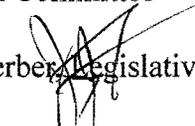


ED #1
March 5, 2012
Worksession

MEMORANDUM

TO: Education Committee

FROM: Justina Ferber,  Legislative Analyst

SUBJECT: FY13-18 Capital Improvements Program for Montgomery College

The following individuals will be present to discuss the Montgomery College CIP:

Dr. DeRionne Pollard, President
Cathy Jones, Senior Vice President for Administrative and Fiscal Services
David Capp, Vice President of Facilities and Security
Susan Madden, Chief Government Relations Officer
John McLean, Director of Capital Planning and Design
Kristina Schramm, Capital Budget Manager
Bryan Hunt, OMB Analyst
Angela Dizelos, Manager, OMB

Background

The Education Committee discussed the FY13-18 Capital Improvements Program for Montgomery College on February 13 and took action on all College CIP projects except one. The Information Technology Project was deferred until after the Interagency Technology Policy and Coordination Committee (ITPCC) meeting on February 29th. Unfortunately, the ITPCC postponed its February meeting, and has not been rescheduled. The good news, however, is that the Council's technology specialist, Dr. Torgas, is working with the College and Executive Staff to explore solutions for the FiberNet needs of the College.

In addition to discussing the Information Technology Project, the Committee asked for additional information related to architectural and engineering design costs and the Executive's 10% reductions in funding of construction costs for some projects by recommending value engineering or design modifications to reduce costs.

Information Technology Project

The issues discussed by the ED Committee with regard to the Information Technology Project are identified below under “2/13 Committee Discussion”.

INFORMATION TECHNOLOGY PDF at ©1

Page	Description		FY13-FY18	FY13	FY14
CIP 38-13	Design/installation/construction of College Information	College Request	\$52,077,000	\$9,577,000	\$8,500,000
38-14	Technology Systems	Executive Rec	\$42,500,000	\$0	\$8,500,000

Executive Recommendation: Reduce FY13 expenditures to zero as the project has significant carryover amounts available from prior years.

2/13 Council Staff Comments: The Committee should discuss the Executive’s recommendations on numerous College projects that IT costs be funded through College IT Project No. 856509 which is this project. The Executive’s recommendation for the funding of all IT equipment in this project is contradictory to the ED Committee’s previous consensus that each project should receive funding necessary to fully prepare the facility for its intended use. There is no additional funding in FY13 for this project. There are also issues related to FiberNet in this project. Executive staff and College representatives have been in discussions about FiberNet issues.

2/13 Committee Discussion: College representatives explained there was a misunderstanding that this PDF had \$10 million set aside for resolution of FiberNet issues (see discussion under staff recommendation) and advised that funding of \$9.57 million was requested in the PDF for College IT projects.

The ED Committee discussed the following issues:

- The discussions between the County and the College on FiberNet and wide area network issues and how IT decisions could affect some College projects. (There was an expectation that issues related to the College’s FiberNet requirements might be resolved at the ITPCC meeting scheduled for February 29th.)
- The College’s Gartner study - an analysis of the upgrading of inter-campus network connectivity - that was underway (which was completed February 24 and is now circulating).
- The Executive’s recommendation for reductions in IT costs for some projects by funding them through the Information Technology Project. Those projects that were reduced and funding expected from the Information Technology project are: Bioscience Education Center - \$2,236,000 for FY14; Germantown Science and Applied Studies -\$376,000 for FY16; Germantown Student Services Center -\$1,652,000 for FY17; Rockville Student Services Center - \$1,817,000 for FY15-16; Science West Building Renovation -\$1,521,000 for FY15. The recommendations differ from the ED Committee consensus in FY12 that projects should receive the funding necessary to prepare a facility for use.

2/13 Committee Action: The Committee agreed to delay action on this project until FiberNet and other issues have been discussed by the ITPCC on February 29.

3/5 Council Staff Discussion and Recommendation: The ITPCC postponed its February 29 meeting; however, the College and County continue to work on the resolution of FiberNet issues. The College requested \$9.57 million for FY13 for the Information Technology project and the appropriation recommendation from the Executive is zero for FY13 based on the Executive's understanding that \$10 million was set aside for the FiberNet Project.

Council staff requested and received an explanation regarding the misunderstanding about the funding for the FiberNet project. Staff understands that the College was prepared to combine end of year operating funds with CIP funds to accomplish the FiberNet project which was originally priced at \$8.6 million. However, the FiberNet project was delayed so funding was reallocated back to operating expenses and to previous CIP technology projects and therefore the funds are no longer available. More detailed information is on file with Council staff.

Funding is placed in this PDF each year so that money is allocated for design, installation, and construction of College information technology systems including, data, video, cybersecurity, software services, classroom technology, voice applications and associated cable systems, equipment storage and replacement/upgrade of IT equipment. The College has over 200 IT projects at present. If no funding is available for FY13, then some maintenance and other IT work will not be accomplished

Whether or not FiberNet issues are resolved tomorrow or in June, the College will still require funding for its Information Technology Project. Staff recommends that the Committee place \$4 million in current revenue funding in FY13 for the Information Technology Project. Four million is approximately the amount of the recordation tax that the College could have received for the Information Technology Project. (Revenue from the recordation tax is allocated at \$2.50 per \$1000 for MCPS capital and College educational technology.) There should also be carryover from FY12 which should provide additional funds for maintenance and upgrades.

Information Requested by the Committee

Executive's 10% Reduction in Funding of Various Projects

Also on February 13, the Committee discussed the Executive's recommendations for a 10% reduction in construction costs for some projects with a recommendation for value engineering or design modifications to cover the reductions in funding. These projects include the Germantown Student Services Center -\$6,571,000 for FY17 and the Rockville Student Services Center -\$5,356,000 for FY15-16. The Committee asked for the following information:

- The basis for the reductions in construction funding due to value engineering and design modifications.
- A description of benchmarks or comparables used when comparing costs.

OMB prepared the chart on the next page which shows the average cost per gross square foot for Montgomery College construction at \$393.97. A comparison of the \$393.97 was made to the national median of \$339.08 per gross square foot for academic buildings as reported in the 2011

College Construction Report by *College Planning and Management* magazine. A copy of the magazine which is nationally recognized by architects, planners, administrators and government agencies is attached at ©3-10. The \$339.08 cost is 16% less than the Montgomery College average calculated below and OMB felt that Montgomery College's costs per gross square foot should be no more than 10% above the national average.

	A	B	C	D	E	F
2	Type	Project Name	Gross Sq Ft (G SF)	Est CON Cost	Cost per G-SF	Median Nationwide Academic \$339.08
16	Montgomery College FY13-18 As Requested					Dollar cost delta b/w Median Sq Ft cost and MC requested Sq Ft cost
17	Open class labs, class rooms, office and support space	GT Science & Applied Studies Phase 1 Renovation	71,082	\$ 28,512,000	\$ 401.11	\$ 62.03
18	Cafeteria, bookstore, mailroom, admissions, student life, financial aid, academic computing	GT Student Services Center	150,000	\$ 65,712,000	\$ 438.08	\$ 99.00
19	Cafeteria, bookstore, mailroom, admissions, student life, financial aid, academic computing	RV Student Services Center	125,322	\$ 53,566,000	\$ 427.43	\$ 88.35
20	General purpose classrooms, mathematics, education departments	RV Science East Building Renovation	53,737	\$ 24,475,000	\$ 455.46	\$ 116.38
21	Math department faculty offices, Math learning facilities	RV Science West Building Renovation	62,982	\$ 26,498,000	\$ 420.72	\$ 81.64
22	Biology, Chemistry, Physical Sciences, Mathematics disciplines	Takoma Park/ Silver Spring Math & Science Center	134,600	\$ 29,510,000	\$ 219.24	\$ (119.84)
23				Avg \$ Cost/G SF -->	\$ 393.67	\$ 54.59

Of particular interest is the chart at the top of report page CR6 (duplicated on the next page) which shows the costs of new college buildings currently underway and is the basis for OMB's \$339.08 figure. Council staff has calculated the average cost for all building types (except residence halls) under the median quartile on the chart and that figure is \$342.92 per square foot also calculated is the average cost for all types of buildings (except residence halls) under the high quartile on the chart and that figure is \$506.94 per square foot.

