Capital Outlay Plan for 2016-2022

JOINT FINANCE AND AUDIT COMMITTEE
AND BUILDINGS AND GROUNDS COMMITTEE

August 31, 2015

At its March 2015 meeting, the Board of Visitors considered a recommendation that a list of potential projects for inclusion in the 2016-2022 Capital Outlay Plan (Plan) be approved and that the university be authorized to develop and submit a final plan to the state, in accordance with future guidance from the state and based on the projects in the approved list. The recommendation was approved, and the university has proceeded accordingly.

On May 13, 2015, the state issued instructions for the preparation and submission of the 2016-2022 Capital Outlay Plan. The deadline for submission of the Six-Year Capital Outlay Plan to the state was June 15, 2015, and the university prepared and submitted the plan by the due date. The state instructions required submission of only projects requesting some portion of General Fund resources in their budget. Attachment A shows the list of projects with General Fund support submitted to the state with the listing ranked in priority order for state support. The list of items is consistent with the list approved by the Board of Visitors at its March 2015 meeting.

The projects on Attachment A may be used by the state to update its capital outlay plan and to make funding decisions in the 2016 General Assembly. This project arrangement reflects the needs of the university, priorities of the state, and positions the university with options to respond to various funding abilities of the state in the future. The total dollar value of the listed projects exceeds projected resources likely to be allocated to Virginia Tech from the state during the planning period. However, including a variety of high priority needs in the listing ensures the university has some flexibility to adapt to various state capital funding programs that may emerge in the future.

The Plan includes projects with 100 percent nongeneral fund support and these are shown on a separate schedule (Attachment B) because they do not compete for General Fund resources. Historically, the state requested submission of the university's projects supported entirely with nongeneral funds and ranked in priority order. The state instructions for this submission specified not to submit any projects supported entirely with nongeneral fund resources. Under the university's Management Agreement for Capital Projects, the state has authorized the Board of Visitors to approve and implement projects supported 100 percent by nongeneral funds. Each project must be individually approved by the Board of Visitors. Under this authority, the university may bring resolutions to the Board to initiate projects from the Plan independent of the state budget process. When the university is prepared to initiate a project supported entirely with nongeneral funds, including a financing plan, the university submits a capital project resolution to the Board for consideration. The list in Attachment B includes the high priority projects for which nongeneral fund resources

are anticipated to be sufficient to start a project during the six-year period or for which a private fund raising campaign is a high priority.

Projects with nongeneral fund support, including portions of some gift campaigns, may use external debt to finance a portion of the budget. Each potential debt financing undergoes a financial feasibility assessment to ensure resources are sufficient to cover the full debt service term without unnecessary financial risk to the unit's operations. The positioning of debt is further analyzed to ensure the university does not exceed the parameters of the university debt policy and guidance from the Board of Visitors, which has consistently held the maximum allowable debt ratio (total annual debt service to total operating expenses) to below five percent. This evaluation is projected six-years out and includes anticipated issuances for projects in the Plan. This practice provides an important check to ensure the institution's debt obligations do not become a point of inflexibility in reaching the operational goals of the institution and to ensure the university is holding sufficient debt capacity for its highest priorities.

Attachment B includes a group of projects listed below the line of items on the plan. The section reflects the major facility components of university facility visioning exercise to develop a campus land bank. The land bank location is the area south of the Inn at Virginia Tech on a portion of the remaining campus golf course. The program for the area is a residential college with capacity to house 2,100 students in six residence halls; a commons buildings with recreation, dining, and student activity space; the proposed new business school listed on Attachment A, and necessary utilities and infrastructure to support the new community.

A brief narrative description of each project on Attachment A and Attachment B is shown on Attachment C.

Beyond the submission of the Plan to the state, the expected capital process for the state's 2016 budget session includes at least five major phases:

1) over the summer of 2015, a state appointed Advisory Committee (staffed by several central agencies and offices) will review of the university's 2016-2022 Plan with ongoing interactions by the university;

2) by November 1, 2015, the Advisory Committee will provide a set of recommendations to the Governor and Chairmen of the Money Committees to update the state's capital outlay plan for the 2016-2022 period;

3) on December 17, 2015, the Governor is scheduled to present to the General Assembly a bill proposing the state's updated capital outlay plan and a budget bill including planning funds or full funding for high priority items in the plan;

4) during the 2016 General Assembly, the legislature may amend the proposed plan and proposed funding items in the Executive Budget Bill; and,

5) July 1, 2016, the updated 2016-2022 plan and any funded items will be effective.

