CapitalBudgetRequest

Improve Center Woods Complex

Overview

Agency	Virginia Cooperative Extension and Agricultural Experiment Station (229)
Project Code	none
Project Type	Improvements-Infrastructure Repairs
Biennium	2024-2026
Budget Round	Initial Bill
Bill Version	Regular Session
Request Type	Previously Submitted
Project Location	Roanoke Area
Facility/Campus	Other
Source of Request	Agency Request
Infrastructure Element	Agricultural Facility

Contains O & M costs? Yes

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:

Commercial fishing, commercial fish hatcheries, and game fishing are vital economic sectors of the Commonwealth's economy. As an example, the 2019 economic impact study conducted by the Virginia Seafood Agricultural Research and Extension Center shows the seafood industry is one of the Commonwealth's largest sectors generating approximately $1.1 billion annually and supporting over 7,100 jobs. In similar fashion, the U.S. Fish and Wildlife Service and U.S. Census Bureau estimated that people engaged in wildlife associated recreation spend $3.5 billion annually in Virginia.

These industries rely on cutting-edge research to remain at the top level of competition, and Virginia Tech's faculty in fish and wildlife conservation are nationally and internationally recognized as the leading scientists in these disciplines, including five embedded federal scientists. Further, Virginia Tech partners with other leading research teams including the Virginia Cooperative Fish and Wildlife Research Unit and the United States Forest Service to provide groundbreaking techniques to improve the distribution, abundance, and production of cold-water fish, including increasing the quantity and quality of fish yield in the Commonwealth.

The university's applied research is critical to the future health of these Commonwealth industries and much of the research conducted by its faculty has been funded by federal agencies. For example, over the past five years, 82 percent of the research dollars spent by the university on these focus areas came from eight federal agencies.

This research is conducted at facilities adjacent to the Blacksburg campus in an area known as "Center Woods". The existing facilities of Center Woods have exceeded their life expectancy and are now too small and outdated to conduct the research work necessary to support the needs of the industries and communities that rely on it.

This project request is for an $14.7 million General Fund appropriation to demolish existing facilities and to construct approximately 25,900 gross square feet (GSF) of new research facilities at Center Woods in Blacksburg, Virginia. New facilities at Center Woods will assure researchers are equipped to take on the emerging natural resources management and conservation challenges that industry and communities will face in the 21st century.

Project Description:

This project will construct a new 25,900 gross square feet (GSF) facility with research laboratories, research support spaces, equipment storage, and offices.

This request also includes demolition of 12 existing facilities or structures which have surpassed their useful life and whose square footage will be replaced as required and with optimal efficiency in the new facility. The overall total gross square footage to be demolished is approximately 5,900 GSF.

The top priority need is for research laboratory space. The current need is comprised of 10 new spaces, subdivided into three types, which total approximately 4,080 assignable square feet. The first type is a wet laboratory designed for experimentation and research that require multiple sinks with ample bench lengths, cabinetry, and hoods. The second type is an animal project space designed for experiments and research that involve living organisms. These spaces require a sink, bench space and storage as well as a floor drain. Type three is for fabrication and project experimentation space that does not directly involve living organisms and is a 'clean' space. All of these research laboratory space types require a design emphasis on flexibility (such as reconfigurable equipment) and frequency (such as power outlets at regular intervals along the bench) to achieve maximum flexibility and ensure long-term viability.

Laboratory support spaces include six preparation areas. These spaces are critical for the safe use of the previously described wet laboratories, animal project spaces, and clean fabrication project spaces. Also, because of the number of vehicles and boats in use by the department, there is a need for a two-story tall garage with a general shop area to perform routine repair and maintenance of the fleet. In sum, field support spaces total approximately 4,250 assignable square feet.

Storage for research and laboratory equipment includes approximately 6,125 assignable square feet.

