

Ability of Higher Education to Meet Enrollment Growth and Workforce Demands Executive Summary

A recent report from the Education Commission of the States refers to a “College-Access Crisis” brought on by a “floundering economy, cuts to higher education spending by cash-strapped states, and a rising demand for college education spurred by demographic changes.” This convergence of circumstances led to at least 120,000 students being turned away from higher education last year in the State of California alone.

Recognizing fiscal constraints and soaring enrollments in their own state, Maryland legislators took the proactive step of drafting Joint Chairmen’s Report language during the 2003 legislative session to address the related issues of demand, capacity and access in higher education. The University System of Maryland (USM) and the Maryland Association of Community Colleges (MACC), in cooperation with the Maryland Higher Education Commission (MHEC), were asked to address relationships among expected enrollment growth, access, affordability, and capacity from the perspectives of both operations and facilities; and to offer recommendations on how best to meet these growing enrollments while maintaining access to high quality education that Maryland residents and businesses need.

The higher education workgroup found that Maryland indeed faces a pressing challenge of increased demand for higher education. Whether one uses MHEC’s enrollment driven model or the demand model developed by the USM and MACC workgroup, enrollment is projected to dramatically increase by 2010 – an increase ranging from 22%-31%. This demand is driven in large part by:

- The tremendous growth in high school graduates. Maryland is *fourth in the country* in its rate of growth of 18-24 year olds from now through 2015.
- Maryland’s investment in these graduates at the K-12 level. Given national trends and the State’s renewed investment in K-12 education, the college-going rate of Maryland graduates is only likely to increase in the coming years.
- Recognition on the part of employers, parents and young people that 80% of the jobs in the fastest growing sectors require some college.

While the USM/MACC workgroup predicts that the Maryland college-going rate will climb by one percentage point a year for the foreseeable future, the actual enrollment trends in the coming years will be determined in large part by the ability of institutions to accommodate these potential new students.

Capital Issues: A severe shortage of space, particularly lab space, will complicate the ability of Maryland’s public colleges to accommodate new students. Using conservative estimates, the state’s space shortfall will grow to 3.16 million square feet by 2013 - and this figure does not address the wear and tear on existing buildings.

The Operating Impact: The ability of colleges and universities to hire and keep adequate faculty and staffing levels, retain programs, and replace and upgrade technology

is crucial to their ability to accommodate new students. If funding per full-time student were to simply increase at the rate of inflation, it would be difficult for Maryland's public institutions to serve the entire number of students in the MHEC enrollment projections, let alone accommodate additional demand. Funding below this level would have serious consequences on accessibility, affordability and quality of higher education in Maryland.

Affordability: Dramatic tuition increases in light of declining public support will almost certainly have a serious and negative impact on access. Maryland is already considered too expensive when one considers tuition levels and the state's investment in need-based aid. In *Measuring Up 2000 and 2002*, the 50 state report card prepared by the National Center for Public Policy and Higher Education, Maryland's grade in affordability dropped from a 'D' to a 'D-' in the 2002 report.

Significant increases in need-based aid are critical to mitigate the negative impacts of rising tuition. The purchasing power of the federal Pell Grant, the largest source of need-based assistance, has declined significantly over the last decade. The State's primary need-based grant for undergraduate students, the Educational Assistance Grant, has a waiting list of more than 9,000 students. At the same time, loans (48%) have surpassed need-based grants (30%) as the primary source of assistance for students. Numerous studies have shown that student loans are not effective in providing access for students from low-income families.

Thornton and Beyond: Finally, it is important to recognize that the return on Maryland's investment in K-12 education (Thornton funding) cannot be fully realized without the involvement of Maryland's public colleges and universities. It is essential that the performance of children from lower socioeconomic backgrounds who have historically low college-going rates improve dramatically, as those students are a significant part of our state's population growth and future workforce. We must be forward-looking about the impact of this Thornton investment and anticipate the demand implications for our public institutions.

Maryland's institutions of higher education must continue to contribute to the solution. However, the magnitude of growth that is coming requires some significant enhancements in public support. Recovering the losses the state has experienced in its progress toward the USM funding guidelines and the community college Cade formula (both established by the General Assembly) during the current economic downturn will require a considerable investment. However, the cost of not doing so could be far worse: Maryland's economy will be impacted by reductions in earnings of residents who cannot get access to the public higher education system, and Maryland's businesses will find it harder to hire the workers that they need to support the state's new "Knowledge Economy."

The following recommendations are offered to Maryland's public colleges and universities and state policymakers:

Institutional Efforts

- Maximize the use of regional centers in meeting enrollment demand and, in partnership with the state, provide the funding needed to do so.
- Encourage students to progress through higher education promptly and efficiently.
- Encourage students who begin in community colleges to finish their associate's degrees there before transferring.
- Continue to assure that transfer processes are student-centered and excellent, and that the rates of rejection of transfer students do not rise as demand increases.
- Continue institutional investment in need-based aid.
- Explore possibilities for further increasing the use of current facilities and encourage new models that allow institutions to share physical capacity to better meet student demand.
- Leverage the use of the high school senior year for well prepared students so that students can maximize the college credits that they bring with them to their higher education experience.