5 PROFILE OF NEW BUILDINGS CURRENTLY UNDERWAY

Building Type	Median Size (Sq. Ft.)	Median Cost	COST PER SQ. FT.			Buildings in Sample
			Low Quartile	Median	High Quartile	
Academic	76,480	\$25,200,000	\$246.12	\$339.08	\$434.00	74
Health Related	63,000	\$20,000,000	\$258.06	\$350.00	\$460.00	39
Library/Media	57,564	\$24,500,000		\$346.29	\$481.82	10
Performance	83,000	\$25,039,820	\$161.29	\$323.51	\$416.67	11
Physical Education	65,000	\$20,000,000	\$200.00	\$400.00	\$700.00	19
Residence Halls	102,099	\$23,000,000	\$156.86	\$187.67	\$259.79	28
Science	88,650	\$42,250,000	\$342.86	\$503.43	\$626.79	54
Student Center	67,000	\$21,000,000	\$258.24	\$300.00	\$380.60	25
Technology	43,332	\$11,200,000	\$190.48	\$236.04	\$620.00	8
Vocational	33,000	\$8,950,000	\$140.91	\$287.95	\$439.56	8

To read this table: The median academic building in this sample of buildings recently completed or currently being constructed will contain 76,480 sq. ft. and will cost \$25.2M. The median cost will be \$339.08 per sq. ft. One quarter of the academic buildings will cost \$246.12 per sq. ft. or less. At the other end of the scale, one out of four academic buildings will cost \$434 per sq. ft. or more. This information was gathered from a sample of 74 academic buildings completed in 2010 or currently under construction.

OMB advises that multiple data sources were used in comparing the College's gross square footage (GSF) costs:

- The College provided information in November 2011 showing their project costs and construction costs per GSF, plus other Maryland Community Colleges' FY13 construction budget costs per GSF.
- A spreadsheet with 11 MCG/MCPS projects consisting of 2 libraries, recreation center, 2 fire stations, police station, animal shelter, Bethesda Lot #31, an Elementary, Middle, and High School. Data sources for MCG/MCPS projects were the latest approved PDFs and MCPS CIP as of November, 2011. Six Montgomery College projects and 15 State college projects were also reviewed. Data sources were the College's CIP submission; for the State items, the State DBM 2012 Capital Improvements Plan.
- For national information OMB used the *College Planning and Management Magazine* 2011 College Construction Report which looked at a sample size of 276 college buildings in 10 categories. See ©3-10.
- MC's 2006-2016 Facilities Master Plan maps of the three campuses to visually show how everything integrates together. CIP staff also took site visits to all three campuses.

Architectural and Engineering Design Costs

The Committee also discussed issues related to design costs and the state's potential cap of 13% for design costs. The Committee asked for the following information:

- Historical data from the College on design costs for the Rockville Science Building and other buildings including the percentage cost for design of the total cost.
- A breakdown of the elements included in design costs e.g. inspections, traffic studies etc.

The College has provided the following information and attachments:

Montgomery College Response to ED Committee – 3/5/12

The following materials support the College's current Planning, Design, and Supervision (PDS) costs requested in the FY13 Capital Budget. After researching historical PDS costs beginning in FY2005, nearly all the MC projects had PDS costs as a percentage of construction costs at 21%. (This is shown in Attachment 1: Planning, Design, and Supervision Costs.) A case study, based on the Rockville Science Center, was conducted to determine factors over the funding cycle of the project that affect the Planning, Design, and Supervision costs as a percentage of construction costs. This case study resulted in the following documents:

- **Rockville Science Center Case study (Attachment 2)** - contains a narrative by fiscal year for the funding cycle of this project.
- **Design Costs over the Funding Cycle for the Rockville Science Center (Attachment 3)** - is a spreadsheet that shows how the PDS costs as a percentage of the construction costs changed over the funding cycle of the project.
- **Planning, Design, and Supervision Components (Attachment 4)** – is a table that shows PDS components that were included in the Rockville Science Center project, but the components are typical of most College construction projects.

From this data, we were able to determine that the Planning, Design, and Supervision costs as a percentage of construction decreased over the funding cycle of this project due to State cost escalation factors, which increased construction costs while PDS costs remained the same.

Other factors that drive the Planning, Design, and Supervision costs are: the complexity of the project; cost of managing projects to meet complex, competing, and more restrictive regulatory obligations (for example: Storm Water Management, and Forest Conservation Regulations); and review fees, permit fees, and additional bonding costs charged by local jurisdictions and utility companies, where in the past there were informal agreements between parties to waive these fees. All of these cost factors mentioned previously result in higher project Planning, Design, and Supervision costs.

Planning, Design, and Supervision Costs
(as a percent of construction)

Project	Planning, Design, and Supervision (PDS) Budget	A/E Contract	Soft Costs	Construction Budget	FFE Budget	Other Budget	Total Budget	PDS as a Percent of Construction After Escalation	2005 Original Planning, Design, and Supervision Budget	2005 Original Construction Budget	Original PDS as a Percent of Construction Before Escalation
Germantown Bioscience Education Center	9,546,000	5,228,612	4,317,388	64,326,000	14,413,000	-	88,285,000	14.8%	8,010,000	38,135,000	21%
Germantown Childcare Center ¹	249,510	249,510	-	2,751,000	162,000	-	3,162,510	9.1%	n/a	n/a	n/a
Rockville Science Center	6,992,000	4,690,093	2,301,907	58,810,000	8,488,000	-	74,290,000	11.9%	7,790,000	37,078,000	21%
Rockville Science East Building Renovation	2,853,000	2,549,952	303,048	24,475,000	6,574,000	-	33,902,000	11.7%	1,865,000	8,873,000	21%
Rockville Science West Building Renovation	3,062,000	2,501,531	560,469	26,498,000	6,976,000	-	36,536,000	11.6%	2,007,000	9,555,000	21%
TPSS Commons Renovation	1,176,000	711,317	464,683	7,445,000	391,000	-	9,012,000	15.8%	905,000	4,971,000	18%
TPSS Cultural Arts Center	2,917,000	2,126,817	790,183	27,822,000	-	-	30,739,000	10.5%	n/a	n/a	n/a
TPSS Nunley Student Services Center	3,418,000	1,420,000	1,998,000	21,392,000	-	-	24,810,000	16.0%	n/a	n/a	n/a
TPSS Cafritz Foundation Arts Center	2,650,000	n/a	n/a	30,000,000	-	-	32,650,000	8.8%	n/a	n/a	n/a
TPSS Expansion ²	13,771,356	n/a	n/a	70,530,644	8,832,000	11,975,000	105,109,000	19.5%	n/a	n/a	n/a
Total	46,634,866			334,049,644	45,836,000	11,975,000	438,495,510				

¹There was an anticipated design shortfall in this project due to delays, and Bowie Gridley design costs of \$192,510 is included in the design budget, even though this amount was funded through operating budget.

²When the College was directed to move the Cultural Arts Center out of Jessup B. Park, the bridge, and the Cultural Arts design development had to be redesigned. Also, Bovis CM Services of \$4.5 million deducted from design, and included in construction cost due to new methodology.

Project	Planning, Design, and Supervision (PDS) Budget	A/E Contract	Soft Costs	Construction Budget	FFE Budget	Other Budget	Total Budget	PDS as a Percent of Construction
GT SA Building Renovation Phase 1	5,346,000	n/a	n/a	28,512,000	5,030,000	-	38,888,000	18.8%
Rockville Student Services Center	10,718,000	n/a	n/a	53,566,000	11,670,000	-	75,954,000	20.0%
Germantown Student Services Center	13,144,000	n/a	n/a	65,712,000	13,162,000	-	92,018,000	20.0%
TPSS Math and Science Center	11,804,000	n/a	n/a	59,020,000	4,428,000	-	75,252,000	20.0%

Project	Planning, Design, and Supervision (PDS) Budget	A/E Contract	Soft Costs	Construction Budget	FFE Budget	Other Budget	Total Budget	PDS as a Percent of Construction
TPSS West Garage	1,390,000	1,051,516	338,484	14,460,000	40,000	-	17,280,000	9.6%
Rockville Parking Garage	3,952,000	n/a	n/a	30,268,000	-	-	34,220,000	13.1%

ATTACHMENT 2

Rockville Science Center Case Study – 02/28/12

The fiscal year 2005 was used as a starting point for this case study of the Rockville Science Center appropriation requests, and approvals.

FY2005

During FY2005, the funds requested for the Rockville Science Center were: \$7,790,000 for Planning, Design, and Supervision; \$37,078,000 for construction; and \$5,912,000 for other/Furniture, Fixtures, and Equipment (FFE). ***The Planning, Design, and Supervision (PDS) as a percent of construction equaled 21%.***

FY2006

During FY2006, the funds appropriated for the Rockville Science Center were: \$6,200,000 for Planning, Design, and Supervision (funds requested \$7,790,000); \$37,078,000 for construction; and \$5,912,000 for other/FFE. This was the second year in the biennial capital budget, and the construction, and other/FFE amounts remained the same. ***The Planning, Design, and Supervision (PDS) as a percent of construction equaled 17%.***

FY2007

During FY2007, the funds approved for the Rockville Science Center were: \$6,200,000 for Planning, Design, and Supervision. During this fiscal year, the County OMB did not print the Project Description Form. From reviewing the "Funding Detail By Revenue Source" report that was published, there was \$23,400,000 remaining in the project for construction and other.

