

Capital Budget Request

Construct Livestock and Poultry Research Facilities - Phase I

Overview

Agency	Virginia Cooperative Extension and Agricultural Experiment Station (229)
Project Code	none
Project Type	New Construction
Biennium	2016-2018
Budget Round	Initial Bill
Request Origin	Previously Submitted
Project Location	Roanoke Area
Facility/Campus	Other
Source of Request	Agency Request
Infrastructure Element	Laboratory / Classroom

Contains significant technology costs? No

Contains significant energy costs? No

Agency Narrative

Agency Description

The Virginia agriculture industry represents a significant portion of commerce for the Commonwealth. Virginia Tech's Cooperative Extension/Agriculture Experiment Station agency provides critical production and operation research to advance and protect these industries. The focus of this capital project request is on facilities for five specific animal programs that are in need of improved facilities to sustain and advance the Commonwealth's industries. The specific sectors include sheep, poultry, swine, equine and beef/cattle. Of the overall Virginia agriculture industry, these five reflect nearly \$1.6 billion of cash receipts annually, 2011 study by the National Agriculture Statistics Service.

The quality and capacity of service and support to these industries depends largely upon the facilities and assets of Virginia Tech's Cooperative Extension/Agriculture Experiment Station. At present, the agency has 37 facilities that support these commercial industries in the Commonwealth. The assets total approximately 250,000 gross square feet and are generally 40 to 50 years-old. The facilities are aging well past their useful life with deferred maintenance so extensive that maintenance and rehabilitation are no longer options to sustain asset serviceability.

Given their age, the university has pulled nearly two service lives from these buildings. Conditions in most of these facilities are reaching the point of concern for continued use for animal care and housing and for work by students, faculty, and staff. To conduct funded research expected by the agriculture industry and the government, the facilities must have accreditation from the Association for Assessment and Accreditation of Laboratory Animal Care. Without some type of renewal of these assets, accreditation is at risk and the facilities will not be serviceable in the near future; the result will be a loss of the production and operational research that the industry depends on to remain competitive.

The proposed project will provide a combination of new replacement facilities and renovated facilities at the Blacksburg campus and three nearby university production and research farms. The full extent of new and renovated facilities needed in the five animal and livestock programs have been separated in two phases (Phase One and Phase Two) in order to efficiently plan, stage, and carry into operation the transition of animal research and production from existing facilities into new or renovated facilities. Temporary and permanent relocation of animals will be best managed in a two phase university project.

This request is for Phase One and includes approximately 126,000 gross square feet of various structures for Poultry, Swine, Equine and Beef/Cattle animal programs. The specific items are listed below in the program description.

Justification

Program description:

Based on analysis of the Animal and Land Use Study undertaken by the College of Agriculture and Life Sciences, the Department of Animal and Poultry Science's Sheep, Poultry, Swine, Equine and Beef/Cattle animal programs each identified buildings and facilities that are deteriorated and are beyond repair; facilities that cannot continue to efficiently serve animal program production, animal housing, on-going instruction and scientific research. Several other facilities require comprehensive renovation to efficiently serve animal program production, animal housing, on-going instruction and scientific research.

These animal production and livestock buildings included in Phase One of the Capital request will support the Department of Animal and Poultry Science and its instructional and research programs. In total the proposed Phase One renovation and new facilities total 125,590 gross square feet (GSF).