State Efforts

- Recommit to the funding formulas and approaches that have been adopted to support higher education in Maryland.
- Continue to support the capital needs of public institutions of higher education and create a state task force on higher education capital needs to recommend appropriate investment levels in light of projected enrollments and potential demand changes.
- Make need-based financial aid a priority, particularly given the Thornton effort and its anticipated impact on increasing demand for higher education among those with historically low college-going rates.
- Increase outreach to the public schools to assure that students take appropriate college preparatory courses and understand the cost of college and the availability and processes for applying for financial aid.
- Invest in technology that will permit institutions to expand distance learning and combine distance and on-site delivery to maximize facilities capabilities.

INTRODUCTION

During the 2003 legislative session, the two budget committees of the Maryland General Assembly expressed their concern that Maryland faces substantial challenges in its ability to meet the public's current and future demand for high quality, affordable public higher education. The committees included the following language on Page 190 of the Joint Chairmen's Report (JCR):

Ability of Higher Education to Meet Enrollment Growth and Workforce Demands: *The committees have seen analysis from the Maryland Higher Education Commission that indicates a 24% increase in the college enrollment by 2011 based on projected enrollment growth and achievement of the goals of the Bridge to Excellence. Maryland's community colleges and universities have expressed concerns about their ability to accommodate these increased numbers of students while at the same time achieving and sustaining high quality and ensuring access and affordable tuition for Maryland families. The committees believe the two major providers of public education - the University System of Maryland institutions and Maryland's community colleges - should work collaboratively to coordinate a response as to the State's ability to meet this anticipated enrollment growth and workforce demands, while ensuring high quality, access and affordable tuition for Maryland families. The University System of Maryland and the Maryland Association of Community Colleges in cooperation with the Maryland Higher Education Commission should report to the committees by September 1, 2003, on the following:*

- *higher education enrollment trends in Maryland;*
- *relationships among expected enrollment growth, access, affordability, and capacity from the perspectives of both operations and facilities; and*
- *recommendations on how best to meet these growing enrollments while maintaining access to high quality education that Maryland residents and businesses need.*

BACKGROUND: THE CAPACITY PROBLEM - STRETCHING FROM COAST TO COAST

The legislature's charge shows recognition of the magnitude of the "capacity problem" confronting policymakers across the country. A recent *Chronicle of Higher Education* article¹ on a report by the non-partisan Education Commission of the States (ECS)² begins with the headline "U.S. Faces a College-Access Crisis...." In the article, Sandra S. Ruppert of the ECS attributes "shortfalls in college access to an 'unprecedented convergence of events' including the floundering economy, cuts to higher education spending by cash-strapped states, and a rising demand for college education spurred by demographic changes." Commission President Ted Sanders indicated, "America is at risk for losing a vital ingredient for its success—an educated populace."

¹ Gomstyn, Alice, "U.S. Faces A College-Access Crisis, Education-Policy Group Warns," *The Chronicle of Higher Education* (October 10, 2003).

² Education Commission of the States' Center for Community College Policy, Closing the College Participation Gap: A National Summary (October 2003).

Some states, like California and Florida, might be considered by some to already be in a “crisis” mode. A combination of a reduction in state support, tuition hikes, and a lack of space and faculty have resulted in 35,000 students being turned away from public higher education in Florida³ and at least 120,000 students being turned away in California⁴ last year.

MARYLAND COULD ENCOUNTER A SIMILAR POLICY DILEMMA

Certainly Maryland faces the risks that the report highlights. The following factors contribute:

- Maryland is ***fourth in the country*** in its rate of growth of 18-24 year olds from now through 2015 (Education Commission of the States, 2003).
- The college “going” rate – that is, the number of students who choose to attend college – has been rising nationally and in Maryland throughout the past two decades. However, there are still many states with college-going rates that outstrip Maryland’s, some by more than 10 percent, suggesting that further increases are likely (Education Commission of the States, 2003).
- Maryland’s public colleges and universities face substantial resource challenges – capital and operating – needed to meet the demand for higher education; growth in enrollment during a period of declining public funding is already creating serious challenges.
- 80% of the jobs in the fastest growing sectors of the national economy require at least some college⁵. Surveys by the Maryland Higher Education Commission and the Maryland Business Roundtable for Education have found that, due to lack of qualified applicants, Maryland employers are unable to fill positions needed in a number of professions including business, health care, special education, secondary education, engineering and computer and information technology. Clearly the health of the economy in our state is dependent on encouraging more students to attend college.

All of these factors add up to increased demand for higher education, a demand that challenges and exceeds the capacity of our higher education institutions. Even before the ECS report was released, Maryland’s public college and university officials were deliberating about their responsibility to address growing student demand for higher education. Sensitivity to this issue has been heightened by business leaders who indicate that they need a highly trained workforce with at least some level of college preparation.

