RB23B
Bowie State University
University System of Maryland

New Natural Sciences Center (Prince George's County)

General Obligation Bonds **$3,100,000**

Summary of Recommended Bond Actions

1. Natural Sciences Center

   Approve preliminary design funds.

2. Bowie State University – New Fine and Performing Arts Building

   Approve de-authorization of remaining funds.

Bill Text: Provide funds to begin design of the new Natural Sciences Center.

Project Description: This project will design and construct the Natural Sciences Center (NSC) on the Bowie State University (BSU) campus. The building will replace the Crawford Science Building and address numerous facility problems such as insufficient class laboratories and support space; lack of specialized class laboratories; insufficient office space; and inadequate building systems. The proposed building will be constructed where the Wiseman Center is currently located. Once complete, the existing Crawford Building will be demolished. The fiscal 2013 budget includes funding for preliminary design.

Project Summary Information

Total Project Cost:	$89,393,000	**Cost Per Square Foot – Base:**	$315
Budget Estimate Stage:	Budget	**With Escalation and Contingencies:**	$373
Green Building:	Yes	**Gross Square Footage:**	148,995
Est. Completion Date:	October 2016	**Net Usable Square Footage:**	85,672
Project Design Cost %:	10.1%	**Building Efficiency:**	57.5%

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Project Analysis

The fiscal 2013 budget includes $3,100,000 for preliminary design. When completed, the new NSC facility will provide modern laboratory and office space for expanding BSU programs in physical sciences, nursing, and mathematics. The project scope also includes demolishing the Wiseman Center and the Crawford Science Building.

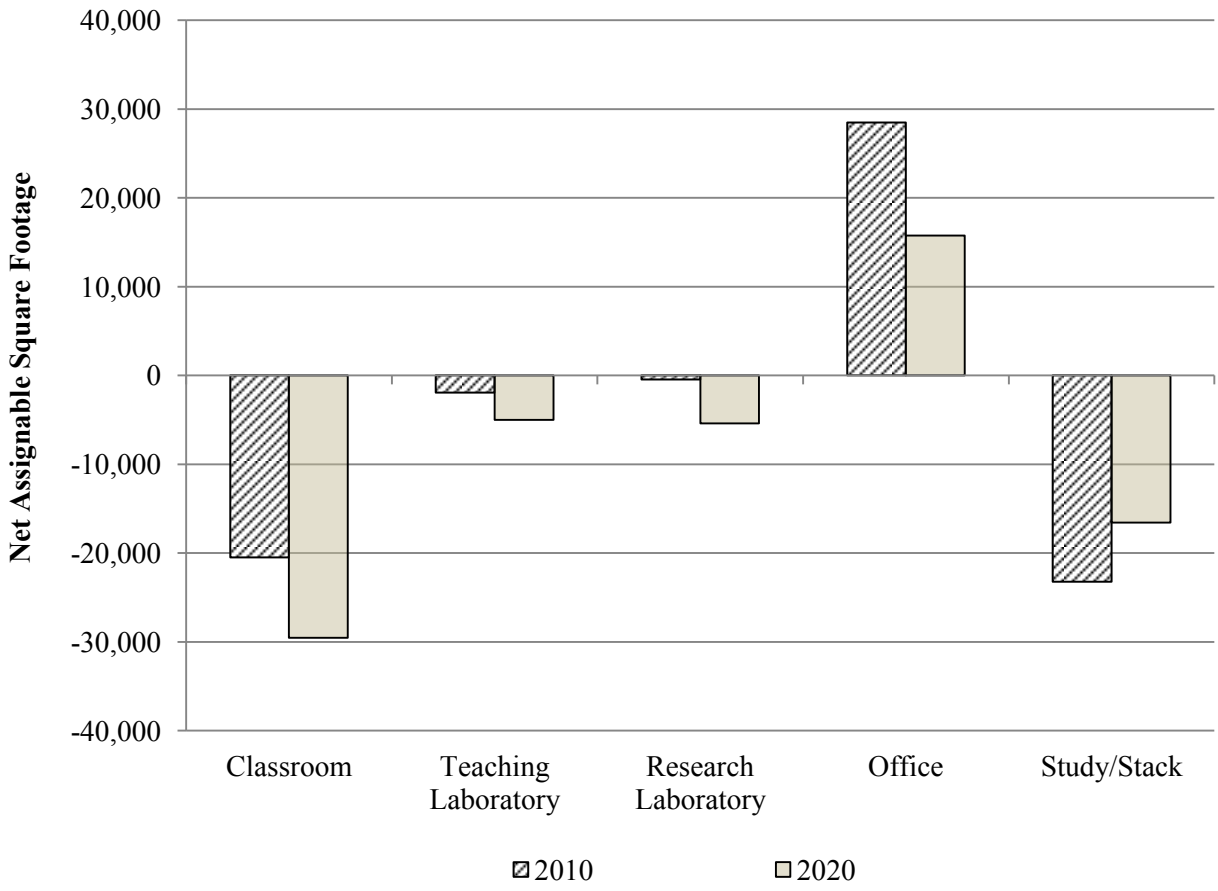
NSC will help improve BSU by creating a new teaching and research laboratory and classroom space. While the current science facility, the Crawford Building, offers about 15,000 net assigned square footage (NASF) for laboratory space, NSC will offer over 36,000 NASF for laboratory space. NSC also includes space for a greenhouse, lounge, central services, and data processing that are all important for improving educational spaces at BSU.

