

RB21
University of Maryland, Baltimore
 University System of Maryland

Capital Budget Summary

State-owned Capital Improvement Program
 (\$ in Millions)

Projects	Prior Auth.	2017 Request	2018 Est.	2019 Est.	2020 Est.	2021 Est.	Beyond CIP
Health Sciences Facility III	\$196.842	\$95.150	\$3.600	\$0.000	\$0.000	\$0.000	\$0.000
Central Electric Substation	0.000	5.000	2.890	11.000	12.000	12.000	36.522
Total	\$196.842	\$100.150	\$16.290	\$11.000	\$12.000	\$12.000	\$36.522

Fund Source	Prior Auth.	2017 Request	2018 Est.	2019 Est.	2020 Est.	2021 Est.	Beyond CIP
GO Bonds	\$155.792	\$86.000	\$6.490	\$11.000	\$12.000	\$12.000	\$36.522
Other	41.050	14.150	9.800	0.000	0.000	0.000	0.000
Total	\$196.842	\$100.150	\$16.290	\$11.000	\$12.000	\$12.000	\$36.522

CIP: *Capital Improvement Program*
 GO: general obligation

Summary of Issues

Cost Sharing an Expensive, New Project in the *Capital Improvement Program*: The fiscal 2017 *Capital Improvement Program* (CIP) has a new project for an electrical substation to power the University of Maryland, Baltimore (UMB) campus. This project is not only new to the CIP but also very expensive, with a current estimate of around \$80.0 million in total. Adding such a large project to the CIP has disrupted the timing of funding for other projects in the CIP.

Summary of Recommended Bond Actions

	<u>Funds</u>
1. Central Electric Substation and Electrical Infrastructure Upgrades	\$2,500,000 GO
Reduce general obligation bond support and add language for a report on cost sharing.	
2. Central Electric Substation and Electrical Infrastructure Upgrades	
Reduce general obligation bond support and add language for a report on cost sharing.	
3. Health Sciences Research Facility III and Surge Building	
Approve.	
4. SECTION 12 – University of Maryland, Baltimore – Health Sciences Research Facility III	
Approve the pre-authorization for the 2017 session.	
Total Reductions	\$2,500,000 GO

Budget Overview

UMB has two projects in the fiscal 2017 CIP.

Health Sciences Facility III

The Governor's proposed 2016 session capital budget includes \$81.0 million to continue construction and to purchase equipment for the Health Sciences Facility (HSF) III. This new research building is very large, at just under 225,000 net square feet, and will cost \$305.4 million when completed, including \$65.0 million in combined nonbudgeted funds from UMB and the University of Maryland Medical System (UMMS).

The fiscal 2017 budget bill programs \$81.0 million in State support to continue construction and begin equipping HSF III in fiscal 2017, the same amount that was pre-authorized in the Maryland Consolidated Capital Bond Loan of 2015 for the 2016 session. Nonbudgeted fund support from UMB has remained fixed at \$65.0 million, and State support through general obligation (GO) bonds totals \$240.4 million. The University of Maryland Medical Center will contribute at least \$10.0 million toward UMB's total planned contribution to the total cost of HSF III. UMB reports that the total nonbudgeted fund support of \$65.0 million has been secured. Overall, despite the project's scope and cost, there are no significant changes to the design, net assignable square feet (NASF), cost, or construction scheduling from the prior year.

The total project cost had been increased about 10% in fiscal 2015 due to an increase in the scope of the building – the revised plan added 2 shell floors to the structure so that the entire facility now includes a basement, 10 occupied floors, and 2 mechanical floors. The first 6 floors have a slightly larger footprint due to added dry laboratory components. Floors 7 through 10 are slightly smaller. Overall, the only change so far has been the design phase extending one month, which concluded in October 2014. The final construction completion date remains September 2017.

To date, prior authorizations totaling \$196.8 million covered design, demolition costs, and some construction costs. The fiscal 2014 budget provided \$21.6 million to complete design, begin site work, and demolish Hayden Harris Hall to ready space for HSF III at UMB's downtown Baltimore City campus. Demolishing the 40-year-old vacant Hayden Harris Hall, the former dental school building, was necessary as UMB found this building could not accommodate the mechanical, electrical, and plumbing systems required for a modern research building. The dental school was relocated to a new, adjacent building in 2006. Demolition began in July 2013 with asbestos abatement and interior work and concluded in February 2014. All site work and excavation activities, including relocation of underground utilities, were then completed by July 2014. Construction officially began in June 2014. The fiscal 2015 budget provided \$49.0 million and the fiscal 2016 budget provided \$81.6 million, both to continue construction of HSF III.

HSF III will augment UMB's medical research programs by adding new research laboratory and office space. While the current science facilities were built with prior best practices of offering

about half the laboratory support space in relation to laboratory space, current guidelines suggest that there needs to be a one-to-one match of laboratory space to laboratory support space, which includes cold rooms, tissue culture rooms, and freezers. This is due to the expanding nature of many federal research grants. Additionally, HSF II did not add any animal facility space, so HSF III would create nearly 20,000 NASF of vivarium space. It also offers approximately 133,000 NASF in research laboratory space and 22,000 NASF in office space. Unlike many other higher education capital projects, HSF III includes no classroom space, as laboratory space does not technically generate any weekly student contact hours, even though graduate students may be working in these laboratories.