Recommendation:

That the Six-Year Capital Outlay Plan listing of projects shown on Attachment A for the period 2016 through 2022 as submitted to the state be ratified.

Further, that the list of projects shown on Attachment B be approved as the university's six-year capital plan of entirely nongeneral fund capital projects for the 2016-2022 planning period with projects individually approved by Board of Visitors resolutions prior to implementation

Attachment A

General Fund Six-Year Capital Outlay Plan for 2016-2022

JOINT FINANCE AND AUDIT COMMITTEE AND BUILDINGS AND GROUNDS COMMITTEE

as of July 7, 2015

		Budget in Millions (2019 Dollars)		
		General Fund	Nongeneral Fund	Total
University Division				
1	Undergraduate Science Laboratory Building	$ 74.8	$ -	$ 74.8
2	Engineering Renewal -- Holden Hall	61.0	12.5	73.5
3	Central Chiller Plant, Phase II	35.2	4.8	40.0
4	VTCRI Biosciences Research Addition	30.8	14.9	45.7
5	Neuroscience Research Laboratory	47.2	11.8	59.0
6	Translational Medicine Center, Phase I	19.4	4.0	23.4
7	Engineering Renewal -- Randolph Hall	119.4	24.4	143.8
8	Corps Leadership and Military Science Building	20.0	20.0	40.0
9	Business School	40.0	80.0	120.0
10	Architecture & Science Renewal -- Derring Hall	52.7	10.8	63.5
11	University Data Center	23.1	7.7	30.8
12	Library Storage Facility Addition	3.0	-	3.0
13	Health and Safety Improvements	12.0	-	12.0
		538.6	190.9	729.5
Cooperative Extension / Agriculture Experiment Station				
1	Renew Livestock and Poultry Research Facilities, Phase I	22.5	-	22.5
2	Human Agriculture and Bioscience Building II	67.8	-	67.8
3	Renew Livestock and Poultry Research Facilities, Phase II	22.5	-	22.5
		112.8	-	112.8
	Total for General Fund Projects	**$ 651.4**	**$ 190.9**	**$ 842.3**

Attachment B

Nongeneral Fund Six-Year Capital Outlay Plan for 2016-2022

JOINT FINANCE AND AUDIT COMMITTEE
AND BUILDINGS AND GROUNDS COMMITTEE

as of July 7, 2015

		Budget in Millions (2019 Dollars)		
		General Fund	Nongeneral Fund	Total
University Division				
Educational & General				
1	Myers Lawson School of Construction, Phase II		$ 13.0	$ 13.0
2	Virginia Bioinformatics Institute Data Center Improvements		6.0	6.0
3	STEM Expansion Space		30.0	30.0
4	Virginia Tech Transportation Institute, Phase IV		4.0	4.0
5	Center for Molecular Medicine and Infectious Disease Renovation		4.0	4.0
6	Center Woods Complex Renewal		4.0	4.0
7	Falls Church (NVC) Land Purchase Option		3.0	3.0
8	Virginia Tech Transportation Institute, Phase V		10.0	10.0
9	Manufacturing Prototype and Demonstration Facility		4.0	4.0
		-	78.0	78.0
Auxiliary Enterprises				
10	Slusher Hall Renovation (629)		35.0	35.0
11	War Memorial Hall Renovation		50.0	50.0
12	O'Shaughnessy Hall Renovation (341)		19.0	19.0
13	Softball and Indoor Track Facility Improvements		12.0	12.0
14	Baseball Field Press Box and Restrooms		10.0	10.0
15	Squires Hall Partial Replacement		30.0	30.0
16	Owens Dining Hall Renovation		22.0	22.0
17	Electronic Door Access for Residential System		5.0	5.0
		-	183.0	183.0
Cooperative Extension / Agriculture Experiment Station Division				
1	Eastern Shore Multipurpose Facility		1.0	1.0
2	Middleburg Equine Arena		3.0	3.0
		-	4.0	4.0
	Total of Nongeneral Fund Projects	**$ -**	**$ 265.0**	**$ 265.0**
	Grand Total of Capital Plan for 2016-2022	**$ 651.4**	**$ 455.9**	**$ 1,107.3**

Northwest Community Residential College Planning	Range of Magnitude Costs	
	Low	**High**
1050 Residential Beds	$ 112.0	$ 170.0
University Commons	50.0	70.0
Infrastructure and Utilities	50.0	100.0
1050 Residential Beds	119.0	180.0
	$ 331.0	$ 520.0

Attachment C

Project Descriptions for the 2016-2022 Capital Outlay Plan

JOINT FINANCE AND AUDIT COMMITTEE
AND BUILDINGS AND GROUNDS COMMITTEE

June 30, 2015

General Fund Projects:

University Division

1. Undergraduate Science Laboratory Building

This project is essential for accommodating the university's growing demand for STEM-H degrees. The proposed project envisions a new facility of 102,000 gross square feet of high quality general assignment instructional laboratories that will be located proximal to the new Classroom Building currently under construction.