³ Associated Press, "35,000 Students Shut Out of Community Colleges," *Community College Times* (September 30, 2003).

⁴ Hebel, Sarah, "California's Budget Woes Lead Colleges to Limit Access," *The Chronicle of Higher Education* (October 10, 2003).

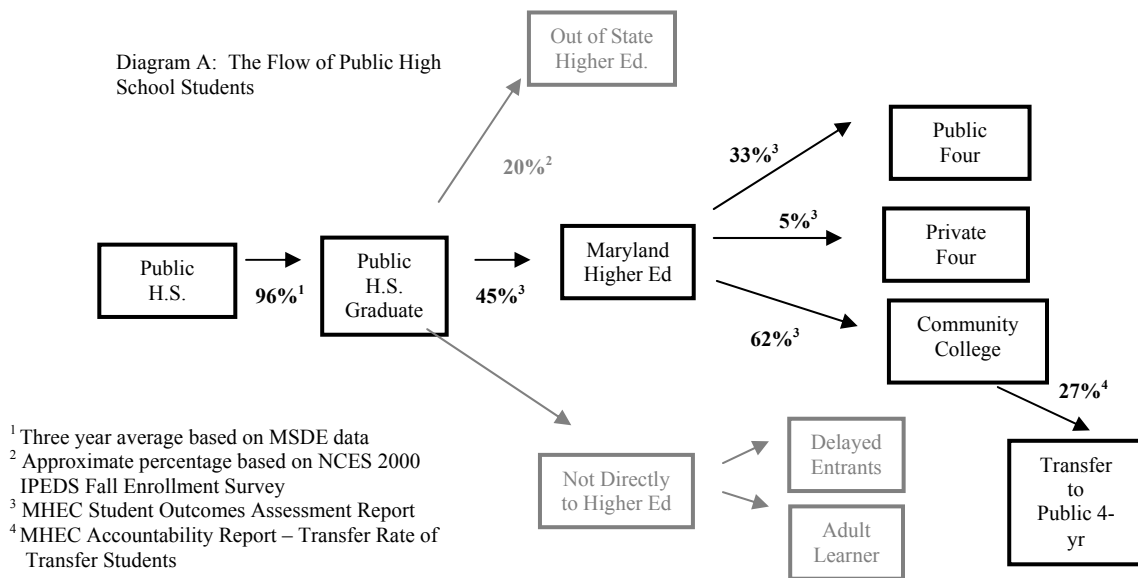
⁵ Carnevale, A., "A College Degree is the Key: Higher Education and the Changing Workforce," *National CrossTalk*, Volume 7.3 (Summer 1999).

More than a year ago, the Maryland Association of Community Colleges (MACC) and the University System of Maryland (USM) began efforts to systematically analyze and prepare for the coming capacity challenge. The Maryland Higher Education Commission (MHEC) has been a significant part of those efforts.

THE INTERDEPENDENCE OF THE K-16 CONTINUUM

Where Do Maryland's High School Graduates Go?

Diagram A, “The Flow of Public High School Students” shows the immediate progression of students through our higher education system. It shows that all components of that system make significant contributions to higher education access for our state. It also shows that the number of community college students seeking transfer to our four-year colleges adds half again to the number of first time entrants to the four-year colleges. The magnitude and expected growth in transfer entrants highlights the need for careful cooperation among two-year and four-year colleges in transfer admissions, an issue which is discussed below.



Enrollment, Demand, and Capacity

To respond to the JCR request and the growing concerns about capacity in public higher education, USM and MACC charged a workgroup to undertake a systematic discussion and consideration of potential demand for higher education in Maryland. In approaching this task, the workgroup carefully balanced the notions of “demand” – the number of high school graduates who will seek to attend an institution of public higher education in Maryland; “capacity” – the ability of our institutions, considering operating and capital funding levels and management strategies, to accommodate demand; and “enrollment projections” - which typically recognize the ability of institutions, given current and projected capacity, to accommodate a portion of the overall demand. An analysis of total demand, independent of capacity considerations, produces somewhat

different numbers than the enrollment projections that MHEC prepares in coordination with the institutions. The “demand analysis” developed by the workgroup should not be interpreted as undermining, questioning or attempting to invalidate the MHEC enrollment projection process and results that are currently in place.

The workgroup forecast suggests that the future demand curve for higher education in Maryland is likely to shift and may have already begun to do so. In the past several years Maryland has experienced increases in the college-going rate of high school graduates. A recent national survey of sixth through eighth graders indicates that over 94 percent of them say that they plan to attend college⁶. Maryland’s recent commitment to significantly enhance funding for K-12 education (“Thornton”) is designed to improve the academic preparation of students in our public schools, particularly the preparation of lower socioeconomic children and students from ethnic minorities that have had historically low college going rates. Recognizing recent trends and the fact that many states have higher college-going rates than Maryland, and incorporating some factor for success in achieving the goals established in the state’s Thornton funding plan, the workgroup forecast makes an assumption that the Maryland college-going rate will climb by 1 percentage point per year.