The total 2012 *Capital Improvement Program* (CIP) cost for NSC is $89,400,000. This now includes demolition costs for the Crawford Building, as BSU has abandoned plans to renovate the Crawford Building after the completion of NSC. The Crawford Building cannot accommodate the mechanical, electrical, and plumbing systems required for a modern science building. In addition, although the building was remodeled in 1991, it is estimated to be cost prohibitive to meet modern fire and Americans with Disabilities Act requirements due to structural design, such as low ceiling heights and interior load bearing walls.

As a result of this change, the project scope has expanded in the fiscal 2013 recommendation to include the Department of Nursing and the Department of Mathematics, as these departments will no longer be able to stay in the Crawford Building. While the nursing program is housed in the Center for Learning and Technology (CLT), it uses the Crawford Building for core science components. The CLT does not have space for program growth and the Crawford Building, as noted above, lacks sufficient space. The NSC will add extensive new laboratory space for the nursing program to increase enrollment and to provide specialized spaces that simulate various clinical spaces found in a hospital, such as an operating room or pediatric unit. The NSC will also offer modern facilities for hazardous material storage, which are not currently available in the Crawford Building. Classrooms will be larger to accommodate more students, and NSC will include a lecture hall that can seat 100 students. Office layouts will improve to meet the State guideline of 166 NASF, whereas the Crawford Building only offers 90 NASF per office.

According to the fall 2010 facilities inventory, BSU academic space totals 316,716 NASF, which includes 49,358 NASF of classroom space; 67,340 NASFF of teaching laboratory space; and 134,671 NASF of office space. **Exhibit 1** shows BSU's self-reported space deficiencies in fiscal 2010 and projected deficiencies in fiscal 2020. BSU currently has, and expects to have, space shortages in four of the five space categories. NSC would provide all five types of academic spaces that BSU needs and assist BSU in meeting expected enrollment growth and expansion of Science, Technology, Engineering, and Mathematics programs.

Exhibit 1
Academic Space Deficiency
(Net Square Footage)



Source: Maryland Higher Education Commission, Four-year Public Colleges and Universities Academic Space Surplus/Deficit: Fiscal 2010, Projected 2020

The NSC project includes the following components:

- demolish the Wiseman Center to create space on campus for construction of NSC;
- construct the modified NSC which now includes additional facilities for nursing and mathematics research and classes; and
- demolish the Crawford Science Building after NSC has been completed, as it is inadequate for current teaching needs.

This project also assists in an initiative by the University System of Maryland (USM) to increase the number of degrees awarded in Science, Technology, Engineering, and Mathematics (STEM) by 40% by 2020. In order to meet this goal, institutions will need to increase production of STEM degrees by approximately 2,200. USM states that achieving this goal will require an array of targeted strategies, such as convincing those interested in or enrolled in education programs to switch to STEM areas and notes it has seen some success in this area with a 20% increase in math and science education majors in the past fiscal year. NSC will assist in attracting students to STEM fields and retaining students over the course of their studies. In 2009, BSU rejected 30 qualified nursing students because it did not have the physical space to teach them. NSC would provide space for an expanding nursing program and would also attract and retain highly qualified STEM faculty and staff. Finally, as all undergraduate students are required to take a science class with a laboratory component, NSC will serve as a means to introduce all students to STEM disciplines.