2. Engineering Renewal -- Holden Hall

Holden Hall was constructed in 1940 with 42,100 gross square feet and no major renovations or building improvements since going into service. This project proposes to fully renovate 21,000 gross square feet of the building and to raze the remainder and replace it with an 80,000 gross square foot addition. The revised building size will be 101,000 gross square feet to support the Mining and Minerals Engineering program, the Materials Science and Engineering program, and the computer science program.

3. Chiller Plant, Phase II

This project is the second phase of a strategic plan to establish a campus centralized cooling system. The Phase I project completed construction for a new plant on the southwest area of campus in fiscal year 2015. This project will replace outdated equipment in the existing central plant on the north side of campus, install equipment in the open bays of the recently completed Southwest plant, and install distribution piping to connect the major plant systems and create a network for centralized campus cooling system.

4. VTCRI Biosciences Research Addition

This project is to construct a four-story, 45,500 gross square foot addition to the existing Virginia Tech Carilion Research Institute building in Roanoke, VA. The program has filled the existing space to capacity. The addition will serve as a fully operational and

contained biomedical research and research education facility which is necessary to continue growing the research program.

5. Neuroscience Research and Instruction Laboratory

This project is to construct a four-story, 80,000 gross square foot building to support demand for the recently implemented undergraduate degrees in neuroscience and nanoscience. The building program includes dense high performance wet laboratory spaces, neuroimaging laboratories, nanoscale imaging laboratories, and nanoscale characterization laboratories, supported by high intensity computational facilities.

6. Translational Medicine Center, Phase I

The proposed facility is a critical element for the university's capacity to continue growing its medical and medical-related research. The project envisions 30,000 gross square feet of facility improvements and expansion at the veterinary hospital to provide biomedical facilities to support translational medical research and training.

7. Engineering Renewal -- Randolph Hall

Randolph Hall was constructed in 1952 with an addition in 1959, and no major renovations since the construction was completed. The project envisions razing and replacing the entire 166,000 gross square foot existing building in phases and constructing a 40,000 gross square foot addition to optimize the available land to support engineering programs.

8. Corps Leadership and Military Science Building

The Corps Leadership and Military Science Building envisions a 60,500 gross square foot building to provide new permanent space for Corps of Cadets and ROTC programs that are currently dispersed on the north area of campus. The proposed building location is in the northern portion of the existing Upper Quad near Lane Hall.

9. Business Learning Community (Academic Portion)

The envisioned project includes 205,000 gross square feet of new construction to house the Pamplin College of Business. The proposed overall size and internal spaces will provide appropriate facilities to sustain the existing enrollments and to support planned enrollment growth of the college. The proposed building will provide the college expanded, modern academic space sufficient to meet demand for structured, interactive learning including a variety of general purpose classrooms; specialized classrooms/learning laboratories; and seminar rooms.

10. Architecture and Science Renewal -- Derring Hall

Derring Hall was constructed in 1969 with no major improvements or renovations since the original construction was completed. This request is to renovate and modernize

approximately 118,000 gross square feet of the 208,000 total gross square foot building. The renovated space will provide a solution to consolidate the faculty and instructional activities of physically dispersed programs (including leases) for departments including the Center for Public Administration and Policy, Landscape Architecture, Economics, and the School of the Visual Arts.

11. University Data Center

The University Data Center is envisioned to be a 40,000 gross square foot building that will be a resource to facilitate high performance computing and large scale data storage necessary for research. This project will support and partner with institutes, colleges, departments, and administrative areas to address needs for information storage, data transmission, and administration of university enterprise systems.

12. Library Storage Facility Addition

The project envisions the construction of a 6,000 gross square foot addition to the high-density Records Management/Library Storage Facility located on Energy Drive. The addition will contain high-bay, self-supporting, heavy duty storage shelving capable of handling up to 750,000 volumes and will increase the ability to efficiently store and quickly retrieve materials. This project is a precursor to large-scale modernization the Newman Library.