It is essential to examine a reasonable range of demand so that higher education officials and state policymakers can prepare for it and address its policy impacts. It is important to note that, regardless of which end of the range one considers (from the MHEC projections to the workgroup estimates), the inescapable conclusion is that Maryland faces a significant challenge in providing the capacity necessary to meet the growing graduating classes and the probable increased demand for higher education.

DEFINING THE CHALLENGE

Table 1 below summarizes the MHEC projections and the workgroup forecast. Overall, the workgroup forecast projects 31% growth in students (headcount), while the MHEC model projects 22% through 2010. The challenges of growth become even more daunting when we recognize that the demand impacts are not allocated evenly across the state. In some areas, the workgroup forecast is even higher, reaching the 40, 50 and 60 percent range, in some instances in the areas of our state that do not have access to extensive public higher education resources. (See Appendix 1.)

⁶ NCES, “Getting Ready to Pay for College,” National Center for Education Statistics, September 2003, (National Household Education Survey, 1999).

Table 1: Current and Projected Credit Enrollment

	Fall 2001	Fall 2005			Fall 2010		
	Actual	Projected	Difference	% Change	Projected	Difference	% Change
Community Colleges	109,411						
MHEC Projections		123,093	13,682	13%	132,361	22,950	21%
Workgroup Forecast		125,973	16,562	15%	146,769	37,358	34%
Public Four Years	95,251						
MHEC Projections		105,423	10,172	11%	117,624	22,373	23%
Workgroup Forecast		106,189	10,938	11%	121,204	25,953	27%
TOTAL	204,662						
MHEC Projections		228,516	23,854	12%	249,985	45,323	22%
Workgroup Forecast		232,163	27,501	13%	267,973	63,311	31%

As noted above, increased demand does not necessarily bring about increased enrollment. The interaction of demand, supply and price will ultimately determine the number of students who enroll in Maryland’s colleges. If demand increases at a time that supply of higher education services is curtailed because of an inability to replace teachers, a necessity to retain programs and an inability to replace and upgrade technology, then prices will rise; and we will possibly wind up with even fewer students in our public higher education system than MHEC’s projections suggest.

Public support for higher education definitely contributes to the supply side of the equation. When public support is reduced, tuitions typically rise, constraining access and enrollment levels. Furthermore, if price rises and financial aid programs, particularly those of a need-based nature, are not expanded in recognition of the fact that much of this new demand may be expressed by lower socio-economic students, then it is not likely that these students will make their ways through the doors of higher education. Again, enrollment demand is not enrollment projection - it is an expression of possibility, with actual levels of enrollment determined by demand, supply, price and actions by institutional, state and local officials.

Transfer Students

Also crucial in meeting demand is the flow of students through the various components of the higher education system. Therefore, the transfer process as it is currently working has been analyzed as part of the preparation of this report. At present it is working reasonably well with 82% of the transfer applicants accepted for admission at one of the USM institutions, 8% rejected and 10% no action (predominately incomplete applications) (Table 2). Maintaining this level of transfer success will become progressively more difficult as high school graduating classes grow in size, the number of applications for first-time admission to USM institutions rise, and the number

of students seeking transfer from community colleges grows dramatically over the next several years.

This challenge will be difficult in areas such as Southern Maryland, the upper Eastern Shore and the Washington Metropolitan region where growth rates are very high and public higher education capacity at the four-year level is relatively constrained. Committed partnerships of Maryland’s community colleges and USM to assure that transfer admissions and articulation remain among our highest priorities are more important than ever, as one aspect of managing enrollment increases is to facilitate the progress of students through the higher education system.

Table 2: Application Actions - Fall 2001 Community College Transfers

	All USM Institutions		All USM Institutions w/o UMUC	
	#	%	#	%
Applied	7,808		6,575	
Admitted	6,381	82%	5,148	78%
Rejected	635	8%	635	10%
No action	792	10%	792	12%
Admitted & Enrolled*	4,658	73%	3,719	72%

* Percentage of number admitted (6,381), not total applied.

Note: The numbers represent a count of unique applications. The number rejected identifies decisions made to deny acceptance for an application. No Action refers to incomplete applications (no decision made).

THE CHALLENGES OF CAPACITY AND AFFORDABILITY

Maryland faces significant policy choices about the future of higher education. Maryland’s public higher education institutions realize that not all of these choices can be addressed nor all of the capacity challenges eradicated with additional funding. However, a good beginning in understanding the capacity problem is an analysis of the funding implications that growth would imply given current formulas and assumptions. The sections that follow outline the facilities and operating budget implications of the range of estimates provided. These estimates provide the basis for a policy discussion about how much of the demand Maryland will prepare to address and what institutional and state funding and management options are available to support those decisions.