FY2008

During FY2008, the funds requested for the Rockville Science Center were: \$6,200,000 for Planning, Design, and Supervision (appropriated in FY2006); \$56,405,000 for construction; and \$7,401,000 for other/FFE. There are some key items that affect the design cost as a percentage of construction. ***The construction costs have increased from FY2005 by \$19,327,000, which drives down the Planning, Design, and Supervision (PDS) percentage to 11%.***

This increase was due to State cost escalation factors over the past 3 years, which were 8% in 2006, 8% in 2007, and 5% in 2008. Another factor that increased construction costs is the size of the building was slightly larger than initially requested in FY2005. The design costs remained fixed from FY2006 to FY2008, while the construction increased, which resulted in a lower PDS percentage.

ATTACHMENT 2 (continued)

Another factor that decreases the PDS percentage as a cost of construction is that the Planning, Design, and Supervision costs have decreased by \$1,590,000, which also results in a lower PDS percentage.

FY2009

During FY2009, the funds requested for the Rockville Science Center were: \$6,992,000 for Planning, Design, and Supervision (appropriated in FY2006/\$600,000 approved in FY2009/\$192,000 in FY2010 for CM); \$58,810,000 for construction (appropriated in FY2009); and \$7,772,000 for other/FFE. ***Planning, Design, and Supervision (PDS) as a percentage of construction = 12%***

Significant changes:

- Planning, Design, and Supervision (PDS) increased by \$792,000 (FY2009, and 2010)
- Construction increased by \$2,405,000, or 5% from the FY2008 Capital Budget due to MD State escalation
- FFE increase by \$371,000, or 5% from the FY2008 Capital Budget due to MD State escalation

FY2010

During FY2010, the funds requested for the Rockville Science Center were: \$6,992,000 for Planning, Design, and Supervision (approved in FY2006/\$600,000 approved in FY2009/\$192,000 in FY2010); \$58,810,000 for construction (approved in FY2009); and \$8,122,000 for other/FFE.

The Planning, Design, and Supervision (PDS) costs and construction costs have essentially been locked into place due to prior appropriation approval in FY2009. Also, for FY2010 the FFE has been escalated by the State escalation factor of 4.5%.

FY2011

During FY2011, the funds requested for the Rockville Science Center were: \$6,992,000 for Planning, Design, and Supervision (approved in FY2006/\$600,000 approved in FY2009/\$192,000 in FY2010); \$58,810,000 for construction (approved in FY2009); and \$8,488,000 for other/FFE.

The PDS costs and construction costs have essentially been locked into place due to prior appropriation approval in FY2009. The FY2011 FFE has been escalated by the State escalation factor of 3.5%.

This completes the funding cycle for this project.

Design Costs over Funding Cycle for the Rockville Science Center
(as a percent of construction)

Fiscal Year	Planning, Design, and Supervision (PDS) Budget	Construction Budget	FFE Budget	Total Budget	PDS as a Percent of Construction After Escalation	State Cost Escalation
FY2005 - Beginning MC Request	7,790,000	37,078,000	5,912,000	50,780,000	21.0%	0.0%
FY2006 - Reduction in Design Costs (MC Design Request was \$7,790,000)	6,200,000	37,078,000	5,912,000	49,190,000	16.7%	10.5%
FY2007	6,200,000	37,078,000	5,912,000	49,190,000	16.7%	8%
FY2008	6,200,000	56,405,000	7,401,000	70,006,000	11.0%	8%
FY2009	6,992,000	58,810,000	7,772,000	73,574,000	11.9%	5%
FY2010	6,992,000	58,810,000	8,122,000	73,924,000	11.9%	4.5%
FY2011	6,992,000	58,810,000	8,488,000	74,290,000	11.9%	3.5%

This chart demonstrates how Planning, Design, and Supervision (PDS) costs at the beginning of a project may appear high, but once PDS is approved this figure essentially remains the same, and is not escalated the way construction is. The increase in construction costs due to escalation decrease the Planning, Design, and Supervision costs as a percent of construction figure.

Below is an example, if design costs remained the same as at the beginning of the project this would equal a design as a percentage of construction equal to 13.2%.

Fiscal Year	Planning, Design, and Supervision Budget	Construction Budget	FFE Budget	Total Budget	PDS as a Percent of Construction After Escalation
Hypothetical - Original Design costs, compared to ending construction costs.	7,790,000	58,810,000	5,912,000	72,512,000	13.2%

ATTACHMENT 4

Planning, Design, and Supervision Components

A/E Contract - Basic Services	7%
<ul style="list-style-type: none"> ● Schematic Design ● Design Development ● Construction Documents ● Bidding/Negotiation ● Construction Administration ● Post Occupancy 12 month warranty review 	
A/E Contract - Special Services	2%
<ul style="list-style-type: none"> ● Program Verification ● Site Predesign ● Traffic Study ● Geotechnical Services ● Water Flow Test ● Fire Protection Evaluation ● Hardware Constultation ● Value Engineering Services ● Onsite Facilitator ● Additional Services for City of Rockville Permitting ● Storm Water Management Planned Services ● Forest Conservation Plan Services ● Cost Estimating Services 	
A/E Contract - Reimbursables	0.5%
<ul style="list-style-type: none"> ● Subsurface Utility Designation and Test Holes ● Preparation of 3D Model ● Preparation of 3D Rendering ● Geotechnical Engineering (Borings) 	
Third Party Services	2%
<ul style="list-style-type: none"> ● Commissioning Services ● Transportation Analysis ● Utility Coordination ● Other Third Party Evaluations 	
MC Administration	1%
<ul style="list-style-type: none"> ● Permit Fees ● Review Fees ● Bid Expense ● Document Printing 	
Construction Inspection, and Testing Services (State Mandated)	2.2%
CM/Extended CA Services	5%
Total Design Percentage	<u>20%</u>

Information Technology: College -- No. 856509

Category
Subcategory
Administering Agency
Planning Area

Montgomery College
Higher Education
Montgomery College
Countywide

Date Last Modified
Required Adequate Public Facility
Relocation Impact
Status

November 06, 2011
No
None
On-going

EXPENDITURE SCHEDULE (\$000)

Cost Element	Total	Thru FY11	Est. FY12	Total 6 Years	FY13	FY14	FY15	FY16	FY17	FY18	Beyond 6 Years
Planning, Design, and Supervision	15,549	15,255	294	0	0	0	0	0	0	0	0
Land	0	0	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	0	0	0	0	0	0	0	0	0	0	0
Construction	22,275	18,541	734	3,000	500	500	500	500	500	500	0
Other	105,130	44,107	11,948	49,077	9,077	8,000	8,000	8,000	8,000	8,000	0
Total	142,954	77,903	12,974	52,077	9,577	8,500	8,500	8,500	8,500	8,500	0

FUNDING SCHEDULE (\$000)

Current Revenue: General	68,029	22,680	6,487	38,862	4,940	7,458	7,483	8,327	6,327	6,327	0
Current Revenue: Recordation Tax	68,281	48,579	6,487	13,215	4,637	1,042	1,017	2,173	2,173	2,173	0
G.O. Bonds	4,603	4,603	0	0	0	0	0	0	0	0	0
PAYGO	2,041	2,041	0	0	0	0	0	0	0	0	0
Total	142,954	77,903	12,974	52,077	9,577	8,500	8,500	8,500	8,500	8,500	0
WorkYears					4.0	4.0	4.0	4.0	4.0	4.0	

DESCRIPTION

This project provides for the design and installation/construction of College Information Technology (IT) systems including data, video, cybersecurity, software services, and voice applications; and associated cable systems, equipment closet, and IT space construction; and the replacement/upgrade of IT equipment to meet current requirements. The project also includes installation and furnishing of technology in classrooms, labs and offices. These IT systems support and enhance the College's instructional programs, student services including counseling, admissions, registration, etc., and administrative computing requirements for finance, human resources, institutional advancement, workforce development and continuing education, etc., and are implemented in accordance with the College's Information Technology Strategic Plan (ITSP). The Office of Information Technology (OIT) determines and recommends the hardware and software to be purchased based on project need. OIT is responsible for equipment purchases, monitoring of systems results, and providing assistance during implementation and on-going technology reviews and analysis. Four (4) staff positions are funded here.

JUSTIFICATION

To meet current and projected technical standards for data, video, and voice communications the College anticipates installing complete IT, telecommunications and learning center systems at each campus, the central administration building and all instructional sites. The new systems allow replacement of aging systems for data and video applications; provide for updated networking capabilities; provide necessary security and monitoring capabilities; establish learning centers for classrooms and labs, and for distributed instruction; and allow expanded opportunities for linking with external information technology services. In addition, the ITSP helps meet student requirements for IT tools and instruction in preparation for career opportunities and transfer programs to four-year institutions. Use of state-of-the-market hardware and technology capabilities are required to attract and serve students, as well as serving the business community by upgrading work force technology skills and providing a base for continued economic development in the county.