13. Health and Safety Improvements

The university's health, safety, and accessibility initiative for the campus is an ongoing effort, and the university includes a request for this program in each capital plan. This project is to continue progress on needed campus improvements including accessibility improvements, fire alarm systems, and updating needs assessments that are beyond the scope of the Maintenance Reserve program.

Cooperative Extension/Agricultural Experiment Station Division

1. Renew Livestock and Poultry Research Facilities, Phase I

The agency has 37 facilities that support a variety of commercial agriculture industries in the Commonwealth. The assets total approximately 250,000 gross square feet, are generally 40 to 50 years-old, and have aged past their useful life. This project is the first of two phases to renew the assets, and this phase includes 126,000 gross square feet of new and renovated facilities for broiler layer research, turkey production, poultry breeding, swine breeding, farrowing, multiple hay barns, and support facilities for program personnel.

2. Human & Agricultural Bioscience Building, Phase II

This project is to provide a second 92,000 gross square foot modern research space that will focus on plant sciences within the Agricultural Experiment Station including research laboratories, laboratory support space, research offices, faculty offices, and graduate student research space.

3. Renew Livestock and Poultry Research Facilities, Phase II

This project requests the second phase of improvements to complete necessary updates to facilities for the agency work that supports key agriculture industries in the Commonwealth. This second phase includes 90,000 gross square feet of new and renovated facilities to support sheep, poultry, swine, equine and beef/cattle programs.

Nongeneral Fund Projects:

University Division

1. Myers Lawson School of Construction, Phase II

This project envisions a 30,000 gross square foot expansion to Bishop-Favrao Hall, which houses the Myers Lawson School of Construction. The addition will accommodate demand for building construction programs and consolidation of program location for other college units

2. Virginia Bioinformatics Institute Data Center Improvements

The existing data center at the Institute has reached capacity and cannot support the call for additional high performance computing and "big" data projects. This request includes the renovation of approximately 3,000 square feet within the existing building to hold computing equipment and building service upgrades for electrical and cooling infrastructure to support the requirements of high performance data processing.

3. STEM Expansion Space

This project will provide space to accommodate the increase in the number of research active engineering and science faculty to teach and mentor the growing population of undergraduate and graduate STEM majors. The new building, anticipated to be located in Phase Two of the Corporate Research Center, is envisioned to approximately 80,000 gross square feet with state-of-the-art laboratories to support clean room, dry laboratory, and wet laboratory programs.

4. Virginia Tech Transportation Institute Research Building, Phase IV

The Virginia Tech Transportation Institute is projected to need a new building in approximately two years to serve research projects in the current research portfolio that

will be coming online and projected growth. This project envisions a 20,000 gross square foot addition for the Institute to house personnel and laboratory space.

5. Center for Molecular Medicine and Infectious Disease Renovation

The center was built in 1970 and the facility can no longer support key research programs, largely of the College of Veterinary Medicine. This project proposes to renovate the research laboratories and support facilities of the complex located at Price Fork Road to ensure appropriate facilities the biological and life sciences research programs operating in the facility.

6. Center Woods Complex Renewal

This project proposal is to renew the Center Woods Complex for the Fisheries and Wildlife program, located off Plantation Road, through a combination of renovations and replacements. This project envisions a total 13,200 gross square feet of new and refurbished mixed-use space that would include teaching and research space, offices, equipment storage and other support facilities.

7. Falls Church (NVC) Land Purchase Option

This request is for authorization to exercise the land purchase option available to the university for property in Falls Church where the Northern Virginia Center is located.

8. Virginia Tech Transportation Institute Research Building, Phase V

The Virginia Tech Transportation Institute is projected to need a new building, above and beyond the Phase IV building, in approximately five years based on research growth trends. This project envisions a 50,000 gross square foot project for the institute and is positioned in the capital plan in anticipation of the demand for research space.

8. Manufacturing Prototype and Demonstration Facility

This project envisions a 15,000 gross square foot facility to be located in the Plantation Road area with its main feature being a flexible use mechanical laboratory that will enable the testing of large equipment including robotics. Programs of the College of Architecture and Urban Studies and the Institute for Critical Technology and Applied Science will share space in the building.