Facilities Capacity in the Public Higher Education System

For simplicity of analysis and consistency across segments, the MHEC facilities inventories and space guidelines were utilized to analyze the net assignable square footage (NASF) of institutions’ physical space (Table 3). The MHEC process takes into account the type and mission of the institution when determining space needs.

**Table 3: Maryland Higher Education Space Capacity
NASF Surplus/(Deficit) based on MHEC FTEs
Current (Fall 2002) and Projected (Fall 2012)**

	Fall 2002/ FY 2003				Future Projections - Fall 2012/ FY 2013			
	Classroom	Lab	Class and Lab	Total Inventory	Classroom	Lab	Class and Lab	Total Inventory
Community Colleges	32,401	-462,667	-430,266	-1,588,289	65,973	-579,665	-513,692	-1,905,184
USM Institutions	-145,379	-1,895,242	-2,040,621	-1,947,363	-165,690	-2,270,312	-2,436,002	-2,248,946
Morgan	13,994	-12,129	1,865	66,785	-12,235	-129,296	-141,531	-163,355
St. Marys	-14,952	-4,363	-19,315	-74,645	3,619	-121	3,498	19,867
Total	-113,936	-2,374,401	-2,488,337	-3,543,512	-108,333	-2,979,394	-3,087,727	-4,297,618
Offsets (Inventories)								
Community College-Temporary	95,626	62,422	158,048	799,715	95,626	62,422	158,048	799,715
Regional Higher Ed Centers	65,651	19,762	85,413	159,320	126,966	44,142	171,108	337,880
Final Total	47,341	-2,292,217	-2,244,876	-2,584,477	114,259	-2,872,830	-2,758,571	-3,160,023

Using MHEC data, Maryland's public colleges are 2.6 million square feet short of needed space today to educate present students! This is perhaps a testimony to efficiencies that institutions have pursued in reallocation of space, use of alternative instructional methodologies, and maximizing the limits of existing resources. One example of accommodating demand beyond traditional campuses is the use of regional centers, facilities that deliver baccalaureate, graduate and professional academic programs from multiple institutions in geographic regions not closely approximate to one or more institutions. These centers, which often collaborate closely with local community colleges, bundle educational offerings and meet enrollment demand in locations convenient to students.

Even with regional centers and temporary facilities, and even if one presumes that all of the projects included in the current capital program (2.9 million square feet for USM institutions and 1.2 million square feet for community colleges) are funded and built, the shortfall will rise to 3.16 million square feet by 2013. (See Table 3.) Should the workgroup forecasts materialize, these deficits could rise substantially, depending on average credit hour loads of students who enroll.

The growth in these current deficits will exacerbate an already critical problem. The wear and tear on facilities of serving many more students than those for whom the facilities were intended is creating a deferred maintenance burden that none of Maryland's institutions has the financial capability to address. The laboratory deficit is

more pronounced than classrooms due to increasing lab sciences requirements for general education, shift in teaching methods to include computers for traditional lecture courses, and increasing specialization of labs and equipment. The laboratory deficit in many institutions is particularly critical (currently 2.3 million NASF, expected to grow to at least 2.9 million NASF in Fall 2012) and could result in fewer students being able to enroll in areas of study that are crucial to Maryland’s fastest growing workforce areas, such as high tech and biotechnology. Clearly, improving the availability of facilities will be critical to serving increasing numbers of students.

Operating Impact of Enrollment Growth – Two Models

Two methods of analyzing needed operating funding levels for public higher education were undertaken by the workgroup. The “inflation model” simply applies an annual inflation rate (3.4%) to the current dollars per full-time equivalent student (\$/FTE). The “formula model” uses the legislatively-created Cade formula⁷ for community colleges and Funding Guidelines process for USM⁸, and examines the funding implications of meeting these legislative goals. We have projected funding needs using the MHEC projections and the workgroup forecast to create a range of funding implications. Tables 4A and 4B present the results.

**Table 4A
Projected Revenue for Community Colleges and 4 Year Public
Institutions
\$ per Student (FTE)**

INFLATION MODEL/MHEC PROJECTIONS

	FY 2003 - Actual	FY 2006 - Estimated Need	Deficit FY 2003 and FY 2006	FY 2011 - Estimated Need	Deficit FY 2003 and FY 2011
Community Colleges*					
State Funds	\$2,314	\$2,556	(\$242)	\$3,017	(\$703)
Tuition/Fees	\$2,408	\$2,659	(\$252)	\$3,139	(\$732)
Local Funds	\$2,742	\$3,029	(\$286)	\$3,575	(\$833)
Total	\$7,464	\$8,244	(\$780)	\$9,732	(\$2,268)
4 YR PUBLICS					
State Funds	\$8,784	\$9,710	(\$927)	\$11,477	(\$2,694)
Tuition/Fees	\$6,849	\$7,572	(\$723)	\$8,950	(\$2,100)
Total	\$15,633	\$17,282	(\$1,649)	\$20,427	(\$4,794)
TOTAL					
state \$/fte	\$5,790	\$6,281	(\$491)	\$7,425	(\$1,635)
tuition \$/fte	\$4,794	\$5,217	(\$423)	\$6,166	(\$1,372)
local \$/fte	\$1,269	\$1,452	(\$183)	\$1,713	(\$444)
Total	\$11,853	\$12,950	(\$1,097)	\$15,304	(\$3,451)

⁷ Annotated Code of Maryland, Education Article, Section 16-305.