The two unfinished shell floors will total about 44,000 NASF. This accounts for the majority of the 45,639, or 25.4%, increase in NASF over the original design plan in fiscal 2014. As stated in prior years, UMB does not plan to seek additional State GO bond support to finish these floors. For this modification, UMB essentially swapped out planned renovations for Howard Hall in the CIP for the shell space. The current plan is to complete the shell space soon after HSF III construction ends using research grants and federal contracts, which allow equipping and space finishing. UMB has used this process in the past for facilities belonging to the School of Medicine. Although there is currently concern over levels of federal research grants given federal sequestration and other ongoing federal reductions, UMB is confident that it will be able to obtain funding to finish the shell space in HSF III.

Central Electric Substation and Electrical Infrastructure Upgrades

The second project in fiscal 2017 programs \$5.0 million in State support to design construction of a new electrical substation for UMB and related, supporting subprojects. This requires acquiring land to relocate an existing recycling facility as the recycling facility occupies the ideal site for the new substation, as well as upgrading the existing electrical infrastructure of the campus. The total estimated cost in the five-year CIP is \$42.9 million, but the project is currently planned to extend until fiscal 2025 and cost approximately \$79.4 million. However, this final project cost is very preliminary as there are several subprojects and phases, and UMB does not yet have a firm grasp on how much electrical work is actually necessary. As currently envisioned, the total project will consist of:

- acquiring land for the new recycling station;
- designing and constructing the new recycling station on that land;
- demolishing the old recycling station to create space for the new substation;
- designing and constructing the new substation;
- repairing or replacing existing electrical conduits to UMB's facilities from both the new and existing substations; and
- renovating the switchgear of the existing electrical substation.

This will be a lengthy, complicated, and expensive project coming directly on the heels of HSF III. UMB considers this project to be a life and safety issue as the existing electrical substation, located 40 feet below ground on Greene Street, is approximately 50 years old and is unfortunately located over a high water table, so it is susceptible to water penetration. Replacement parts for this substation can only be found with difficulty on the secondary market. In the event of an outright failure, the entire UMB campus may be forced to shut down, jeopardizing the safety of students, faculty, and patients, as well as tens of millions of dollars in scientific research. The station has recently failed twice, once in November 2011 due to a part failure which knocked out power for 12 hours, and again in January 2016 due to a water leak. The latter outage cut power to 20 buildings for 2 hours. Fortunately, this was during an academic break, so fewer students and faculty were on campus, and it was during the winter when electrical demand is significantly lower than in the summer. If such an event happened in the summer months, UMB would be forced to switch entirely to backup generators that are extremely expensive and only viable for short amounts of time.

The existing, failing substation sits to the south of campus to connect to a transformer station operated by Baltimore Gas and Electric (BGE) near Camden Yards. UMB wants to build the new substation on the recycling plant's site because the electrical duct bank to that site already exists and that it is university-owned property on the north side of the campus that will enable the new substation to connect to an entirely different BGE station. This will give greater redundancy to the campus' power grid. Unfortunately, the electrical duct bank, which contains the cables from the existing substation to UMB's facilities, is many decades old. As UMB makes upgrades to the cabling, it has to access electrical duct banks, which increasingly fail or collapse, requiring on-the-spot replacement. Part of this project would be a thorough inventory of the integrity of the electrical duct banks and replacing what is in poor condition.

Finally, UMB's electrical demand is steadily increasing by about 2% a year. When HSF III comes online in fiscal 2018, UMB will not yet exceed maximum electrical capacity, but it will put UMB on a trajectory to exceed capacity no later than fiscal 2024. Outside of this project, UMB does not have a realistic way to satisfy its own electrical needs. All of these improvements are informed by a UMB *Infrastructure Investment Plan* finished in April 2015.

Issues

1. Cost Sharing an Expensive, New Project in the *Capital Improvement Program*

Need for Substation Foreseeable

As indicated in UMB's 2015 *Infrastructure Investment Plan*, UMB has never come close to meeting the University System of Maryland (USM) Board of Regent's (BOR) goal for institutions to reinvest 2% of facilities replacement value annually. Due to prior decisions to underfund facilities maintenance, UMB estimates current deferred maintenance costs to be more than \$300 million and the replacement value of facilities systems at \$2.3 billion. The electrical substation project is part of that

price tag and is also new in the fiscal 2017 CIP. While UMB had incorporated elements of this project in one previous request under an umbrella campus infrastructure improvements package to the USM BOR for fiscal 2016, this project was never included in a prior CIP. Although UMB felt the urgency for this project increase greatly in recent years (even before the January 2016 power failure), it is not clear what the institution's long-term plan was, given the addition of several large new buildings to campus and ever growing electricity consumption flowing through one substation built in 1966.