Office spaces include work stations for research faculty and their teams. Each research faculty office is connected with three open office stations for graduate research assistants. The meeting rooms include two that are sized to fit eight people and one that is sized to accommodate 40 people. The area for professional staff will be an open office with workstations. In total, the office space is approximately 4,970 assignable square feet.

These four categories total approximately 19,425 assignable square feet and with an efficiency factor of 75 percent, totaling approximately 25,900 gross square feet.

The project scope, site development, and building configuration for the Improve Center Woods Complex project is consistent with the 2018 Campus Master Plan. The site's key objectives include appropriate building configuration, scale and massing, stormwater mitigation and site integration.

Justification

Program Description:

The faculty that lead research in this area are members of the Department of Fish and Wildlife Conservation at Virginia Tech. The department is a model of stakeholder integration under the land-grant university mission with five embedded federal scientists, close ties to the Virginia Department of Wildlife Resources, and one of the highest funded research programs at Virginia Tech.

Over the last five years, faculty were awarded $38.6 million in new research funding, consistently ranking in the top five in funding per investigator among all departments at Virginia Tech.

The applied research conducted by the faculty and students of the department directly benefits conservation of game and non-game species in the state of Virginia through cooperative research and previsioning of federal funds for projects here in the state of Virginia. Specifically, the department has spent well over $15 million of federal funding on projects benefiting natural resources in the Commonwealth over the past 5 years. This includes funding from the U.S. Fish and Wildlife service (17 active awards), U.S. Geological Survey (15 active awards), USDA Forest Service (14 active awards), the National Science Foundation (13 active awards), the National Park Service (12 active awards), the National Fish and Wildlife Foundation (4 active awards), the USDA National Conservation Service (4 active awards), the U.S. Department of the Interior (3 active awards), and USDA National Institutes of Food and Agriculture (2 active awards). This applied research directly supports wildlife tourism and recreation (including hunting, fishing, and wildlife watching) in the Commonwealth. The U.S. Fish and Wildlife Service and U.S. Census Bureau estimated that people engaged in wildlife associated recreation spend $3.5 billion annually in Virginia.

The economies and populations of small towns in western Virginia depend on the abundant natural resources of the region and future economic growth will depend on a balance of both extractive and non-consumptive uses that will be facilitated by the research conducted at the Center Woods facilities.

Center Woods plays a critical role in providing quality research and outreach experience via knowledge distribution for all cooperative extension stakeholders in the Commonwealth.

Strategic Planning:

The university's strategic plan includes the following goals and objectives that will be supported by the completion of this project:

• Increase extramural research expenditures.
• Achieve top US public land-grant ranking.
• Increase graduate student enrollment.
• Advance the rural Virginia initiative.
• Increase and sustain excellence in research, discovery, and creativity.
• Increase institutional impact and visibility.
• Increase representational diversity, cultural competency, and address critical societal issues impacting humanity and equity.
• Attract, retain, and develop the talents of students, faculty and staff prepared to serve both the local and global communities while also supporting lifelong engagement and learning.
• Continue to develop the physical campus and technology infrastructure.

Existing Facilities:

The faculty conduct research in a set of facilities located on approximately 45 acres adjacent to the main campus. This location is a low traffic area and adjacent to core campus making it the ideal location for work with wild animals and fish, as well as the storage of field equipment. Center Woods is also home to the Research Aviary which opened in September 2015. Other programs supported by facilities at Center Woods include the Black Bear Research Program, the Virginia Tech Shorebird Program, the Freshwater Mussel Propagation Laboratory, and the Conservation Aquaculture Program.

The primary research buildings at Center Woods are over 30 years old and were constructed of sheet metal and wood framing. These structures have reached their functional life expectancy and present problems in safety and rodent control and many have been included in the list of structures to demolish as part of this project request. Laboratory spaces in these buildings are also outdated and do not provide the functionality needed to support modern laboratory and fieldwork in fish and wildlife sciences. For example, faculty are often working at field sites that might be contaminated with pollutants, disease, or both, but there are no facilities for cleaning and disinfecting field equipment to avoid spreading contaminants and disease among field sites.