Information Technology Strategic Plan (ITSP) - The ITSP is a comprehensive plan covering IT activities funded from all budget sources for an integrated and complete plan for the College. Updated annually, the ITSP is the supporting document for both current and future funding requests. The three ITSP goals are the use of IT to (1) facilitate students' success; (2) effectively and efficiently operate the College; and (3) support the College's growth, development, and community initiatives. The ITSP is an overall strategic plan that provides a cost effective and efficient vision for instructional, academic and administrative systems; and serves as a basis for preparing unit plans and budget requests for project implementation.

OTHER

The following fund transfers have been made from this project: \$1,300,000 to the Takoma Park Campus Expansion project (#996662) (BOT Resol. #07-01-005, 1/16/2007); 300,000 to the Student Learning Support Systems project(#078817).

The following fund transfers have been made to this project: \$111,000 from the Planning, Design and Construction project (#906605), and \$25,000 from the Facilities Planning: College project (#888886) to this project (BOT Resol. #91-56, 5/20/1991); the project appropriation was reduced by \$559,000 in FY92.

FY2013 Appropriation: Total \$9,577,000; \$4,637,000 (Current Revenue: Recordation Tax) and \$4,940,000 (Current Revenue: Recordation Tax).

FY2014 Appropriation: Total \$8,500,000; \$7,458,000 (Current Revenue: Recordation Tax) and \$1,042,000 (Current Revenue: General).

OTHER DISCLOSURES

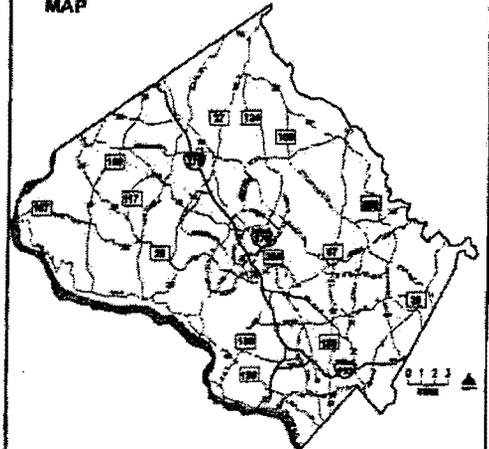
- * Expenditures will continue indefinitely.

APPROPRIATION AND EXPENDITURE DATA		
Date First Appropriation	FY86	(\$200)
First Cost Estimate	FY13	142,954
Current Scope		
Last FY's Cost Estimate		125,954
Appropriation Request	FY13	8,577
Appropriation Request Est.	FY14	8,500
Supplemental Appropriation Request		0
Transfer		0
Cumulative Appropriation		90,877
Expenditures / Encumbrances		77,903
Unencumbered Balance		12,974
Partial Closeout Thru	FY10	0
New Partial Closeout	FY11	0
Total Partial Closeout		0

COORDINATION

Information Technology (IT) Strategic Plan
New Building Construction projects
Campus Building Renovation projects

MAP



EXECUTIVE RECOMMENDATION

Information Technology: College - No. 856509

Category: **Montgomery College**
 Agency: **Montgomery College**
 Planning Area: **Countywide**
 Relocation Impact: **None**

Date Last Modified: **January 9, 2012**
 Required Adequate Public Facility: **No**

EXPENDITURE SCHEDULE (\$000)

Cost Element	Total	Thru Rem. 6 Year			Beyond						
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18	6 Years
Planning, Design and Supervision	15,549	15,255	294	0	0	0	0	0	0	0	0
Construction	21,775	18,541	734	2,500	0	500	500	500	500	500	0
Other	96,053	44,107	11,946	40,000	0	8,000	8,000	8,000	8,000	8,000	0
Total	133,377	77,903	12,974	42,500	0	8,500	8,500	8,500	8,500	8,500	0

FUNDING SCHEDULE (\$000)

G.O. Bonds	4,603	4,603	0	0	0	0	0	0	0	0	0
Current Revenue: General	63,089	22,680	6,487	33,922	0	7,458	7,483	6,327	6,327	6,327	0
Current Revenue: Recordation Tax	63,644	48,579	6,487	8,578	0	1,042	1,017	2,173	2,173	2,173	0
PAYGO	2,041	2,041	0	0	0	0	0	0	0	0	0

COMPARISON (\$000)

	Total	Thru Rem. 6 Year			Beyond						Approp. Request	
		FY11	FY12	Total	FY13	FY14	FY15	FY16	FY17	FY18		6 Years
Current Approved	125,954	80,482	10,395	35,077	9,577	8,500	8,500	8,500	0	0	0	0
Agency Request	142,954	77,903	12,974	52,077	9,577	8,500	8,500	8,500	8,500	8,500	0	9,577
Recommended	133,377	77,903	12,974	42,500	0	8,500	8,500	8,500	8,500	8,500	0	0

CHANGE	TOTAL	%	6-YEAR	%	APPROP.	
Agency Request vs Approved	17,000	13.5%	17,000	48.5%	9,577	0.0%
Recommended vs Approved	7,423	5.9%	7,423	21.2%	0	0.0%
Recommended vs Request	(9,577)	(6.7%)	(9,577)	(18.4%)	(9,577)	(100.0%)

Recommendation

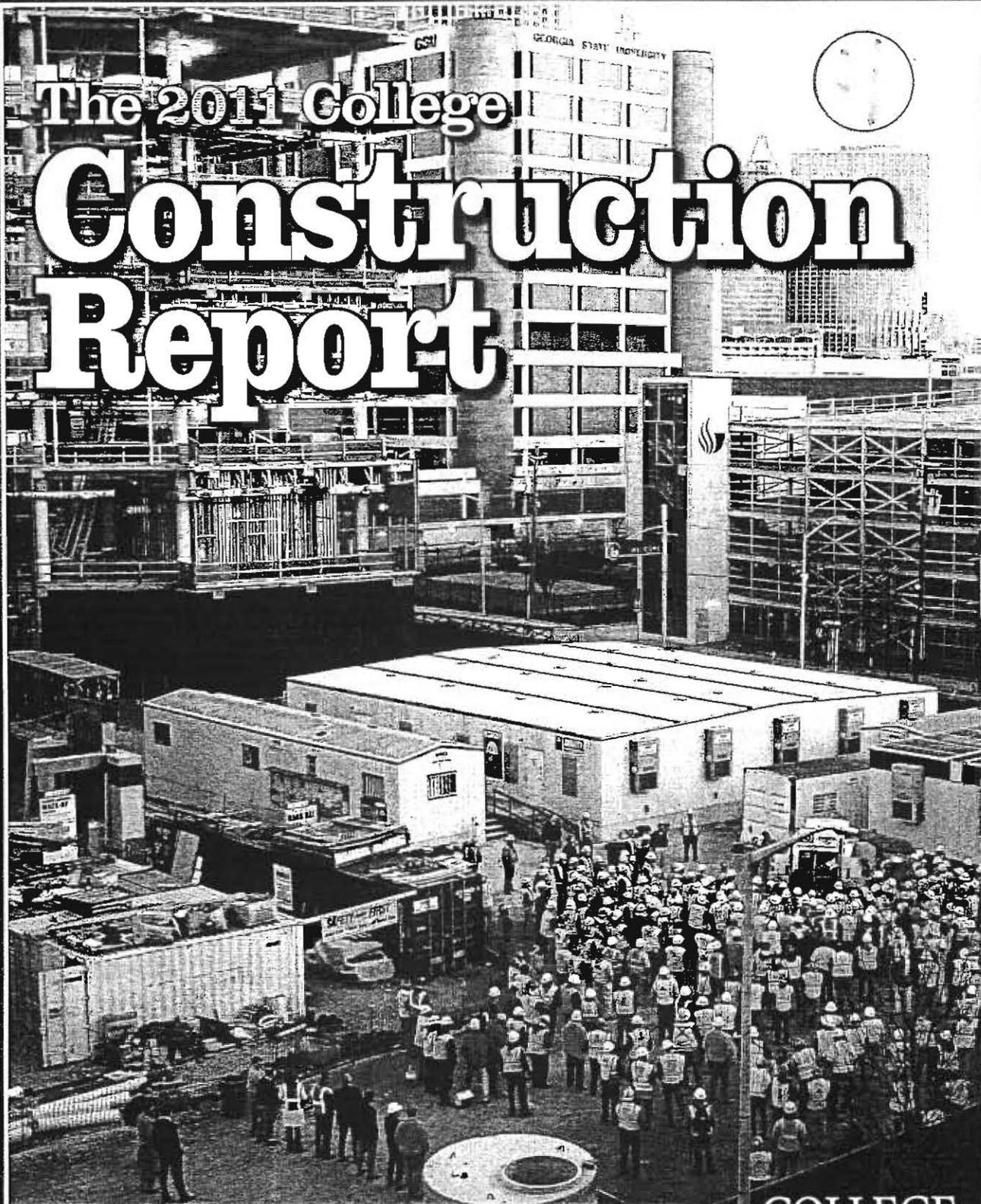
APPROVE WITH MODIFICATIONS

Comments

In order to accommodate an \$8.0 million overall increase in the College's budget, despite a \$140 million reduction in issued General Obligation Bonds, the Executive does not recommend additional appropriations and expenditures in FY13 as the project has significant carryover amounts available from prior years.

