student Life Village district. Stormwater management, domestic water, sanitary sewer, electrical, telecommunications, roads, and transportation systems infrastructure will be major components of Phase I planning, design, and construction on scales necessary to support long-term future development. Specific considerations include:
    - Stormwater management. Stormwater management strategy for all three phases of the Student Life Village is to adopt a regional approach that directs most stormwater loads to a primary retention facility. Stormwater infrastructure must be sized for all future phases and the above-ground stormwater retention facility must be constructed in full during Phase I. Early A/E and CMaR coordination during design to preserve existing drainage patterns as much as possible will increase the efficiency of stormwater management and minimize infrastructure expense.
    - District energy. Project will be subject to Virginia Tech's 2020 Climate Action Commitment which

identifies the critical role of district thermal systems play in the emissions profile of the campus and calls for exploration of alternative systems in all new construction and planning projects. Options have been initially discussed internally and the benefits and drawbacks of each will be evaluated in coordination with the A/E and the CMaR for final systems selection.

- Electrical and telecommunications. Phase I will incorporate large-scale electrical distribution systems and telecommunications infrastructure, with provisional planning for future phases. Elements include a switch and cabling center integrated into the Phase I dining facility, Wi-Fi, Internet cable, cellular signals, VOIP and emergency communications networks. Early CMaR involvement in these elements of electrical and telecom design will optimize project capability.
- Primary utilities. Early A/E and CMaR coordination during design is vital to ensure domestic water, sanitary sewer system, natural gas, and other primary utilities fully accommodate Phase I and future phases; and follow roadways for ease of maintenance access while working with the natural topography.

Value Engineering and/or Constructability Analysis Concurrent with Design:

- CMaR will provide constructability reviews and inputs to structural, MEP, and envelope systems for the multitude of buildings/facilities and utilities/infrastructure that define Phase I.
- Accurate CMaR constructability analysis coupled with timely cost estimation/feedback on scope decisions throughout design will optimize value engineering analyses conducted at each major design phase milestone while reducing the potential for time consuming budget impasse delays.
- Traditional, annual escalation rates range from 4% to 7%, and given the estimated construction project budget of $260M, monthly escalation costs stemming from lengthy, unplanned design pauses to remedy budget shortfalls will be financially detrimental to the project.
- CMaR participation in maintaining an efficient design schedule with continuous cost control oversight will enhance project execution while minimizing construction change order costs and schedule impacts.

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.

Additional Considerations:

Given the strategic location of the project, a key factor for delivery method selection is ensuring the Virginia Tech Board of Visitors (BOV) and university senior leadership will have ample opportunity throughout all phases of design to directly influence and control exterior design of facilities and overall community appearance. Virginia Tech gave strong consideration to the use of Design-Build; however, the combination of pragmatic complexity and BOV expectation to control design and aesthetics throughout the design phase would not be compatible with the strengths of the Design-Build process. In contrast, use of the Construction Manager at Risk methodology allows the university to retain appropriate control of the project while affording tangible advantages and means to deliver facilities that provide the desired student experiences envisioned by the overall Student Life Village concept.

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

Submitted by: Christopher H. Kiwus, PE, PhD Date: 8/8/2023

Signature: DocuSigned by: Christopher H. Kiwus C798F8A440FE4DE...

Title: Vice President for Campus Planning, Infrastructure, & Facilities

(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: DocuSigned by: W. M. Coppa C2C8454B56A44EF...

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