CapitalBudgetRequest

Replace Burruss Hall Water Piping System

Overview	
Agency	Virginia Polytechnic Institute and State University (208)
Project Code	none
Project Type	Improvements-Other
Biennium	2022-2024
Budget Round	Amended Bill
Bill Version	Regular Session
Request Type	New Project
Project Location	Roanoke Area
Facility/Campus	Blacksburg Main Campus
Source of Request	Agency Request
Infrastructure Element	Maintenance / Repairs
Contains O & M costs? No	
Contains significant technology costs? No	
Contains significant energy costs? No	
Possible that project will be used by other than a state or local governmental entity, or for research under sponsored programs (higher education)? No	

Agency Narrative

Agency Description

Executive Summary:

Virginia Tech places a high priority on facility maintenance and mitigating deferred maintenance. The university's commitment is demonstrated by fully embracing the state's FICAS system for facility monitoring, aggressively addressing repairs, exceeding the 85 percent E&G Maintenance Reserve spending requirement every biennium since the introduction of the performance requirement, establishing a nongeneral fund Maintenance Reserve program in 1996 for its auxiliary enterprises, and allocating funds to address routine maintenance funding.

The state's General Fund Maintenance Reserve program has been the lynchpin for the university to address deferred maintenance for its E&G facilities. However, several facilities have deferred maintenance needs that exceed the limits of the Maintenance Reserve program.

The Capital Budget Request Instructions released in July 2022 include a new capital priority for "funding requests to address a significant maintenance reserve-type issue at an existing facility", and this request is to replace the water piping system of Burruss Hall.

Project Description:

Burruss Hall was built in 1936 with additions in 1968 and 1970. The building is 158,000 gross square feet with a Facility Condition Index score of 43.2 percent. The building serves multiple instruction programs including architecture, design, arts, student affairs services, several academic support functions, and contains the university's largest instructional auditorium.

The water piping system is original to the building and is severely degraded. The system routinely fails (pipe burst) during seasonal weather changes resulting in flooding that damages property and the building, requires closure of a section of the building and loss of service while repairs are made to the broken section, and filing of insurance claims. Because the piping system carries the hot water used for heating, conducting repairs are potentially harmful to the plumbers because of scolding.

The specific timing and location of a failure is not predictable; thus, damage can become excessive if a burst occurs over the weekend or holiday.

Repairs are currently addressed as routine maintenance activities, but are limited to only a particular broken section. The entire system is progressively failing and needs to be replaced, but the costs exceed the limits of the Maintenance Reserve program.

This project request is to replace all the water piping in the north and west elevations of the building.

The 1936 piping design has only two pipes, the system uses the same piping alternately for hot water heating and chilled water cooling. This system design is no longer installed on campus. Thus, the project would install a four-pipe system which uses separate lines for hot and chilled water allowing for heating and cooling throughout the year. The project also replaces the associated air handling units, fan coil units, and control units.

These repairs would extend the service life of the water piping system by 30 years.

Justification

Program Description:

Please see the Project Description section above.

Funding Plan:

The scope of this project is entirely Educational and General programming: thus, the funding plan calls for 100 percent General Fund support.

Options Considered:

Deferring the project was considered but not selected because the progressive deterioration of the piping system increases the risk of a major flooding event that would result in a large shut down of the building and disruption to student services.

Implementing the significant repairs through Maintenance Reserve is not an option because the project cost is beyond the $2 million threshold.

Methodology

The project cost in 2022 dollars is $5.6 million. The project costs are estimated to a mid-point of construction in 2024 using the current CR-1 Project Planning form (as of July 2022).

The 2022 project cost amount is based on internal estimates developed by university staff using historical comparables of on-campus work. The costing analysis utilized past and current projects that concerned water pipe system renovation and replacement. The project is planned to utilize the traditional Design, Bid, Build delivery method.

Funding Request

Phase	Year	Subobject	Fund	Amount
Construction	2024	2322 - Construction, Buildings	01000 - General Fund	$7,383,000
			Total	$7,383,000

Project Costs

Cost Type	Requested Funding
Acquisition Cost	$0
Building & Built-in Equipment	$6,667,000
Sitework & Utility Construction	$0
Construction Cost Total	**$6,667,000**
DESIGN & RELATED SERVICE ITEMS	
A/E Basic Services	$254,000
A/E Reimbursables	$7,000
Specialty Consultants (Food Service, Acoustics, etc.)	$0
CM Design Phase Services	$0
Subsurface Investigations (Geotech, Soil Borings)	$0
Land Survey	$0
Archeological Survey	$0

Hazmat Survey & Design	$0
Value Engineering Services	$0
Cost Estimating Services	$0
Other Design & Related Services	$1,000
Design & Related Services Total	**$262,000**
INSPECTION & TESTING SERVICE ITEMS	
Project Inspection Services (inhouse or consultant)	$30,000
Project Testing Services (conc., steel, roofing, etc.)	$11,000
Inspection & Testing Services Total	**$41,000**
PROJECT MANAGEMENT & OTHER COST ITEMS	
Project Management (inhouse or consultant)	$27,000
Work By Owner	$2,000
BCOM Services	$0
Advertisements	$0
Printing & Reproduction	$0
Moving & Relocation Expenses	$0
A/V Cabling	$0
IT Cabling	$0
Telephone Cabling	$0
A/V Equipment	$0
IT Equipment	$0
Telephone Equipment	$0
Signage	$0
Demolition	$0
Hazardous Material Abatement	$0
Utility Connection Fees	$0
Utility Relocations	$0
Commissioning	$14,000
Miscellaneous Other Costs	$37,000
Project Management & Other Costs Total	**$80,000**
Furnishings & Movable Equipment	$0
Construction Contingency	$333,000
TOTAL PROJECT COST	**$7,383,000**

Size and Scope

Cost Type	Unit of Measure	Units	Cost Per Unit
Acquisition Cost		0	$0
Construction Cost		0	$0
Total Project Cost	gsf	158,000	$47

Supporting Documents

File Name	File Size	Uploaded By	Upload Date	Comment
+CR-1 Burruss Hall Water Pipe Replacement 8.4.22.xlsx	594,541	Matthew Digman	8/5/2022	

Workflow History

User Name	Claimed	Submitted	Step Name	Submit Action
Jennifer Hundley	08/04/2022 06:34 PM	08/04/2022 06:34 PM	Enter Capital Budget Request	Continue Working
Jennifer Hundley	08/04/2022 06:34 PM	08/04/2022 06:34 PM	Continue Drafting	Continue Working

Jennifer Hundley	08/04/2022 06:37 PM	08/04/2022 06:38 PM	Continue Drafting	Continue Working
Matthew Digman	08/05/2022 08:46 AM	08/05/2022 08:50 AM	Continue Drafting	Continue Working
Matthew Digman	08/05/2022 10:17 AM	08/05/2022 10:17 AM	Continue Drafting	Continue Working
Matthew Digman	08/05/2022 11:10 AM	08/05/2022 11:11 AM	Continue Drafting	Continue Working
Rob Mann	08/05/2022 11:42 AM	08/05/2022 11:47 AM	Continue Drafting	Submit for Agency Review
Rob Mann	08/05/2022 12:00 PM	08/05/2022 12:00 PM	Agency Review Step 1	Ready for DPB Bulk Submit
Rob Mann	08/05/2022 12:04 PM	08/05/2022 12:04 PM	Ready for DPB Submission	Submit to DPB
			DPB Review	