- Phase One Multi-use Facilities serving multiple animal programs will include major renovations to the 5,350 GSF Large Animal Pavilion (Judging Pavilion), two new 10,000 GSF Hay Storage Facilities and one 5,500 Equipment Storage building, and major-level comprehensive renovations to the 21,540 GSF Beef Barn at Plantation Rd. These facilities total 52,390 GSF.
- Phase One Beef/Cattle program: Facilities will include a new 6,000 GSF Nutrition/Physiology Research Facility and two new Hay Storage Facilities at 8,500 GSF each at Kentland Farm. These facilities total 23,000 GSF.
- Phase One Equine program: Facilities will include a new 11,250 GSF Equine Barn and minor-level comprehensive renovations to 3,450 GSF within Campbell Arena. These facilities total 14,700 GSF.
- Sheep program: (All Sheep program facilities are included in the future Phase Two Capital request.)
- Phase One Poultry Program - Broiler Layer Research: Facilities will include one new 10,000 GSF Grow-out Facility, a new 10,000 GSF Turkey Production Facility, a new 1,000 GSF Processing facility. These facilities total 21,000 GSF. The existing masonry structure Poultry program-Breeding/Genetics facilities at Chicken Hill on central campus are to be demolished. The replacement Poultry program- Breeding/Genetics facilities will be constructed on pastureland at the Turkey Run Farm in Montgomery County, requiring a new access farm road, extension of water service, sanitary line and electric service from connections at Glade Road.
- Swine program: Facilities will include a new 4,000 GSF Breeding Facility and a new 10,500 GSF Farrowing to Finishing facility. These facilities total 14,500 GSF.

The university's strategic plan includes the following principle strategies that will be supported by completion of this project:

- Increasing the number of our programs recognized as among the best internationally
- Establishing a distinctive and globally recognized profile
- Emphasizing translational research and scholarship
- Building upon existing and emerging strengths
- Maintaining growth in research expenditures toward a target of \$680 million by 2018
- Increasing graduate enrollment toward a target of an additional 1,000 students
- Increasing the number of post-doctoral positions in STEM-H research areas.
- Increasing undergraduate involvement in meaningful research experiences and experiential learning (hands on minds on)
- Creating meaningful partnerships with businesses and government entities to address complex problems by co-locating researchers and practitioners in "living labs"

Existing facilities:

Many of the current Department of Animal and Poultry Science facilities are deteriorated beyond repair and do not offer practical renovation or upgrade possibilities. Other facilities require major renovation to continue in operation. Without these facilities animal production, animal sciences instruction and applied research cannot continue progress.

Included in both Phase One and Phase Two of the Capital request, are the replacement of the outdated 37 structures covering 250,000 gross square feet. Phase One will encompass 126,000 gross square feet and Phase Two will encompass 90,000 gross square feet. Thus, the total replacement facilities will be approximately 84 percent small that the current because of efficiencies that may be achieved.

Funding Plan:

The program for this project is 100 percent Educational and General for the Cooperative Extension/Agricultural Experiment Station; thus, the funding plan calls for 100 percent general fund support.

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 rejected because of the urgent need for improvements and the on-going impact on the quality of instruction and research.

Alternatives Considered

Costing Methodology

The construction costs are based on the efforts of an external cost consultant, which analyzed the program requirements and compared to current market building comparables within university settings. Soft cost estimates developed by university staff based on historical data costing analysis and trends over the past eight years. The project is anticipated to have moderate site conditions and will use an appropriate construction delivery method for the size and complexity of the project. Project costs are estimated to the mid-point of construction using three percent escalation in accordance with the instructions for developing the Six-Year Capital Outlay Plan.

Agency Funding Request

Phase	Year	Fund	Subject	Requested Amount
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Construction	2017	0100 - General Fund	2322 - Construction, Buildings	\$22,500,000
Total				\$22,500,000