⁸ Annotated Code of Maryland, Education Article, Section 10-203(a), Section 11-105(i)(2); Chapter 515 of the Public Laws of 1999, Section 4.

**Table 4B
Projected Revenue for Community Colleges and 4 Year Public
Institutions**

\$ per Student (FTE)

FORMULA MODEL/WORKGROUP FORECAST

	FY 2003 - Actual	FY 2006 - Estimated Need	Deficit FY 2003 and FY 2006	FY 2011 - Estimated Need	Deficit FY 2003 and FY 2011
Community Colleges*					
State Funds	\$2,314	\$2,951	(\$637)	\$4,092	(\$1,777)
Tuition/Fees	\$2,408	\$3,071	(\$663)	\$4,257	(\$1,849)
Local Funds	\$2,742	\$3,497	(\$755)	\$4,848	(\$2,106)
Total	\$7,464	\$9,519	(\$2,055)	\$13,196	(\$5,732)
4 YR PUBLICS					
State Funds	\$8,784	\$12,866	(\$4,082)	\$17,154	(\$8,370)
Tuition/Fees	\$6,849	\$10,033	(\$3,184)	\$13,377	(\$6,528)
Total	\$15,633	\$22,899	(\$7,266)	\$30,531	(\$14,898)
TOTAL					
state \$/fte	\$5,790	\$8,320	(\$2,530)	\$11,110	(\$5,321)
tuition \$/fte	\$4,794	\$6,841	(\$2,047)	\$9,157	(\$4,363)
local \$/fte	\$1,269	\$1,603	(\$334)	\$2,243	(\$974)
Total	\$11,853	\$16,764	(\$4,912)	\$22,511	(\$10,658)

* includes Baltimore City Community College, which may skew proportions since BCCC does not receive local funding.

Notes: These cost models use FY03 as the benchmark funding year. The base model estimates the \$/FTE and increases this rate by an inflation factor of 3.4. The USM target model is based on the Funding Guideline. FY04 target \$/FTE are set using peer data and are grown by 6.3% growth rate -- the average rate of increases in peer revenue and in mandatories for the past 5 years. Estimates of the funding guideline exclude enrollment adjustments for the first professional students. The Community Colleges apply the Cade Formula to determine target funding levels. The target model applies 7.7% to USM targets to estimate target funding for MSU/SMCM. The total revenue targets are distributed to state, local, and tuition revenue sources using the FY03 proportions. Other funds, such as federal, Title III, and other unrestricted revenues are excluded because they do not impact state budget decisions.

The data suggest a need for an additional \$3,451-\$10,658 per full-time equivalent student from all revenue sources by the year 2011 (3.3%-8.3% compounded annual rate of growth). Using these models, state aid would need to increase by \$1,635-\$5,321 per student by the year 2011 (3.2%-8.5% annually). To achieve the level of funding guidelines reached before the recent economic downturn would require increased state aid of \$4,210 per student or 7.0% growth compounded annually (versus the \$5,321 per student increase or 8.5% growth rate presented above).

At the low end of this range, it will be difficult for Maryland's public institutions to serve the entire number of students in the MHEC enrollment projections, let alone accommodate additional demand. Funding below this level would have serious consequences on accessibility, affordability and quality of higher education in Maryland. Colleges would not even have adequate resources to keep up with escalating fringe benefit costs, to replace costly technology and to address rapidly rising deferred maintenance needs of facilities, let alone consider adding faculty and staff to teach and support larger numbers of students.

Affordability

The operating budgets of institutions of public higher education are comprised primarily of state general funds and tuition revenues. Simply put, as one of the two main revenue streams declines, the other must go up to meet ongoing costs. A recent national survey conducted by the State Higher Education Executive Officers concluded that the level of state general fund appropriations was “by far the most significant factor” in the setting of tuition levels.⁹ For public policy purposes, it is vital to understand that general fund support and tuition levels are directly connected.

