CapitalBudgetRequest

Improve Center Woods Complex

Overview

Agency	Virginia Cooperative Extension and Agricultural Experiment Station (229)
Project Code	none
Project Type	Improvements-Infrastructure Repairs
Biennium	2018-2020
Budget Round	Initial Bill
Request Origin	New Project
Project Location	Roanoke Area
Facility/Campus	Other
Source of Request	Agency Request
Infrastructure Element	Agricultural Facility

Contains significant technology costs? No

Contains significant energy costs? No

Project will be used by other than a state or local governmental entity? No

Agency Narrative

Agency Description

Executive Summary:

The Department of Fish and Wildlife Conservation at Virginia Tech is home to nationally and internationally recognized undergraduate and graduate programs. With five embedded federal scientists, close ties to the Virginia Department of Game and Inland Fisheries, and one of the highest funded research programs at Virginia Tech, the department stands as a model of stakeholder integration under the land-grant University mission.

Faculty, students, and staff of the Department of Fish and Wildlife Conservation conduct world-class research for industry and conservation management in an area on campus known as Center Woods. This location is a low traffic area adjacent to campus making it the ideal location for work with wild animals and fish, as well as the storage of field equipment.

In addition, the Conservation Management Institute, a research unit in the college working in applied animal and land habitat research in the Commonwealth, and strategically with the Department of Game and Inland Fisheries.

The existing facilities of Center Woods are now too small for the program and most have exceeded their expected life expectancy. The size and condition of the facilities limits program operations and activities. This project request is for an appropriation to construct 28,000 gross square foot, two-story, pre-engineered metal building.

Project Description:

First-rate facilities will have significant impacts on the future of the department, the work of the faculty, and learning opportunities for students. The close proximity of classrooms, research laboratories, facilities for holding animals under standardized experimental conditions, and a significant area of woods make Center Woods a place where students, faculty, staff, and commercial partners can come to develop and engage in the new tools and approaches of fish and wildlife conservation. Students will be better prepared and equipped to take on the emerging natural resources management and conservation challenges of the 21st century.

To support enrollment growth in the College of Natural Resources and Environment, and increasing research activity within the Department of Fish and Wildlife Conservation, this project would construct a modern two-story rectangular structure with flexible spaces for offices, small collaborative meeting rooms, a large meeting room, flexible laboratory spaces, “dirty” laboratories for preparing and cleaning field equipment, and animal behavior rooms. One end of the new building would provide open spaces for truck and boat repair, maintenance, a shop for fabrication, and storage. This space would only require heating. The building would be located in the Center Woods area of the campus, adjacent to the existing boat sheds. This would place the building at the entrance of the Center Woods complex. Gravel parking would be located in the spaces previously occupied by the old boat shed and structures adjacent to the Aquaculture Barn.

The project would also demolish existing structures that are not functional and present a safety hazard. This would include the structure and

greenhouses associated with the existing Aquaculture Barn, but not the Aquaculture Barn itself (as it is still a functioning laboratory), and an old boat shed structure.

The following spaces are envisioned as part of the 28,000 square foot building:

• Ten faculty offices (10'x12') which would be adjacent to both the open space for graduate students and the laboratory spaces described below. (1,200 square feet)

• Flexible open space for graduate student/post doc cubicles (~ 30 cubicles) that would be designed to accommodate different sized individual spaces as needs dictate. (900 square feet)

• Four smaller meeting/project rooms adjacent to the larger open space (15' x 15') that could hold meetings of 4 to 6 people and would be visually, but not audibly, open to the adjacent student and post doc space. (900 square feet)

• Large meeting room with a capacity of 40 to 50 people. This room would also have audio-visual equipment incorporated into one end and a sink and kitchenette incorporated into the other end. (800 square feet)

• Four dirty labs located on the first floor for cleaning and preparing field equipment (~24' x 32' each) that would have direct outside access through oversized doors. (3,072 square feet)

• Two wet labs with sinks, cabinets, and hoods (20' x 46' each) that would be designed for flexibility with movable benches and ample access to electrical and data ports. At least one of the spaces would be equipped with a distilled water system. An acid and a solvent hood should be located centrally in each laboratory space. (1,840 square feet)

• Four animal behavior experimental rooms (12' x 14') used to setup specifically designed behavioral experiments with animals. They would be temperature controlled, but are not otherwise specialized. (672 square feet)

• Second floor with flexible floor plan for up to nine dry laboratories. Climate control on this space should be independent of the lower floor and would have operable windows. (~ 6,900 square feet)