The FY13 appropriation recommendation is \$0.

The FY14 appropriation recommendation is \$8,500,000; \$7,458,000 (Current Revenue: Recordation Tax) and \$1,042,000 (Current Revenue: General).



The 2011 College

Construction Report

16TH ANNUAL REPORT

COLLEGE
Planning & Management

NATIONAL STATISTICS

WHAT HAPPENED IN 2010?
WHAT'S PROJECTED FOR 2011?

BUILDING TRENDS

HOW ARE CONSTRUCTION
DOLLARS BEING USED?

MEDIAN COSTS

HOW DO COSTS DIFFER
FOR BUILDING TYPES?

Building Confidence

The news is not all bad as college construction exceeds projections in a recovering economy.

BY PAUL ABRAMSON

Is there a pattern to college construction today? The numbers indicate that in 2010, colleges spent \$11B on new buildings, additions, and renovation of existing buildings. That was slightly more than was put in place the year before but far below the \$13 to \$15B annually from 2004 through 2008. On the other hand, it was more than had been projected, meaning that colleges actually accomplished more than

they had expected.

That may be because endowments increased last year, giving colleges more confidence that they will be able to attract more donations. Trustees of the University of Washington, for example, are betting on that, having authorized spending of \$250M to renovate the football stadium on the assumption that most of it can be raised through private donations.

But many colleges depend on state legislatures for their funding, and most states are broke. Western Michigan University may stand as a cautionary tale. The University started work last year on a \$60M academic building with only part of the spending in place. The balance was to come from the state, but the legislature left the project out of its funding package.

1 A LOOK BACK CONSTRUCTION COMPLETED (\$000's), 1995 THROUGH 2010

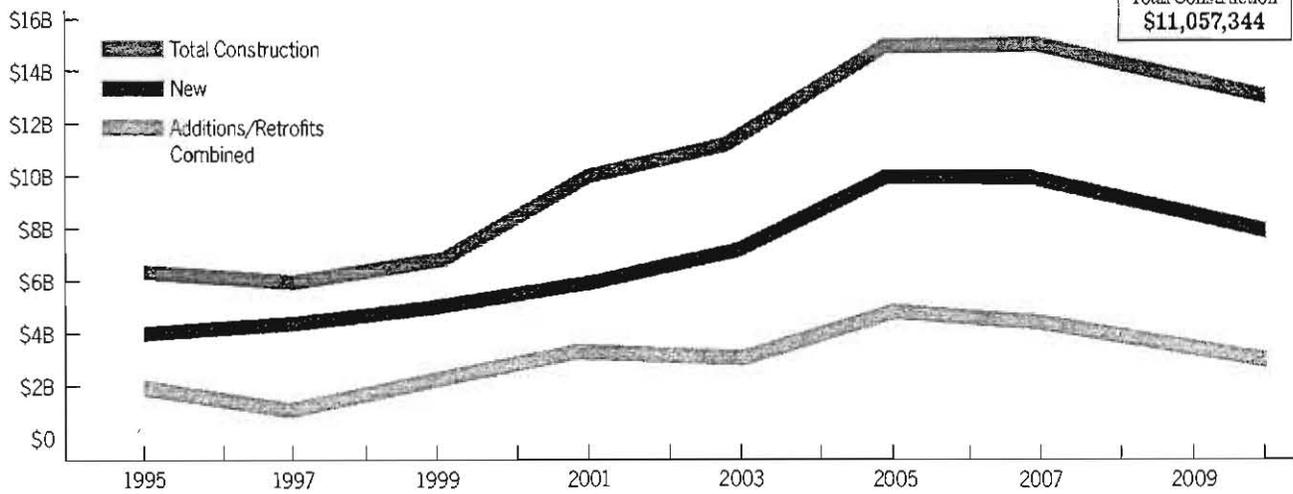
	1995	% of	1996	% of	1997	% of	1998	% of	1999	% of
	Cost	Total								
New	\$4,131,972	67.7%	\$4,528,792	72.4%	\$4,260,969	73.8%	\$4,384,893	69.2%	\$4,567,166	67.2%
Additons	\$507,809	8.3%	\$541,697	8.7%	\$529,013	9.2%	\$857,051	13.5%	\$986,864	14.5%
Retrofits	\$1,463,373	24.0%	\$1,181,310	18.9%	\$986,993	17.1%	\$1,090,206	17.2%	\$1,239,307	18.2%
TOTAL	\$6,103,154		\$6,251,799		\$5,776,975		\$6,332,150		\$6,793,337	
	2000	% of	2001	% of	2002	% of	2003	% of	2004	% of
	Cost	Total								
New	\$4,780,898	65.6%	\$6,029,621	61.8%	\$7,050,533	63.8%	\$7,453,511	67.4%	\$9,024,829	66.0%
Additons	\$1,039,178	14.3%	\$1,586,614	16.2%	\$1,732,084	15.7%	\$1,761,110	15.9%	\$2,151,836	15.7%
Retrofits	\$1,467,785	20.1%	\$2,147,947	22.0%	\$2,272,794	20.6%	\$1,843,611	16.7%	\$2,491,079	18.2%
TOTAL	\$7,287,861		\$9,764,182		\$11,055,411		\$11,058,232		\$13,667,744	
	2005	% of	2006	% of	2007	% of	2008	% of	2009	% of
	Cost	Total								
New	\$9,792,474	67.4%	\$10,327,086	68.6%	\$10,186,254	70.2%	\$9,345,152	70.3%	\$8,087,132	75.5%
Additons	\$2,067,987	14.2%	\$2,109,843	14.0%	\$1,774,674	12.2%	\$1,981,866	14.9%	\$1,254,902	11.7%
Retrofits	\$2,662,689	18.3%	\$2,615,611	17.4%	\$2,539,088	17.5%	\$1,972,920	14.8%	\$1,370,462	12.8%
TOTAL	\$14,523,150		\$15,052,540		\$14,500,016		\$13,299,939		\$10,712,496	
	2010	% of								
	Cost	Total								
New	\$7,913,650	71.6%								
Additons	\$1,440,304	13.0%								
Retrofits	\$1,703,390	15.4%								
TOTAL	\$11,057,344									

Charting construction costs: Between 1995 and 2010, annual costs of completed construction on campuses across the United States has risen from just over \$6B to just over \$11B. By 2005, annual construction was up above \$13B, and in 2006 it topped \$15B. After 2006, totals began to decline and continued to do so through 2009 as the depressed economy took its toll. In 2010, however, things turned around, and a modest gain of about \$300M over 2009's numbers is a hopeful sign that a steady recovery is underway.

COVER PHOTO COURTESY OF MCCARTHY BUILDING COMPANIES, INC.