As noted earlier, by 2011 an additional \$3,451-\$10,658 per student will be required to maintain quality educational offerings. The allocation of that per student cost between the state and the student is a major policy decision facing states across the country. (For community colleges in Maryland, funding allocations of local governments are also a factor.) The crucial choices that states, including Maryland, are facing will determine the future of accessible, affordable higher education in this country. At a time when demand for postsecondary education is becoming universal, when the job growth fields require some college, and when technology change is demanding ongoing retooling of the workforce, these decisions should be approached with great care. Certainly, if the current levels of diminished funding prevail, tuition growth will dramatically outstrip rates of growth of the past decade and will have a serious impact on access. (See Appendix 2 for an example of possible growth levels given constant state funding.)¹⁰

Financial Aid

Financial aid is essential to support access to and affordability of higher education for Maryland citizens. As more students enroll in college, college populations become increasingly diverse and tuition levels rise, more and more students will require financial assistance. Increases in need-based aid are particularly critical to ensure access for Maryland students from low and moderate-income families.

Financial aid has grown considerably over the last several years. Undergraduate students enrolled at Maryland public institutions received more than \$586 million in assistance in FY 2002, an increase of almost \$400 million or 213% since 1992 (Table 5).

⁹ State Higher Education Executive Officers, *State Tuition, Fees, and Financial Assistance Policies, 2002-2003* (page 12, Table 3) (June 2003).

¹⁰ Appendix 2 is designed solely to illustrate the relationship between state general fund support and tuition, and does not reflect any desire or plan on behalf of institutions of public higher education or state policymakers to increase tuition at the shown rates.

Table 5
Trends in Undergraduate Student Financial Aid at Public Institutions
Aid By Source and Type

	1992	Percent of Total Aid - 1992	2002	Percent of Total Aid - 2002	Percent Change 1992- 2002
<i>By Source:</i>					
Federal Need-Based Grants	52,961,150	18.3%	122,456,377	13.7%	131%
Federal Scholarships	207,408	0.1%	709,849	0.1%	242%
State Need-Based Grants	6,378,043	2.2%	25,247,955	2.8%	296%
State Scholarships	11,394,977	3.9%	31,234,029	3.5%	174%
Institutional Need-Based Grants	5,030,204	1.7%	14,958,002	1.7%	197%
Institutional Scholarships	16,760,616	5.8%	60,534,567	6.8%	261%
Private Need-Based Grants	640,660	0.2%	4,183,545	0.5%	553%
Private Scholarships	7,897,719	2.7%	24,849,312	2.8%	215%
<i>Totals</i>					
Total Need-based Grants	68,922,966	37%	176,033,867	30%	155%
Total Scholarships	31,665,575	17%	106,248,236	18%	236%
Total Loans	57,287,633	30.6%	280,999,062	48.0%	391%
Total Workstudy	24,887,622	13.3%	14,357,392	2.5%	-42%
Tuition Waivers to Employees and Dependents	4,595,905	2.5%	8,370,846	1.4%	82%
Total	187,359,701	100.0%	586,009,403	100.0%	213%

Source: Maryland Higher Education Commission S-5

However, the most significant trend during this period has been the shift in the primary source of assistance from need-based grants to loans. In FY 1992, need-based grants provided 37% of the total aid received, followed by loans at 30.6%. By 2002, loans provided 48% of total assistance, with need-based grants dropping to 30%. Unfortunately, the trend of increasing reliance on student loans does not support the goals of access and affordability since numerous studies have shown that student loans are not effective in providing access for students from low-income families.¹¹

¹¹ See, e.g., Price, Derek V., "Student Loans and Social Inequity," Lumina Foundation for Education (2002); Cofer, James and Somers, Patricia, "A Comparison of the Influence of Debtload on the Persistence of Students at Public and Private Colleges," *Journal of Student Financial Aid*, 30(2) (2000).

While funding for grant assistance has increased in the last ten years, these programs have not kept pace with college costs. The purchasing power of the federal Pell Grant, the largest source of need-based assistance, has declined significantly. The state's primary need-based grant for undergraduate students, the Educational Assistance Grant, is also struggling to keep up. The number of eligible students on a waiting list doubled in FY 2004 to more than 9,000 students. Institutional need-based aid has increased by almost 200% since FY 1992; however, these programs provide less than 2% of total financial aid funds.

The importance of increasing need-based financial assistance has been identified in *Measuring Up 2000 and 2002*, the 50 state report card prepared by the National Center for Public Policy and Higher Education. The Center found that low-income Maryland families are required to devote a large proportion of their family income, even after financial aid, to attend the state's public two and four-year colleges and universities. In fact, Maryland's grade in affordability dropped from a 'D' to a 'D-' in the 2002 report.¹²

The trends in financial aid along with the growing diversity of students, projected increases in enrollments, and increases in tuition point out the critical need for additional funding for need-based grants to ensure opportunity and access to higher education for students from low and moderate-income families.

CHOICES AND OUR FUTURE

To maintain student access and accommodate growth, the higher education community and Maryland's elected officials face crucial public policy choices. The college access crisis that the Education Commission of the States report highlights will not be escaped in Maryland. Maryland's approach to addressing it will have a significant impact on our state's economy and the future of its increasingly diverse student population.