Prior Authorization Modifications

The fiscal 2013 capital budget bill modifies one prior BSU project as summarized below.

- **New Fine Arts and Performing Arts Building:** The fiscal 2013 budget de-authorizes $2.995 million, leaving $29.058 million to construct and equip this facility.

Prior Authorization and Capital Improvement Program

Authorization Uses
($ in Millions)

Fund Uses	*Prior Authorization*	*2013 Request*	*2014 Estimate*	*2015 Estimate*	*2016 Estimate*	*2017 Estimate*
Acquisition	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
Planning	0.000	3.100	3.800	2.000	0.000	0.000
Construction	0.000	0.000	0.500	38.350	38.350	0.000
Equipment	0.000	0.000	0.000	0.000	3.000	0.300
Total	**$0.000**	**$3.100**	**$4.300**	**$40.350**	**$41.350**	**$0.000**

Authorization Sources
($ in Millions)

Fund Sources	*Prior Authorization*	*2013 Request*	*2014 Estimate*	*2015 Estimate*	*2015 Estimate*	*2017 Estimate*
GO Bond	$0.000	$3.100	$4.300	$40.350	$41.350	$0.300
Total	**$0.000**	**$3.100**	**$4.300**	**$40.350**	**$41.350**	**$0.300**

Executive's Operating Budget Impact Statement

($ in Millions)

	FY 2013	*FY 2014*	*FY 2015*	*FY 2016*	*FY 2017*
Estimated Operating Cost	$0.000	$0.000	$0.000	$0.061	$0.983
Estimated Staffing	0	0	0	0	3

According to the fiscal 2013 CIP, NSC will impact the fiscal 2016 operating budget due to general costs for fuel and utilities, supplies and materials, and amortized equipment at $61,000. Costs rise to $983,000 in fiscal 2017 to reflect 3 new positions required to maintain the facility and additional costs in running the building when it is completed in fiscal 2017.

GO Bond Recommended Actions

1. Approve authorization of funds for the New Natural Sciences Center.

2. Approve de-authorization of funds for the New Fine and Performing Arts Building at Bowie State University, project substantially complete.

Appendix 1

Capital Project Cost Estimate Worksheet

Department: Bowie State University
Project Number: RB23B
Project Title: New Natural Sciences Center
Analyst: Garret T. Halbach

Structure

New Construction:	148,995 Sq. Ft. X	$315.00 Sq. Ft. =			$46,933,425
New Construction:	0 Sq. Ft. X	$0.00 Sq. Ft. =			0
Renovation:	0 Sq. Ft. X	$0.00 Sq. Ft. =			0
Renovation:	0 Sq. Ft. X	$0.00 Sq. Ft. =			0
Built-in Equipment:					2,000,000
Demolition:					676,100
Information Technology:	148,995 GSF X	$0.00 GSF =			1,000,000
Telecommunications:					0
Miscellaneous – Other:					0
Miscellaneous – Other:					0
Miscellaneous – Other:					0
Subtotal					**$50,609,525**
Regional Factor:	100.0%				0
Subtotal					**$50,609,525**
Escalation to Mid-point:	4.75 Yrs. X	3.9%	=	18.50%	9,362,762
Total Cost of Structure (Bid Cost)					**$59,972,287**

Site Work and Utilities

Site Improvements:	2,530,476 + regional factor + mid-point escalation	$2,998,614
Utilities:	2,530,476 + regional factor + mid-point escalation	2,998,614
Project Subtotal (Bid Cost)		**$65,969,515**

Fees and Miscellaneous Costs

Green Building Premium:		2.0%	$1,319,390
Total Construction Contingency:		10.0%	6,596,952
Inspection Cost:		2.2%	1,451,329
Miscellaneous:	CPM Schedule		1
Miscellaneous:	CM Cost Construction Share		2,176,994
Miscellaneous:	Movable Equipment and IT		3,000,000
Miscellaneous:	Equipment Commission and Fees		1,259,418
A/E Fee through Construction Phase @		10.1%	7,619,479
Total Cost of Project			**$89,393,078**

Base Cost Per New Square Foot	**$315**
Adjusted Cost Per New Square Foot (incl. escalation, contingencies, and Green Bldg.)	**$419**
Base Cost Per Renovated Square Foot	**$0**
Adjusted Cost Per Renovated Square Foot (incl. escalation, conting., and Green Bldg.)	**$0**