Funding Plan:

The program of this project is entirely Educational and General for the Cooperative Extension/Agricultural Experiment Station programs; thus, the funding plan calls for 100 percent General Fund support for this $14.7 million project.

Options Considered:

Options considered and not selected include renovation of existing facilities and deferring the project to a future biennium. The existing facilities have accumulated too much deferred maintenance and deterioration to withstand renovation. Deferring the project is also not desired because of the urgent need for improvements and the ongoing impact on the quality of extension outreach and research.

Methodology

Cost Explanation and Methodology:

A. Methods Used to Estimate Costs:

The method for estimating costs for the Improve Center Woods Complex project includes: 1) using unit costs in the Bureau of Capital Outlay Management's Construction Costs Database (updated February 2023) with a regional market multiplier and a multiplier for soft costs; and 2) comparable university historical costs as shown in the CR-1. Both methods are escalated to a construction midpoint of 2027 in accordance with the instructions for developing the Six-Year Capital Outlay Plan and the rate utilized in the most recent CR-1 Project Planning form.

Design, Bid, Build is the preferred delivery method for this project in consideration of the overall costs, scale, and general simplicity of construction required for these facilities.

Soft cost estimates are prepared by university staff and are based on historical data costing analysis and projections of time required to manage the project's design and construction.

Project costs are estimated to the mid-point of construction using escalation in accordance with the instructions for developing the Six-Year Capital Outlay Plan. On a total project cost basis, inclusive of design, construction, and equipment, the unit costs are $567 per gross square foot. The unit construction costs of the project are $380 per gross square foot. The building types in this request are conference rooms, high-bay laboratory and office spaces in the Bureau of Capital Outlay Management's Construction Costs Database.

B. The proposed costs include the following considerations specific to this project and its site:

1) The capacity of utilities to the site such as power, domestic water, sanitary sewer, natural gas, technology, and storm water infrastructure may need to be increased.

2) Mechanical equipment and building automation systems are designed and selected to meet performance requirements and to optimize total costs of ownership inclusive of energy costs and operations and maintenance costs. System selections are justified based on a 30-year economic life cycle analysis. Mechanical equipment will be covered and secured to maximize equipment life and service.

3) High-capacity wireless networks to support simultaneous use of multiple devices (laptop computer, tablet computer, smartphone, and other WIFI devices) are required.

Funding Request

Phase	Year	Subobject	Fund	Amount
Construction	2025	2411 - Unallotted Capital Amount	01000 - General Fund	$14,700,000
			Total	$14,700,000

Project Costs

Cost Type	Requested Funding
Acquisition Cost	$0
Building & Built-in Equipment	$9,830,575
Sitework & Utility Construction	$0
Construction Cost Total	**$9,830,575**
DESIGN & RELATED SERVICE ITEMS	
A/E Basic Services	$655,743
A/E Reimbursables	$4,510
Specialty Consultants (Food Service, Acoustics, etc.)	$19,844
CM Design Phase Services	$8,118
Subsurface Investigations (Geotech, Soil Borings)	$47,805
Land Survey	$3,608
Archeological Survey	$0
Hazmat Survey & Design	$271
Value Engineering Services	$17,138
Cost Estimating Services	$8,118
Other Design & Related Services	$57,028
Design & Related Services Total	**$822,183**
INSPECTION & TESTING SERVICE ITEMS	
Project Inspection Services (inhouse or consultant)	$120,866
Project Testing Services (conc., steel, roofing, etc.)	$187,058
Inspection & Testing Services Total	**$307,924**
PROJECT MANAGEMENT & OTHER COST ITEMS	
Project Management (inhouse or consultant)	$235,078
Work By Owner	$65,845
BCOM Services	$5,412
Advertisements	$5,412
Printing & Reproduction	$0
Moving & Relocation Expenses	$902
A/V Cabling	$0
IT Cabling	$0
Telephone Cabling	$0
A/V Equipment	$0
IT Equipment	$122,670
Telephone Equipment	$0