HISTORY OF COLLEGE CONSTRUCTION

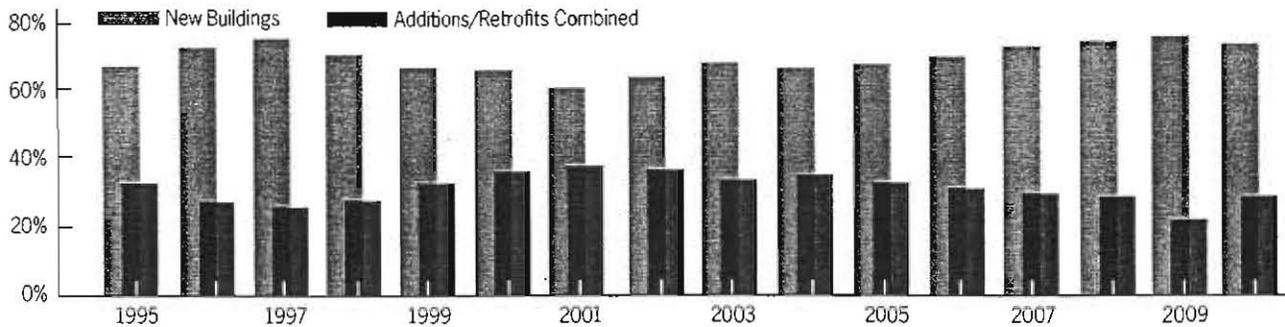
COLLEGE CONSTRUCTION COMPLETED (\$000's), 1995 THROUGH 2010



2010 Completed
Total Construction
\$11,057,344

PERCENTAGE OF TOTAL DOLLARS

COLLEGE CONSTRUCTION COMPLETED, 1995 THROUGH 2010



REGIONAL DEFINITIONS

- Region 1 CT, ME, MA, NH, RI, VT
- Region 2 NJ, NY, PA
- Region 3 DE, DC, MD, VA, WV
- Region 4 KY, NC, SC, TN
- Region 5 AL, FL, GA, MS
- Region 6 IN, OH, MI
- Region 7 IL, MN, WI
- Region 8 IA, KS, MO, NE
- Region 9 AR, LA, OK, TX
- Region 10 CO, MT, ND, NM, SD, UT, WY
- Region 11 AZ, CA, HI, NV
- Region 12 AK, ID, OR, WA

A Short Construction History

I have been tracking college construction for *College Planning & Management* magazine since 1995, when \$6.1B worth of construction was put in place (SEE TABLE 1 on pg. CR2). Construction stayed close to \$6B per year from 1995 through 1999, when it reached \$6.8B.

Starting in 2000, college construction began to shift into a higher gear. In 2000 it broke the \$7B barrier for the first time, then jumped to \$9.8B and \$11B the next two years, largely in response to a growing demand for seats in college classrooms and beds in residence halls.

By 2005 annual construction was up above \$13B, and in 2006 it topped \$15B, before falling back slightly to \$14.5B in 2007.

The next year there was a further decline to just \$13.3B, and in 2009, just \$10.7B was completed, a drop of more than \$3.4B (22 percent) in three years as the depressed overall economy took its toll.

In 2010, college construction put in place had a mild rebound to almost \$11.1B, an increase of just \$300M, but hopefully a sign of the times as college endowments began their own rebound from the worst effects of the recession.

These are among the findings of this 16th Annual Survey of College Construction prepared for *College Planning & Management* magazine in conjunction with Market Data Retrieval, a company of Dun and Bradstreet (D&B). Market Data Retrieval sends survey forms and makes



NATIONALLY AND BY REGION

COLLEGE CONSTRUCTION COMPLETED IN 2010 (\$000's)

Region	New	Additions	Renovation	Total	% OF SPENDING FOR			% of Nation
					New	Addition	Renovation	
1	\$246,600	\$60,650	\$107,950	\$415,200	59.4%	14.6%	26.0%	3.8%
2	\$667,104	\$187,363	\$143,120	\$997,586	66.9%	18.8%	14.3%	9.0%
3	\$555,555	\$47,131	\$73,393	\$676,079	82.2%	7.0%	10.9%	6.1%
4	\$495,647	\$132,270	\$124,314	\$752,232	65.9%	17.6%	16.5%	6.8%
5	\$788,781	\$197,078	\$198,440	\$1,184,299	66.6%	16.6%	16.8%	10.7%
6	\$482,185	\$156,819	\$244,571	\$883,575	54.6%	17.7%	27.7%	8.0%
7	\$411,429	\$139,994	\$170,860	\$722,282	57.0%	19.4%	23.7%	6.5%
8	\$494,034	\$108,500	\$85,345	\$687,879	71.8%	15.8%	12.4%	6.2%
9	\$1,574,021	\$181,994	\$167,326	\$1,923,341	81.8%	9.5%	8.7%	17.4%
10	\$464,629	\$30,248	\$41,816	\$536,693	86.6%	5.6%	7.8%	4.9%
11	\$1,539,664	\$147,608	\$235,782	\$1,923,054	80.1%	7.7%	12.3%	17.4%
12	\$194,000	\$50,650	\$110,473	\$355,123	54.6%	14.3%	31.1%	3.2%
Nat'l	\$7,913,650	\$1,440,304	\$1,703,390	\$11,057,344	71.6%	13.0%	15.4%	100%

To read this table: Colleges in Region 1 (New England) spent \$246M on new buildings completed in 2010, \$60M on additions to existing buildings, and \$107M on retrofit of existing buildings, for a total of \$415M on all construction. 59 percent of Region 1's college construction dollars were spent on new buildings. Region 1 colleges spent 3.8 percent of all the money spent on college construction last year.

follow-up telephone calls to every college in the United States seeking information on their construction programs. As projects are identified, often in the very early stages, contacts are continued in order to add detail and accuracy to the reports. These reports are grouped into 12 regions (see list on pg. CR3) by year construction is expected to be completed and started, and are analyzed and used by the author to project construction totals.

Construction Activity, Nationally and by Region

College construction completed in 2010 totaled \$11.1B (SEE TABLE 2, above), a slight increase over 2009. Of that amount, \$7.9B (71.6 percent) was spent on entirely new buildings. The balance went to adding space to existing structures (\$1.4B) and renovating existing space (\$1.7B).

To better understand and estimate how and where construction is taking place, the nation was divided into 12 regions and construction plans and programs of each

region's colleges were examined.

In terms of construction put in place in 2010, colleges and universities in Region 9 (Arkansas, Louisiana, Oklahoma, and Texas) and Region 11 (including California, Arizona, Nevada, and Hawaii) were the largest spenders, each with almost identical totals (\$1.923B). Each spent its money essentially in the same way, with better than 80 percent going into new buildings, but Region 11 institutions put more emphasis on upgrading existing buildings than did those in Region 9. Both regions spent more in 2010 than they had a year earlier.

Colleges in Region 5 (Alabama, Florida, Georgia, and Mississippi) made up the only one other region to put as much as \$1B in place last year. Region 2 (New Jersey, New York, and Pennsylvania) colleges spent almost as much, but fell just short. It's interesting to note that in each of these two regions, one-third of the dollars were spent on enlarging and fixing up existing buildings.

Region 6, including Ohio, Michigan,

and Indiana, put almost \$900M into work completed in 2010, almost half being spent on existing buildings.

Region 4 (Kentucky, North Carolina, South Carolina, and Tennessee), with \$752M in construction, and Region 7 (Illinois, Minnesota, and Wisconsin), with \$722M, were the only other regions spending more than \$700M this year.

What's Underway?

Construction completed in 2010 is history. Construction expected to be put in place in 2011 is underway right now. Colleges report that they expect to complete almost \$11.6B worth of construction this year (SEE TABLE 3), a slight increase from 2010. Of that amount, \$8.5B (73.1 percent) will go into new buildings. Almost \$2B will be used to retrofit, renovate, and upgrade existing structures.

Despite budget cuts, colleges in Region 11 project that they will continue as the nation's most active construction region, at \$2.2B. Colleges in Region 9, on the other hand, report a significant drop in

3

NATIONALLY AND BY REGION

CONSTRUCTION PROJECTED TO BE COMPLETED IN 2011 (\$000's)

Region	New	Additions	Renovation	Total	% OF SPENDING FOR			% of Nation
					New	Addition	Renovation	
1	\$608,801	\$49,350	\$183,863	\$842,015	72.3%	5.9%	21.8%	7.3%
2	\$421,118	\$153,923	\$225,015	\$800,056	52.6%	19.2%	28.1%	6.9%
3	\$823,977	\$66,089	\$218,217	\$1,108,283	74.3%	6.0%	19.7%	9.6%
4	\$1,043,085	\$36,850	\$434,428	\$1,514,363	68.9%	2.4%	28.7%	13.1%
5	\$1,071,880	\$11,150	\$91,367	\$1,174,397	91.3%	0.9%	7.8%	10.2%
6	\$423,940	\$150,422	\$189,504	\$763,867	55.5%	19.7%	24.8%	6.6%
7	\$183,126	\$64,259	\$108,767	\$356,152	51.4%	18.0%	30.5%	3.1%
8	\$119,600	\$10,200	\$26,976	\$156,776	76.3%	6.5%	17.2%	1.4%
9	\$1,116,300	\$106,150	\$65,950	\$1,288,400	86.6%	8.2%	5.1%	11.1%
10	\$726,463	\$83,685	\$77,045	\$887,193	81.9%	9.4%	8.7%	7.7%
11	\$1,658,507	\$289,600	\$250,248	\$2,198,355	75.4%	13.2%	11.4%	19.0%
12	\$262,940	\$100,650	\$116,208	\$479,798	54.8%	21.0%	24.2%	4.1%
Nat'l	\$8,459,737	\$1,122,328	\$1,987,587	\$11,569,653	73.1%	9.7%	17.2%	100%

To read this table: Colleges in Region 1 (New England) expect to spend \$608M on new buildings to be completed in 2011, \$49M on additions to existing buildings, and \$183M on retrofit of existing buildings, for a total of \$842M on all construction. 72 percent of Region 1's college construction dollars will go for new buildings. Region 1 colleges are projected to spend 7.3 percent of all the money spent on college construction to be completed this year.

