

**Capital Project for Planning the Intelligent Infrastructure  
And Human-Centered Communities Destination Area**

**JOINT FINANCE AND AUDIT COMMITTEE  
AND BUILDINGS AND GROUNDS COMMITTEE**

**March 12, 2017**

The university has developed a significant initiative to advance a new model of collaborative education and research. The model creates an innovative learning environment that brings together faculty and students from various disciplines to promote interdisciplinary thinking and doing focused research on solving complex problems. Intelligent Infrastructure and Human-Centered Communities, one of the five original Destination Areas, will be the pioneering implementation of this new interdisciplinary environment. This Destination Area focuses on four interrelated themes: smart transportation, smart construction, energy systems, and ubiquitous mobility. The overall vision of the Destination Area includes \$78.4 million of university facility improvements that will be a multi-phased development occurring on the north side of campus, Plantation Road, and at the Virginia Tech Transportation Institute. The development is a system of orchestrated components that will be implemented as university capital projects, capital leases with the Virginia Tech Foundation, or operating projects. The implementation method and timeframe for each component is determined by costs, location, and funding status. The overall project includes the components listed below with costs shown in millions, the implementation method, and the status of its funding.

	Cost	Implementation Method	Funding Status
	(\$ in millions)		
<u>Intelligent Infrastructure and Construction Complex (Adjacent to Bishop-Favrao Hall)</u>			
Hitt Hall and Intelligent Infrastructure Building	\$25.00	capital project	ready
Smart Dining Hall	<u>25.00</u>	capital project	ready
	50.00		
<u>Autonomy Study Corridor</u>			
Unmanned Aerial Vehicle Learning Laboratory	1.35	operating project	underway
Hyperloop Team Space	0.50	operating project	underway
Planning for Road Bed	<u>0.20</u>	operating project	financing plan
	2.05		
<u>Smart Design and Construction Park at Plantation Road</u>			
Emergency Replacement Building for Storage	1.00	operating project	ready
High Bay Fabrication Facility, Phase 1	7.50	capital project	financing plan
Planning for Utilities, Energy, and Road	0.50	operating project	financing plan
Utility Installations	<u>1.00</u>	operating project	financing plan
	10.00		
<u>Virginia Autonomy Park at VTTI and Lipsey Farm</u>			
Urban Smart Track	3.50	capital lease	underway
Rural Smart Track	10.00	capital lease	financing plan
Lipsey Land Purchase	0.90	operating project	complete
Intern Hub	2.00	capital lease	financing plan
Smart Road	<u>-- --</u>	established	complete
	16.40		
<b>Grand Total for the Destination Area</b>	<b>\$78.45</b>		

The capital project and capital lease components total \$73 million and the operating components total \$5.45 million, for a grand total \$78.45 million of costs for the entire initiative. The university has funding and financing plans for each component; some components are underway, some components have funding plans ready for implementation, and some components have financing plans that require time to accumulate sufficient resources.

The \$73 million of capital outlay components include \$3.5 million for an Urban Smart Track at VTTI which is underway through an authorized capital lease, leaving an outstanding balance of \$69.5 million of capital projects to authorize. At this time, the university is requesting to move forward with a \$6 million planning authorization for the \$69.5 million of outstanding capital project and capital lease components.

The planning authorization will cover establishing a scope, schedule, delivery method, and complete design documents for each capital component. As with all self-supporting projects, the university has developed a financing plan to provide assurance regarding the financial feasibility of this planning project.

Because of the anticipated increased scope and complexity of the components of current and future Virginia Tech initiatives such as this Intelligent Infrastructure And Human-Centered Communities Destination Area, the university recognizes the funding challenges such initiatives will present. The university's approach will be to pursue a wide array of resources to address these initiatives, including private funding, self-generated revenues, research overhead recoveries, and external support from the private sector, and in some cases the federal and/or state government. Consistent with this philosophy, the funding plan for the Intelligent Infrastructure And Human-Centered Communities Destination Area calls for the use of private gifts, overhead funds, revenues derived from the Dining Services auxiliary, and future external support.

As funding for each component is ready (status shown above), planning work may commence. Upon completion of preliminary designs for each component, the university may return with a request to proceed with construction activity accordingly. As an illustration, funding is ready for the \$50 million Intelligent Infrastructure and Construction Complex; thus, planning work may commence immediately and subsequently proceed to construction with a separate full project authorization without interruption.

Under the 2006 Management Agreement between the Commonwealth of Virginia and the university, the Board of Visitors has the authority to approve the budget, size, scope, debt issuance, and overall funding of nongeneral fund capital outlay projects. This request is for a \$6.0 million planning authorization for the Intelligent Infrastructure System. Subsequent requests for construction funding for each capital component may be submitted after designs are underway and a firm scope is determined.

**RESOLUTION ON CAPITAL PROJECT FOR  
PLANNING THE INTELLIGENT INFRASTRUCTURE  
AND HUMAN-CENTERED COMMUNITIES DESTINATION AREA**

**WHEREAS**, the University has developed a significant initiative to advance a new model of collaborative education and research; and,

**WHEREAS**, the model creates an innovative learning environment that brings together faculty and students from various disciplines to promote interdisciplinary thinking and doing focused research on solving complex problems; and,

**WHEREAS**, Intelligent Infrastructure and Human-Centered Communities will be the pioneering implementation of this new interdisciplinary environment with a focus on developing integrated Smart Construction, Smart Transportation, Smart Energy, and Ubiquitous Mobility solutions to complex infrastructure problems; and,

**WHEREAS**, the overall vision of the Intelligent Infrastructure and Human-Centered Communities Destination Area is a \$78.45 million, multi-phased system of facilities occurring on the north side of campus, Plantation Road, and at the Virginia Tech Transportation Institute; and,

**WHEREAS**, the system of facilities will be implemented with \$73 million of capital projects and capital leases and \$5.4 million operating projects; and,

**WHEREAS**, the \$3.5 million Urban Smart Track at VTTI is underway through an authorized capital lease leaving an outstanding balance of \$69.5 million of capital projects to authorize; and,

**WHEREAS**, the University requests a \$6 million planning authorization to prepare construction drawings for the \$69.5 million of outstanding capital projects and capital leases; and,

**WHEREAS**, the University has developed 100 percent nongeneral fund resource plans for each component of the system that calls for the use of private gifts, overhead funds, revenues derived from the Dining Services auxiliary, and future external support; and,

**WHEREAS**, as funding for each component is ready, planning work may commence; and,

**WHEREAS**, the University may submit a subsequent request for construction funding for each component after designs are underway and a firm scope and budget is confirmed; and,

**WHEREAS**, under the 2006 Management Agreement between the Commonwealth of Virginia and the University, the Board of Visitors has authority to approve the budget, size, scope, debt issuance, and overall funding of nongeneral funded major capital outlay projects; and,

**NOW, THEREFORE BE IT RESOLVED**, that the University be authorized to move forward with a \$6 million planning authorization for the outstanding capital project and capital lease components of the Intelligent Infrastructure and Human-Centered Communities Destination Area.

**RECOMMENDATION:**

That the resolution authorizing Virginia Tech to plan the Intelligent Infrastructure System be approved.

April 3, 2017