Signage	$11,726
Demolition	$57,650
Hazardous Material Abatement	$0
Utility Connection Fees	$0
Utility Relocations	$1,498,890
Commissioning	$38,785
Miscellaneous Other Costs	$312,757
Project Management & Other Costs Total	**$2,355,127**
Furnishings & Movable Equipment	$911,163
Construction Contingency	$473,028
TOTAL PROJECT COST	**$14,700,000**

Size and Scope

Cost Type	Unit of Measure	Units	Cost Per Unit
Acquisition Cost	GSF	0	$0
Construction Cost	GSF	25,900	$380
Total Project Cost	GSF	25,900	$568

Operating and Maintenance Costs

Cost Type	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
GF Dollars	$0	$0	$0	$504,935	$520,083	$535,685
NGF Dollars	$0	$0	$0	$0	$0	$0
GF Positions	0.00	0.00	0.00	2.73	2.73	2.73
NGF Positions	0.00	0.00	0.00	0.00	0.00	0.00
GF Transfer	$0	$0	$0	$0	$0	$0
GF Revenue	$0	$0	$0	$0	$0	$0
Layoffs	0	0	0	0	0	0

Planned start date of new O&M costs (if different than the beginning of the fiscal year):---

Supporting Documents

File Name	File Size	Uploaded By	Upload Date	Comment
Gateway Building at Center Woods Feasibility Study_FINAL.pdf	19,474,741	Rob Mann	5/24/2023	
Center Woods Program Chart 6.2023.pdf	163,280	Matthew Digman	6/21/2023	
CR-1 Center Woods 6.2023.xlsx	608,761	Matthew Digman	6/21/2023	

Workflow History

User Name	Claimed	Submitted	Step Name	Submit Action
Rob Mann	05/24/2023 01:57 PM	05/24/2023 01:57 PM	Enter Capital Budget Request	Continue Working
Rob Mann	05/24/2023 01:57 PM	05/24/2023 01:58 PM	Continue Drafting	Continue Working
Matthew Digman	05/24/2023 02:28 PM	05/24/2023 02:41 PM	Continue Drafting	Continue Working
Matthew Digman	05/26/2023 11:39 AM	05/26/2023 11:40 AM	Continue Drafting	Continue Working
Matthew Digman	06/09/2023 02:03 PM	06/09/2023 02:33 PM	Continue Drafting	Continue Working
Matthew Digman	06/16/2023 01:19 PM	06/16/2023 01:20 PM	Continue Drafting	Continue Working
Matthew Digman	06/16/2023 02:09 PM	06/16/2023 02:20 PM	Continue Drafting	Continue Working
Matthew Digman	06/16/2023 02:28 PM	06/16/2023 02:28 PM	Continue Drafting	Continue Working
Matthew Digman	06/20/2023 02:42 PM	06/20/2023 02:48 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 11:53 AM	06/21/2023 11:55 AM	Continue Drafting	Continue Working

Matthew Digman	06/21/2023 01:07 PM	06/21/2023 01:11 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 01:11 PM	06/21/2023 01:11 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 03:40 PM	06/21/2023 03:43 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 03:46 PM	06/21/2023 03:52 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 04:04 PM	06/21/2023 04:05 PM	Continue Drafting	Continue Working
Matthew Digman	06/21/2023 04:22 PM	06/21/2023 04:22 PM	Continue Drafting	Continue Working
Rob Mann	06/21/2023 06:26 PM	06/21/2023 06:42 PM	Continue Drafting	Submit for Agency Review
Rob Mann	06/22/2023 10:53 AM	06/22/2023 10:53 AM	Agency Review Step 1	Ready for DPB Bulk Submit
Rob Mann	06/22/2023 03:41 PM	06/22/2023 03:41 PM	Ready for DPB Submission	Submit to DPB
			DPB Review	