4

NATIONALLY AND BY REGION

CONSTRUCTION PROJECTED TO START IN 2011 (\$000's)

Region	New	Additions	Renovation	Total	% OF SPENDING FOR			% of Nation
					New	Addition	Renovation	
1	\$605,900	\$95,650	\$235,650	\$937,200	64.7%	10.2%	25.1%	7.5%
2	\$646,600	\$71,363	\$62,650	\$780,612	82.8%	9.1%	8.0%	6.3%
3	\$663,270	\$93,312	\$316,411	\$1,072,993	61.8%	8.7%	29.5%	8.6%
4	\$813,947	\$42,720	\$236,695	\$1,093,362	74.4%	3.9%	21.6%	8.8%
5	\$770,475	\$72,721	\$150,166	\$993,363	77.6%	7.3%	15.1%	8.0%
6	\$375,742	\$71,682	\$171,084	\$618,508	60.7%	11.6%	27.7%	5.0%
7	\$692,269	\$73,074	\$112,559	\$877,901	78.9%	8.3%	12.8%	7.0%
8	\$180,300	\$76,330	\$114,720	\$371,350	48.6%	20.6%	30.9%	3.0%
9	\$1,678,738	\$81,190	\$619,001	\$2,378,929	70.6%	3.4%	26.0%	19.1%
10	\$609,192	\$97,228	\$156,441	\$862,861	70.6%	11.3%	18.1%	6.9%
11	\$1,414,846	\$211,160	\$120,750	\$1,746,756	81.0%	12.1%	6.9%	14.0%
12	\$652,100	\$65,650	\$35,650	\$753,400	86.6%	8.7%	4.7%	6.0%
Nat'l	\$9,103,380	\$1,052,079	\$2,331,777	\$12,487,235	72.9%	8.4%	18.7%	100%

To read this table: Colleges in Region 1 (New England) expect to spend \$937M on new buildings being started in 2011, \$95M on additions to existing buildings, and \$235M on retrofit of existing buildings, for a total of \$937M on all construction. Over 64 percent of Region 1's projected construction dollars are destined to be spent on new buildings. The construction cost of Region 1 colleges starting in 2011 accounts for 7.5 percent of all college construction spending projected to start this year.

5 PROFILE OF NEW BUILDINGS CURRENTLY UNDERWAY

Building Type	Median Size (Sq. Ft.)	Median Cost	COST PER SQ. FT.			Buildings in Sample
			Low Quartile	Median	High Quartile	
Academic	76,480	\$25,200,000	\$246.12	\$339.08	\$434.00	74
Health Related	63,000	\$20,000,000	\$258.06	\$350.00	\$460.00	39
Library/Media	57,564	\$24,500,000		\$346.29	\$481.82	10
Performance	83,000	\$25,039,820	\$161.29	\$323.51	\$416.67	11
Physical Education	65,000	\$20,000,000	\$200.00	\$400.00	\$700.00	19
Residence Halls	102,099	\$23,000,000	\$156.86	\$187.67	\$259.79	28
Science	88,650	\$42,250,000	\$342.86	\$503.43	\$626.79	54
Student Center	67,000	\$21,000,000	\$258.24	\$300.00	\$380.60	25
Technology	43,332	\$11,200,000	\$190.48	\$236.04	\$620.00	8
Vocational	33,000	\$8,950,000	\$140.91	\$287.95	\$439.56	8

To read this table: The median academic building in this sample of buildings recently completed or currently being constructed will contain 76,480 sq. ft. and will cost \$25.2M. The median cost will be \$339.08 per sq. ft. One quarter of the academic buildings will cost \$246.12 per sq. ft. or less. At the other end of the scale, one out of four academic buildings will cost \$434 per sq. ft. or more. This information was gathered from a sample of 74 academic buildings completed in 2010 or currently under construction.



RETROFIT

When Colleges Renovate a Building, Here Is the Work They Most Often Undertake* (% of projects)

HVAC	44.8%
Electric Overhaul	41.2%
Plumbing	34.8%
Lighting	33.8%
Flooring/Carpeting	31.4%
Fire Alarms	25.4%
ADA Compliance	24.0%
Fiber Optics/Cable	20.3%
Storage	17.0%
Tile	16.9%
Bathrooms	16.3%
Security Equipment	15.6%
WANs	15.4%
LANs	15.2%
Controls	14.2%
Windows	11.6%
Roofing	11.5%

* Retrofit undertaken in at least 10% of reported projects

projected activity. There is no obvious reason for this, so it may be more a matter of willingness to report than lack of activity.

Looking Ahead

What is coming next? Colleges were asked about construction they were planning to start during calendar year 2011. **TABLE 4** (on pg. CR5) shows the results. The total projected is \$12.5B, indicating, perhaps, that college construction is rebounding from the depths of despair and that donors with open check books are back in spending mode. Certainly reports that college endowments rose last year are encouraging, but for the many institutions that depend on state legislatures for the bulk of their construction dollars, difficult times may still be ahead.

What's in a Building?

Every college that plans and constructs a new building designs that building for its own specific needs and purposes. An academic building at one institution will have a different mix of classrooms, labs, and offices than one at another. Some col-

leges will put science labs in their academic buildings; others construct buildings strictly for science. Similarly, student unions run the gamut from simple gathering and foodservice areas to including amenities such as theaters, bowling alleys, fitness centers, and the like.

Nevertheless, when a college says that it is building a science building, an academic building, a library, or performing arts building, there is a certain commonality of facilities that we all expect. That commonality allows some comparison from campus to campus in terms of cost and size. **TABLE 5** provides information on **10 building types** that were identified relatively frequently by college spokespersons. In each case it is assumed that the function that was named is the dominant one in the building, although other facilities may also be included.

Information was gathered on 74 new academic buildings completed in 2010 or underway now. Among those, the median size was 76,480 sq. ft. and the median cost was \$25,200,000. In terms of cost per sq. ft., the academic building right in the

middle is being constructed for \$339.08 per sq. ft. One-quarter of the academic buildings are being constructed for \$246 or less, while one-quarter at the other end of the scale cost \$434 or more per sq. ft. (It should be noted that the median for each variable was found independently. The 76,480 sq. ft. library building was not necessarily where the cost was \$339.08 per sq. ft.)

Looking at some of the other building types identified, the median among 10 library buildings was 57,564 sq. ft.; the median cost \$24.5M. Among 11 performance venues, the median size was 83,000 sq. ft. and the cost \$25M.

Physical education and athletic facilities ranged from field houses to natatoriums and from gymnasiums to locker rooms to stadiums. Nineteen facilities falling into this category had a median cost of \$20M. Reports on 25 student centers showed the median size to be 67,000 sq. ft. and the cost per sq. ft. at \$300.

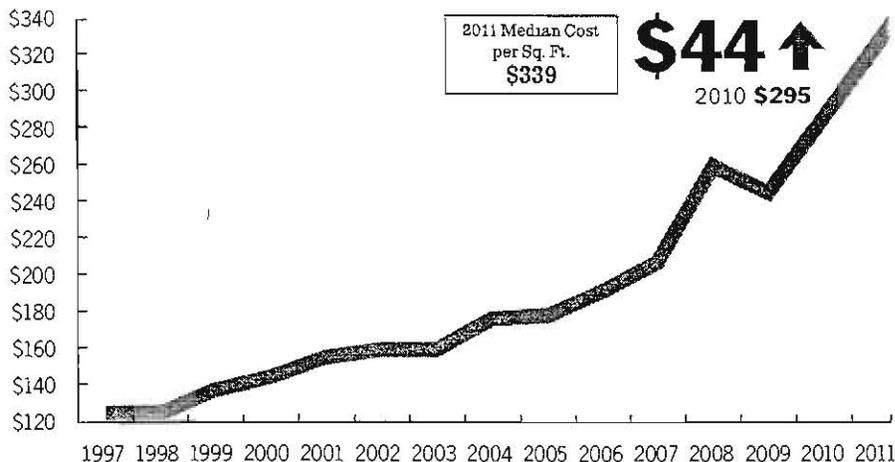
The median cost per sq. ft. among 54 science buildings was more than \$500, and one-quarter of these buildings cost \$626 per sq. ft. or more. (SEE GRAPHS A THROUGH D for the history of costs for four key building types.) At a median size of 88,650 sq. ft., these were not necessarily the largest buildings on campus, but at \$42,250,000 they were easily the most expensive.

The largest reported were the 28 residence halls, with a median size of better than 102,000 sq. ft. These buildings, however, are built much less expensively, costing \$23M but with the median built at \$187.67 per sq. ft.