Auxiliary Enterprises

9. Slusher Hall Renovation

This project is part of a long-range strategic plan to modernize the inventory of campus residential facilities. The proposed renovation will fully update the 126,000 gross square foot, 1972 facility and will incorporate additional hall lounges, community and study rooms, expanded bathroom facilities, and air conditioning. The planning work will

explore alternatives to expand the foot print of the building and optimize its land use footprint.

10. War Memorial Hall Renovation/Expansion

This project envisions a comprehensive renovation of the 123,000 gross square foot Recreation Sports portion of War Memorial Hall inclusive of envelope, mechanical, electrical, and plumbing upgrades. Interior renovations will convert a mmajority of the gymnasium to new spaces to accommodate modern priorities in student recreation and sports, showers and lockers will be upgraded, and an addition will provide a new entry and expanded program space.

11. O'Shaughnessy Hall Renovation

This project is part of a long-range strategic plan to modernize the inventory of campus residential facilities. The renovation will fully update the 70,000 gross square foot, 1966 facility and will incorporate additional hall lounges, community and study rooms, expanded bathroom facilities, and air conditioning.

12. Softball and Indoor Track Facility Improvements

Rector Field House is a 71,000 gross square foot facility which was built in 1971 and serves a majority of Olympic Sports, has incurred deferred maintenance including mechanical system repairs and does not have restrooms and seating sufficient for events held at the field house. The project would address the needs for a women's softball hitting facility as well as the needs for improvements for the indoor track and field programs.

13. Baseball Field Press Box and Restrooms

This project proposes a renovated and expanded facility totaling 10,000 gross square feet. It provides improvements to the existing press box and restrooms at English Field allowing the facility to meet the expectations of fans and media support personnel.

14. Squires Hall Partial Replacement

Squires Hall is a 235,000 gross square foot student center that was originally built in 1937, with an addition and renovation occurring in 1969. The facility houses multiple student activity functions and academic departments. This project proposal is to provide new space to relocate a portion of the student activities to bring it up to modern standards. A long range backfill program includes renovating the vacated portions to academic use.

15. Owens Dining Hall Renovation

Owens Hall is a 98,000 gross square foot dining facility constructed in 1939 with several small scale interior renovations, the latest completed in 1991. The building has accumulated substantial deferred maintenance and requires a major renovation to

continue service in the long term. This project proposes to implement interior and exterior renovations including restrooms, dining area, food service, and dining venue stations, and address deferred maintenance.

16. Electronic Door Access for Residential System

This project proses to install electronic door access to all doors within the residence hall system, which would allow for improved convenience and services to students including lost key services and real time central management of access.

Cooperative Extension/Agricultural Experiment Station Division

1. Eastern Shore Multipurpose AREC

This project envisions a 9,000 multipurpose building for the Eastern Shore Agricultural Research and Extension Center.

2. Middleburg Equine Arena

The current equine facilities at the Agricultural Research and Extension Center in Middleburg, Virginia are not adequate to support the research and outreach education activities. The proposed project is for a 16,000 gross square foot equine arena to accommodate the program needs.

Northwest Community Planning

The university is working on a major facility visioning exercise to develop a campus land bank. The location is the area south of the Inn at Virginia Tech on a portion of the remaining campus golf course. The program for the area is a residential college with capacity to house 2,100 students in six residence halls; a commons buildings with recreation, dining, and student activity space; the proposed new business school listed on Attachment A, and necessary utilities and infrastructure to support the new community.

Planning work is in the early stages with scope and program still in development. The major elements are listed at the bottom of Attachment B with range of magnitude costs displayed as low and high until more information is known.

The overall vision is being considered as a phased implementation as described below. The timing of the phases will be determined with refined planning work.

Phase One:

Residential College Facilities for 1050 students

This component envisions the construction of three new resident halls with 350 beds each and community space to support special programming.

University Commons

This component is envisioned as part of the Northwest community development to support the dining, recreation, and student activity space of the envisioned 2,100 students of this new community and the students of the existing special purpose housing community.

Infrastructure and Utilities

The existing land bank does have the necessary cooling, heating, parking, roads, power, or other infrastructure to support the envisioned development. This component will plan and implement the appropriate infrastructure.

Phase Two:

Residential College Facilities for 1050 students

This component is a second set of three new resident halls with 350 beds each and community space to support special programming. The combination of this component and the residential college facilities in phase one will establish the necessary capacity to house 2,100 students.

Phase Three:

Business School

This phase includes the new Business School listed on Attachment A. This building component will be integral to the community and may be implemented as state resources and private support become available.