Given the necessity of sufficient and reliable electricity to UMB, both for its academic and research efforts, the Department of Legislative Services (DLS) recognizes the importance of this project. However, the \$79.8 million price tag is uninformed by design work, and the USM cost center does not have nearly as much experience dealing with planning large-scale utility infrastructure in a dense urban setting as it does with the academic buildings frequently included in the CIP.

The President should comment on the lack of long-term infrastructure planning and maintenance that brought UMB into a position where it finds its electrical distribution system compromised and failing.

Fiscal Constraints on State Resources

The Governor's 2016 CIP sets annual new GO bond authorizations at \$995 million. This is the second consecutive year that the Governor's CIP has reduced planned GO bond authorization levels. Relative to the plan articulated in the December 2014 Spending Affordability Committee Report, the current CIP reduces GO bond authorizations level by \$1.17 billion over just the five years covering fiscal 2017 through 2021. Fulfilling many of the State's capital infrastructure needs will require creative funding solutions including partnerships and shared funding responsibilities with the State's higher education institutions. With respect to higher education, the State's primary focus should be in providing funds that support projects that expand or enhance facilities that support student access to degrees and research opportunities. Projects that are essentially facilities renewal, while important in their own right, should be secondary in priority and considered and evaluated under cost sharing options in order for the State to focus funding to support new or renovated academic space.

UMB was able to provide significant nonbudgeted support for HSF III, and there are several major stakeholders in Baltimore City who would benefit from a stable and modernized electrical grid in the urban core. To date, Baltimore City and BGE have not indicated a great willingness to work with UMB on this project in spite of conduit maintenance fees recently increasing to ensure that the electrical conduits do not fail. UMB does indicate that UMMS may be interested in contributing money for replacing conduits that serve both UMB and UMMS buildings on the south side of campus, indicating one potential partnership for this capital project.

DLS recommends that the State cost share the entire electrical substation project 50/50 with UMB, which would reduce the fiscal 2017 authorization by \$2.5 million in GO bonds. DLS also recommends narrative requesting a report from UMB identifying how it will cost share this project using institutional resources.

Operating Budget Impact Statement

Executive’s Operating Budget Impact Statement – State-owned Projects (\$ in Millions)

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Health Sciences Facility III					
Estimated Operating Cost	\$0.000	\$4.540	\$9.613	\$9.760	\$9.912
Estimated Staffing	0	10	11	11	11
Central Electric Substation					
Estimated Operating Cost	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
Estimated Staffing	0	0	0	0	0
Total Operating Impact					
Estimated Operating Cost	\$0.000	\$4.540	\$9.613	\$9.760	\$9.912
Estimated Staffing	0	10	11	11	11

According to the 2016 CIP, HSF III will impact the fiscal 2018 operating budget by about \$4.5 million due to general costs for fuel and utilities, supplies and materials, and amortized equipment. Costs also include 10 new regular positions to maintain the facility, the same as the prior CIP.

Pre-authorizations

Exhibit 1 shows HSF III pre-authorized in fiscal 2018 for \$3.4 million.

Exhibit 1 Pre-authorizations (\$ in Millions)

<u>Project</u>	<u>FY 18</u>	<u>FY 19</u>	<u>FY 20</u>	<u>Reason</u>
Health Sciences Facility III	\$3.400	\$0.000	\$0.000	Pre-authorizations are required for Board of Public Works approval of the construction contract in fiscal 2017.

Source: Department of Budget and Management, 2016 *Capital Improvement Program*

GO Bond Recommended Actions

1. Reduce general obligation bond support and add language for a report on cost sharing.

RB21A	Central Electric Substation and Electrical Infrastructure Upgrades	\$ 2,500,000
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<u>Allowance</u>	<u>Change</u>	<u>Authorization</u>
5,000,000	-2,500,000	2,500,000

Explanation: This reduces State general obligation bond support by \$2.5 million and adds language for a report for the University of Maryland, Baltimore to determine how it will cost share this project.

2. Reduce general obligation bond support and add language for a report on cost sharing.

Report on Cost Sharing the Electrical Substation Project: The budget committees are concerned by the appearance of the University of Maryland, Baltimore’s (UMB) new, large capital project in the 2016 Capital Improvement Plan, the electrical substation project, despite ongoing need for new or renovated academic buildings across higher education. UMB should submit a report by December 1, 2016, on how it will cost share this project equally between State and institutional funds.

Information Request	Author	Due Date
Report on cost sharing the electrical substation project	UMB	December 1, 2016

3. Approve the \$81 million in general obligation bonds for the construction of the Health Sciences Research Facility III on the campus of the University of Maryland, Baltimore.
4. Approve the pre-authorization of \$3.4 million in general obligation bonds for the 2017 session for the construction of Health Sciences Facility III on the campus of the University of Maryland, Baltimore.

Total General Obligation Bonds Reduction	\$2,500,000
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