

Capital Budget Request

Construct Livestock and Poultry Research Facilities - Phase II

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 volume of future support to these industries depends partly upon the facilities and assets of Virginia Tech's Cooperative Extension/Agriculture Experiment Station. At present, the agency has 37 facilities that support these programs 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 the facilities of these programs are reaching the point of concern for continued use for animal care and housing and for work by students, faculty, and staff.

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.

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 Two and includes approximately 90,000 gross square feet of various structures for Poultry, Sheep, Equine and Beef/Cattle animal programs. The specific items are listed below in the program description.

Justification

Facilities by program description:

These animal production and livestock buildings included in Phase Two of the Capital request will support the Department of Animal and Poultry Science and its instructional and research programs. In total the proposed Phase Two renovation and new facilities total 90,000 gross square feet (GSF) across the five major areas described below.

- Phase Two Multi-use Facilities serving multiple animal programs will include a new Feed Mill with grain and commodity storage. This facility totals 16,400 GSF.
- Phase Two Beef/Cattle program: Facilities will include a new 3,425 GSF Calving Facility and a new 4,000 GSF Multi-purpose Research Facility at Kentland Farm. These facilities total 7,425 GSF.

- Phase Two Equine program: Facilities will include a new 2,700 GSF Storage Barn, a new 2,150 GSF Stallion Barn and a new 22,500 GSF Research/Extension Program Barn. These facilities total 27,350 GSF.
- Phase Two Sheep program: Facilities will include a new 12,100 GSF Sheep Center Facility and a new 1,600 GSF Manure Composting Structure, each at the Moore Farm. This facility totals 13,700 GSF. The existing pole barn Sheep program facilities at Plantation Road are to be demolished. The replacement Sheep program facilities will be constructed on pastureland at the Moore Farm in Montgomery County, requiring a new access farm road, extension of water service, sanitary line and electric service from connections at Prices Fork Road.
- Poultry program - Breeding/Genetics: Facilities will include a new 2,000 GSF Hatchery facility, a new 3,000 GSF Battery house, a new 10,000 GSF Brooder House, a new 10,000 GSF Grow-out facility. These facilities total 25,000 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: (All Swine program facilities have been included in the Phase One Capital request).

The university strategic plan includes principal strategies that this important project will serve to accomplish including:

- Creating meaningful partnerships with businesses and government entities to address complex problems by co-locating researchers and practitioners in "living labs"
- Increasing undergraduate involvement in meaningful research experiences and experiential learning (hands on minds on).
- Emphasizing translational research and scholarship
- Maintaining growth in research expenditures toward a target of \$680 million by 2018.

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 smaller than the current because of efficiencies that may be achieved.

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.
- Creating meaningful partnerships with businesses and government entities to address complex problems by co-locating researchers and practitioners in "living labs"
- Increasing undergraduate involvement in meaningful research experiences and experiential learning (hands on minds on)

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 state 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.

Phase	Year	Fund	Subobject	Requested Amount
Full Funding	2019	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	\$165,000	\$165,000	
Utility Relocations	\$322,000	\$322,000	
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
Acquisition Cost		0	\$0
Construction Cost	sq ft	90,000	\$161
Total Project Cost	sq ft	90,000	\$250

Operating and Maintenance Costs (Agency)

Cost Type	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
GF Dollars	\$0	\$0	\$450,000	\$463,500	\$477,405	\$491,727
NGF Dollars	\$0	\$0	\$0	\$0	\$0	\$0
GF Positions	0.00	0.00	3.22	3.22	3.22	3.22
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
229-3_CR-3 Animal Production Phase II.xls	634,368	Rob Mann	6/14/2015	CR-3_Livestock and Poultry Research Facilities II

Workflow History

User Name	Claimed	Submitted	Step Name
Rob Mann	05/18/2015 11:53 PM	05/18/2015 11:53 PM	Enter Capital Budget Request
Rob Mann	05/18/2015 11:53 PM	05/18/2015 11:54 PM	Continue Drafting
Rob Mann	05/19/2015 01:46 PM	05/20/2015 02:16 PM	Continue Drafting
Rob Mann	06/08/2015 05:12 PM	06/08/2015 05:13 PM	Continue Drafting
Jennifer Hundley	06/12/2015 05:43 PM	06/12/2015 05:45 PM	Continue Drafting
Rob Mann	06/13/2015 11:03 AM	06/13/2015 11:10 AM	Agency Review Step 1
Rob Mann	06/13/2015 02:25 PM	06/13/2015 02:26 PM	Agency Review Step 1
Rob Mann	06/13/2015 08:05 PM	06/13/2015 08:08 PM	Agency Review Step 1
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 12:41 PM	06/15/2015 12:42 PM	DPB Review
Ruth Anderson	06/15/2015 12:44 PM	06/15/2015 12:44 PM	DPB Review
Ruth Anderson	06/15/2015 12:44 PM	06/15/2015 12:45 PM	DPB Review
Ruth Anderson	06/16/2015 11:16 AM	06/16/2015 11:16 AM	DPB Review
Anne Smith	06/19/2015 03:37 PM	06/19/2015 03:37 PM	DPB Review
Rob Mann	06/19/2015 03:38 PM	06/19/2015 03:39 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