• Three two-story bays with garage doors (34' x 25') to provide workspace for truck and boat maintenance and repair, as well as storage space for boats that house expensive and sensitive electronic equipment. One bay should be drive through. This space would be heated through overhead heaters, but no cooling is required. (2,550 square feet)

• Shop area next to garage bays (24' x 24') to provide space for fabrication of field equipment and experimental units. It would also include floor drains and overhead pull down electrical outlets. This space would be heated through overhead heaters, but no cooling is required. (576 square feet)

• One story open covered area adjacent to the garage bays on the exterior of the building (34' x34') to store boats that that do not contain expensive and sensitive electronics. This space should be fenced to restrict access and prevent theft of small boat motors.

• Total enclosed project space is approximately 26,000 gross square feet including 16,500 square feet of conditioned (i.e., air and heat) programmed space and 3,000 square feet of non-conditioned (i.e., no air and heat) programmed space.

• This project will also include approximately 2,000 square feet of covered, but not enclosed space. This covered space brings the total gross square feet of the building to 28,000.

The project scope, site development, and building configuration shall be consistent with the 2017 master plan update and include universal accessibility design principles as appropriate.

Justification

Program Description:

The Department of Fish and Wildlife Conservation at Virginia Tech is home to nationally and internationally recognized undergraduate and graduate programs. With five embedded federal scientists, close ties to the Virginia Department of Game and Inland Fisheries, and one of the highest funded research programs at Virginia Tech, the department stands as a model of stakeholder integration under the land-grant University mission.

In 2016 faculty were awarded $8.9 million in new research funding, ranking fifth in total funding and first in funding per FTE among all departments at Virginia Tech. Since 2005 the department's undergraduate enrollment has increased by almost 60 percent and graduate enrollment has increased by 44 percent. Student enrollment, number of faculty and support staff, and research funding are all expected to grow in the future in accordance with the department and college strategic plans.

Faculty, students, and staff of the Department of Fish and Wildlife Conservation conduct research and experiential learning in an area on campus known as Center Woods. This location is a low traffic area adjacent to campus making it the ideal location for work with wild animals and fish, as well as the storage of field equipment. The department currently maintains and stores more than 13 boats and 25 trucks at the Center Woods location to support the department's fieldwork. 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.

Center Woods serves as the staging location for all field research conducted by the department and class field trips. Center Woods plays a critical role in providing a quality learning experience for both undergraduate and graduate students. Over the past five years, undergraduates from the Department of Fish and Wildlife Conservation have been employed with organizations in twenty states and three foreign countries, including nine universities, ten federal agencies, and seven state agencies from Alaska to Florida.

Existing Facilities:

Several buildings at Center Woods are over 25 years old and were constructed of sheet metal and wood framing. Although they are still used as laboratory and office space because of current space limitations in other academic buildings, these structures have reached their functional life expectancy and present problems in safety and rodent control. Laboratory spaces in these buildings are also outdated and do not provide the functionality needed to support modern laboratory and field work 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 $5.6 million project.

Options Considered:

Options considered include renovation of other existing animal facilities to house animals and deferral of the project. Renovation of other existing facilities would be costly as facilities would require major reconfigurations to the specified animal breed and population. Deferral of this project to a future biennium is also not desired because of the urgent need for improvements and the on-going impact on the quality of instruction and research.

Alternatives Considered

Costing Methodology

A. Methods Used to Estimate Costs:

The method for estimating costs for the Center Woods Complex project includes: 1) using unit costs in the Bureau of Capital Outlay Management's Construction Costs Database updated October 2016 with a regional market multiplier and a multiplier for softs costs; and 2) comparables as shown in the CR-3. Both methods are escalated to a construction midpoint of 2021 at three percent 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 $200 per gross square foot. The building types in this request are high-bay, commercial quality, laboratory and office spaces in the Bureau of Capital Outlay Management's Construction Costs Database

Virginia Tech's building construction for this off campus location reflects commercial quality similar to structures in the University's Corporate Research Center. The estimates also include the cost of technology, specialized instruction, and energy efficiency goals of the institution.

This project will use a Design-Bid-Build delivery method appropriate for the size and complexity of this project.