Project Costs

Cost Type	Total Project Costs	Requested Funding	DGS Rec
Acquisition Cost	\$0	\$0	
Building & Built-in Equipment	\$12,557,000	\$12,557,000	
Sitework & Utility Construction	\$1,976,000	\$1,976,000	
Construction Cost Total	\$14,533,000	\$14,533,000	
DESIGN & RELATED SERVICE ITEMS			
A/E Basic Services	\$1,372,000	\$1,372,000	
A/E Reimbursables	\$44,000	\$44,000	
Specialty Consultants (Food Service, Acoustics, etc.)	\$165,000	\$165,000	
CM Design Phase Services	\$0	\$0	
Subsurface Investigations (Geotech, Soil Borings)	\$88,000	\$88,000	
Land Survey	\$33,000	\$33,000	
Archeological Survey	\$0	\$0	
Hazmat Survey & Design	\$88,000	\$88,000	
Value Engineering Services	\$0	\$0	
Cost Estimating Services	\$26,000	\$26,000	
Other Design & Related Services	\$181,000	\$181,000	
Design & Related Services Total	\$1,997,000	\$1,997,000	
INSPECTION & TESTING SERVICE ITEMS			
Project Inspection Services (inhouse or consultant)	\$1,537,000	\$1,537,000	
Project Testing Services (conc., steel, roofing, etc.)	\$670,000	\$670,000	
Inspection & Testing Services Total	\$2,207,000	\$2,207,000	
PROJECT MANAGEMENT & OTHER COST ITEMS			
Project Management (inhouse or consultant)	\$933,000	\$933,000	
Work By Owner	\$0	\$0	
BCOM Services	\$0	\$0	
Advertisements	\$0	\$0	
Printing & Reproduction	\$0	\$0	
Moving & Relocation Expenses	\$0	\$0	
Non Built-In Data and Voice Communications	\$549,000	\$549,000	
Signage	\$71,000	\$71,000	
Demolition	\$110,000	\$110,000	
Hazardous Material Abatement	\$220,000	\$220,000	
Utility Connection Fees	\$322,000	\$322,000	
Utility Relocations	\$165,000	\$165,000	
Commissioning	\$0	\$0	
Miscellaneous Other Costs	\$603,000	\$603,000	
Project Management & Other Costs Total	\$2,973,000	\$2,973,000	
Furnishings & Movable Equipment	\$500,000	\$500,000	
Construction Contingency	\$290,000	\$290,000	
TOTAL PROJECT COST	\$22,500,000	\$22,500,000	

Capacity

Cost Type	Unit of Measure	Units	Cost Per Unit
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Acquisition Cost		0	\$0
Construction Cost	GSF	126,000	\$115
Total Project Cost	GSF	126,000	\$179

Operating and Maintenance Costs (Agency)

Cost Type	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
GF Dollars	\$0	\$0	\$630,000	\$648,900	\$668,367	\$688,418
NGF Dollars	\$0	\$0	\$0	\$0	\$0	\$0
GF Positions	0.00	0.00	4.51	4.51	4.51	4.51
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
229-1_CR-3 Animal Production Phase I.xls	634,368	Rob Mann	6/14/2015	CR-3_Livestock and Poultry Research Facilities I

Workflow History

User Name	Claimed	Submitted	Step Name
Rob Mann	05/18/2015 11:49 PM	05/18/2015 11:49 PM	Enter Capital Budget Request
Rob Mann	05/18/2015 11:50 PM	05/18/2015 11:50 PM	Continue Drafting
Rob Mann	05/18/2015 11:54 PM	05/18/2015 11:55 PM	Continue Drafting
Rob Mann	05/26/2015 03:52 PM	05/26/2015 03:54 PM	Continue Drafting
Rob Mann	06/08/2015 05:11 PM	06/08/2015 05:12 PM	Continue Drafting
Jennifer Hundley	06/12/2015 05:31 PM	06/12/2015 05:40 PM	Continue Drafting
Rob Mann	06/13/2015 10:53 AM	06/13/2015 11:03 AM	Continue Drafting
Rob Mann	06/13/2015 02:10 PM	06/13/2015 02:20 PM	Agency Review Step 1
Rob Mann	06/13/2015 08:00 PM	06/13/2015 08:05 PM	Agency Review Step 1
Rob Mann	06/14/2015 09:56 AM	06/14/2015 10:05 AM	Ready for DPB Submission
Bob Broyden	06/14/2015 02:15 PM	06/14/2015 02:15 PM	Ready for DPB Submission
Ruth Anderson	06/15/2015 12:15 PM	06/15/2015 12:15 PM	DPB Review
Ruth Anderson	06/15/2015 01:06 PM	06/15/2015 01:09 PM	DPB Review
Ruth Anderson	06/16/2015 11:15 AM	06/16/2015 11:15 AM	DPB Review
Anne Smith	06/19/2015 02:48 PM	06/19/2015 02:48 PM	DPB Review
Rob Mann	06/19/2015 03:10 PM	06/19/2015 03:11 PM	Agency Review Step 1
Bob Broyden	06/19/2015 03:45 PM	06/19/2015 03:45 PM	Ready for DPB Submission
			DPB Review