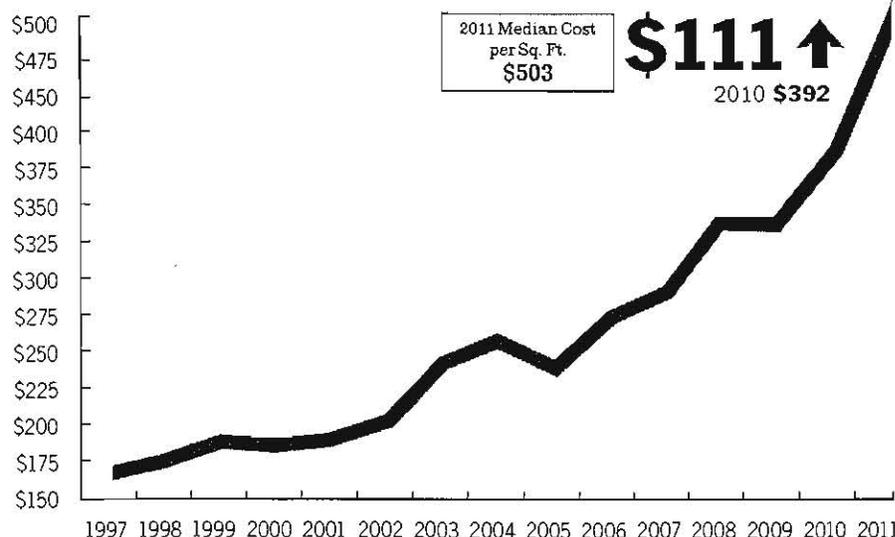
This year, for the first time, eight colleges reported they were constructing vocational buildings of various types, providing education for job opportunities in health care, technology, and law enforcement, among others. All but one are on community college campuses. The median among them is 33,000 sq. ft. and the median cost is less than \$9M.

Two other building types ought to be

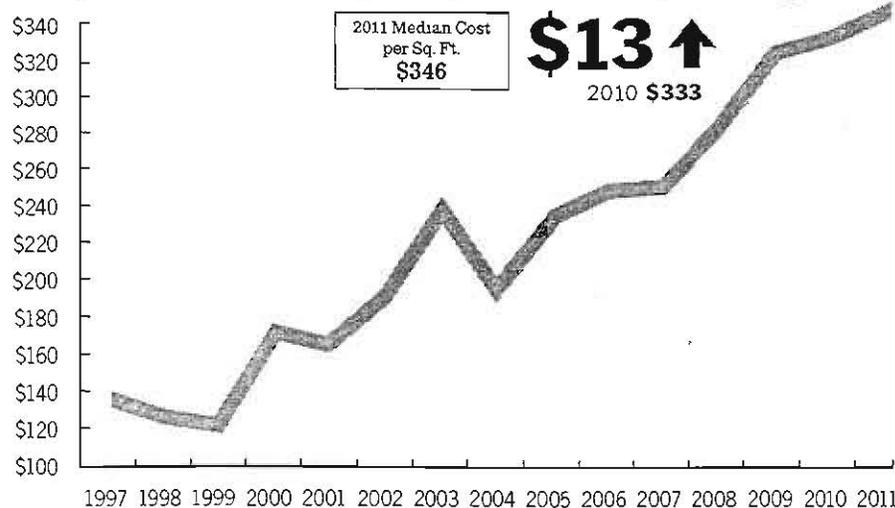
Graph A: Median Cost per Sq. Ft. for Academic Buildings



Graph B: Median Cost per Sq. Ft. for Science Buildings



Graph C: Median Cost per Sq. Ft. for Library Buildings



mentioned. Early childhood facilities have been mentioned before, but the number constructed this year fell to just four. There was mention of maintenance buildings constructed to house and/or organize the maintenance and facilities operations of college. The median among the five identified was just under \$5M.

What's Being Renovated?

With \$1.7B spent in 2010 on renovation of existing buildings, it seemed useful to learn what kinds of work are most often undertaken in these projects. The list in the box on pg. CR6 shows that when renovation projects are started on a college campus, overhauling the building's electrical and HVAC systems comes first. Plumbing and lighting are also frequently involved, along with carpeting.

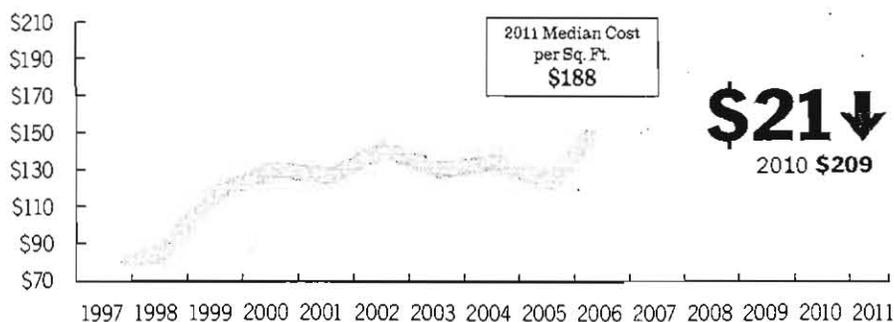
Rising Costs

We have been publishing cost information on various building types since 1997. In the four graphs on pgs. CR7 and CR8, we have tracked the median cost of construction per sq. ft. for four building types. The four were chosen because we receive more reports on those than other types and they are constructed on virtually every college campus.

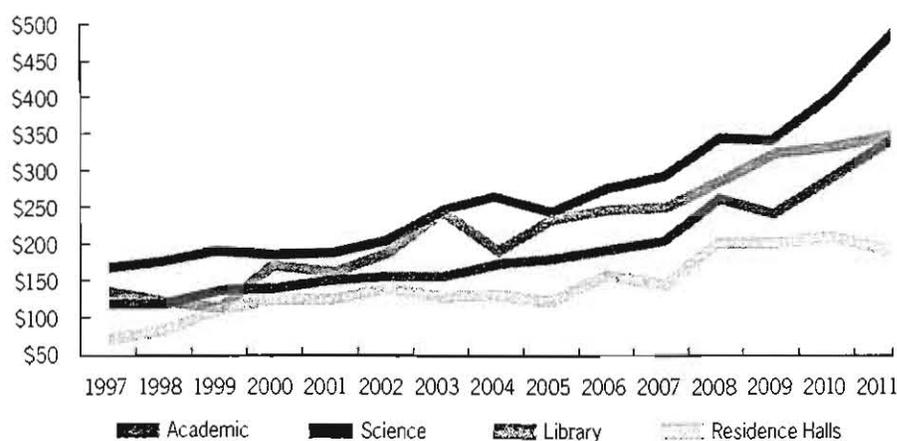
The median cost per sq. ft. for academic buildings was just over \$120 in 1997 and stayed close to that mark in 1998. Since then (SEE GRAPH A) it has risen significantly. In 2007, the median cost for academic buildings rose above \$200, but since then, despite a one-year dip, the cost has risen quickly, standing at \$339 per sq. ft. this year.

Of course, it is important remember that each year a different set of buildings (and colleges) is involved. Conceivably one year all buildings of a particular type could come from major universities and the next year from small community colleges. However, the fact that all but the lowest quarter of academic buildings cost more than \$258 per sq. ft. in 2010 indicates that the rise in costs is real. One likely reason for the increase is the growing value of technology in these buildings.

Graph D: Median Cost per Sq. Ft. for Residence Hall Buildings



Graph E: Median Cost per Sq. Ft. for College Buildings



Science buildings (GRAPH B) always cost more than academic buildings. In 1997, they cost \$170 per sq. ft. By 2004 the cost had risen above \$250 per sq. ft. and now stands at just over \$500. One quarter of the 54 buildings included in the sample cost more than \$626 per sq. ft.

The cost for library buildings (GRAPH C) has risen to \$346 per sq. ft., a very small rise over the past year. Of course, the buildings we call "libraries" today are quite different from those constructed even 10 years ago. The real question concerning college libraries is how they will function in an era when students do not necessarily use them for research. It may be that fewer and smaller structures will be needed.

GRAPH D looks at the median cost per sq. ft. for residence hall buildings. The days

of inexpensive, minimally furnished housing for students has obviously passed. In 1997, the median residence hall was being constructed for about \$75 per sq. ft. It rose a decade later to a little more than \$200 per sq. ft. but has fallen back this year to \$188.

A more thorough study of residence hall costs and amenities is now underway and will be reported in the June issue of *College Planning & Management*.

This Construction Report and the accompanying tables, etc., were compiled by Paul Abramson, education industry consultant for College Planning & Management magazine and the president of Stanton Leggett & Associates, an education consulting firm based in Mamaroneck, NY. He can be reached at intelled@aol.com.

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