Agency Funding Request

Phase	Year	Fund	Subobject	Requested Amount
Full Funding	2019	01000 - General Fund	2322 - Construction, Buildings	$5,600,000
			Total	$5,600,000

Project Costs

Cost Type	Total Project Costs	Requested Funding	DGS Rec
Acquisition Cost	$0	$0	
Building & Built-in Equipment	$3,632,846	$3,632,846	
Sitework & Utility Construction	$0	$0	
Construction Cost Total	**$3,632,846**	**$3,632,846**	
DESIGN & RELATED SERVICE ITEMS			

A/E Basic Services	$134,824	$134,824	
A/E Reimbursables	$0	$0	
Specialty Consultants (Food Service, Acoustics, etc.)	$0	$0	
CM Design Phase Services	$0	$0	
Subsurface Investigations (Geotech, Soil Borings)	$0	$0	
Land Survey	$0	$0	
Archeological Survey	$0	$0	
Hazmat Survey & Design	$0	$0	
Value Engineering Services	$0	$0	
Cost Estimating Services	$0	$0	
Other Design & Related Services	$2,957	$2,957	
Design & Related Services Total	**$137,781**	**$137,781**	
INSPECTION & TESTING SERVICE ITEMS			
Project Inspection Services (inhouse or consultant)	$67,365	$67,365	
Project Testing Services (conc., steel, roofing, etc.)	$26,453	$26,453	
Inspection & Testing Services Total	**$93,818**	**$93,818**	
PROJECT MANAGEMENT & OTHER COST ITEMS			
Project Management (inhouse or consultant)	$174,010	$174,010	
Work By Owner	$9,950	$9,950	
BCOM Services	$0	$0	
Advertisements	$341	$341	
Printing & Reproduction	$0	$0	
Moving & Relocation Expenses	$0	$0	
A/V Cabling	$0	$0	
IT Cabling	$0	$0	
Telephone Cabling	$0	$0	
A/V Equipment	$0	$0	
IT Equipment	$43,939	$43,939	
Telephone Equipment	$0	$0	
Signage	$3,097	$3,097	
Demolition	$0	$0	
Hazardous Material Abatement	$0	$0	
Utility Connection Fees	$0	$0	
Utility Relocations	$115,358	$115,358	
Commissioning	$0	$0	
Miscellaneous Other Costs	$90,327	$90,327	
Project Management & Other Costs Total	**$437,022**	**$437,022**	
Furnishings & Movable Equipment	$1,148,000	$1,148,000	
Construction Contingency	$150,533	$150,533	
TOTAL PROJECT COST	**$5,600,000**	**$5,600,000**	

Capacity

Cost Type	Unit of Measure	Units	Cost Per Unit
Acquisition Cost		0	$0
Construction Cost	GSF	28,000	$130
Total Project Cost	GSF	28,000	$200

Operating and Maintenance Costs (Agency)

Cost Type	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024

GF Dollars	$0	$0	$0	$398,514	$410,469	$422,783
NGF Dollars	$0	$0	$0	$0	$0	$0
GF Positions	0.00	0.00	0.00	2.29	2.29	2.29
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
CR-3_Project Planner-229-3 Center Wood Complex.xlsx	419,125	Rob Mann	7/7/2017	CR-3 Form_Center Woods Complex
229_03_Center Woods Complex Improvements Program Chart.pdf	71,738	Rob Mann	7/7/2017	Center Woods Program Chart

Workflow History

User Name	Claimed	Submitted	Step Name	Submit Action
Jennifer Hundley	06/06/2017 10:28 AM	06/06/2017 10:28 AM	Enter Capital Budget Request	Continue Working
Jennifer Hundley	06/06/2017 10:28 AM	06/06/2017 10:36 AM	Continue Drafting	Continue Working
Jennifer Hundley	06/06/2017 10:52 AM	06/06/2017 10:52 AM	Continue Drafting	Continue Working
Rob Mann	07/07/2017 02:26 PM	07/07/2017 02:58 PM	Continue Drafting	Submit for Agency Review
Rob Mann	07/07/2017 02:58 PM	07/07/2017 02:58 PM	Agency Review Step 1	Ready for DPB Bulk Submit
Bob Broyden	07/07/2017 03:10 PM	07/07/2017 03:10 PM	Ready for DPB Submission	Continue Review
Bob Broyden	07/07/2017 04:00 PM	07/07/2017 04:00 PM	Ready for DPB Submission	Continue Review
Bob Broyden	07/07/2017 04:32 PM	07/07/2017 04:33 PM	Ready for DPB Submission	Continue Review
Bob Broyden	07/07/2017 04:35 PM	07/07/2017 04:35 PM	Ready for DPB Submission	Submit to DPB
			DPB Review	