The crucial higher education policy question that faces the state can be phrased as follows: how will we address the coming student demand and how will we fund it? Given the size and magnitude of anticipated student demand for college, USM and MACC recognize that the public colleges and universities must contribute to the solution with both creative approaches to delivering our services and with cost containment initiatives. But this challenge cannot be addressed by these strategies alone. Significant state support is a vital part of Maryland's ability to meet the needs of our students and the Maryland economy.

¹² National Center for Public Policy and Higher Education, *Measuring Up 2000* (November 2000) and *Measuring Up 2002* (October 2002).

The following recommendations are offered for the consideration of our state policy makers and college leaders:

Institutional Efforts

Maximize the use of regional centers in meeting enrollment demand and, in partnership with the State, provide the funding needed to do so. The community colleges and the four-year institutions are undertaking many initiatives to deliver four-year degrees through partnerships between community colleges and four-year institutions, often at regional centers. Some of these centers are relatively new and others are more mature and well developed. All must succeed and expand programming, and these facilities must be used to high levels of efficiency.

Encourage students to progress through higher education promptly and efficiently. Careful advising of students is essential to assure that they are taking appropriate degree requirements and will not need extra credits to graduate. Ongoing communication and articulation of programs between two-year and four-year colleges (similar to the new Associate of Arts in Teaching (AAT) and Bachelor of Science in Nursing (BSN) degree options) are essential to assure that students have a smooth and efficient transition from two-year to four-year institutions. The institutions should examine further the reasons for, and, if necessary, develop strategies to address, the 10-12% rate of “no action” transfer applications. Institutions should evaluate the potential impact of decreasing spring and sophomore admissions at four-year institutions.

Encourage students who begin in community colleges to finish their associate’s degrees there before transferring. This reduces some of the capacity challenge at the four-year college level and enables community colleges to plan better for enrollments that stay and progress to degree rather than leave after a single semester.

Continue to assure that transfer processes are student-centered and excellent, and that the rates of rejection of transfer students do not rise as demand increases. The MACC/USM workgroup found that current systems are largely in place to accommodate transfers from community colleges to four-year institutions. Many of the strategies discussed above are designed to maintain and enhance these efforts. We must be mindful of the increased pressure that larger numbers of students will place on the ability to continue to make progress in this area.

Continue institutional investment in need-based aid. While small relative to the combined state and federal aid programs, institutional aid provides an important source of support to keep college affordable to students.

Explore possibilities for further increasing the use of current facilities and encourage new models that allow institutions to share physical capacity to better meet student demand. This could involve incentives to students to use facilities in off-hours (such as pricing discounts), concurrent location of programs of multiple institutions on two-year and four-year campuses and other creative approaches.

Leverage the use of the high school senior year for well prepared students so that students can maximize the college credits that they bring with them to their higher education experience. Many high school students have completed all of their high school requirements except senior English by the beginning of their senior year. In cooperation with the state and with local school systems, public higher education must find ways to provide more high school students a “head start” to achieving a degree. Encouraging college-level study in the senior year of high school will serve to challenge the student, reduce the future cost of the degree to the student and the family, and hasten the completion of the degree. For institutions, this helps reduce the pressure on the capacity of physical facilities.

State Efforts

Recommit to the funding formulas and approaches that have been adopted to support public higher education in Maryland. The State of Maryland faces serious fiscal challenges. Institutions of public higher education have done, and will continue to do, the best job possible in light of the decreased state support that these fiscal challenges have necessitated. Maintaining access, quality and affordability is not sustainable, however, if the decline in state support persists for several years. While not perfect, Maryland’s current system for providing general fund support for public higher education recognizes the connection between all segments of higher education, and aspires to provide a level of support that allows this state’s colleges and universities to compete with our peers across the country. Maryland’s public institutions of higher education have demonstrated an ability to meet and exceed the quality offered by other states when resources are made available. While recognizing the severity of the fiscal conditions facing Maryland, the state is urged to reinstate public higher education as a priority.

Continue to support the capital needs of public institutions of higher education and create a state task force on higher education capital needs to recommend appropriate investment levels in light of projected enrollments and potential demand changes. This task force, comprised of representatives of public higher education and the legislative and executive branches, would identify specific projects and priorities, timelines, and funding sources and methodologies to eliminate the deficit over time. It could also consider the challenge of deferred maintenance.

Make need-based financial aid a priority, particularly given the Thornton effort and its associated anticipated impact on increasing demand for higher education among those with historically low college-going rates. Increases in need-based aid are critical to support access to higher education, particularly as more students enroll in college, college populations become increasingly diverse, and tuition levels rise. Institutions have worked to mitigate the impact of recent tuition increases on our most needy students, by reallocating a portion of the increased tuition to financial aid. However, the practice of spreading the burden for providing financial aid across the base of students attending the institution, rather than enhancing the capacity of the state and federal government to provide aid to needy families, is not sustainable in the long-term. Maryland already receives a ‘D-’ in affordability from the National Center for Public Policy and Higher

Education, a grade which will not improve in an era of declining state support and increased tuition rates.

Increase outreach to the public schools to assure that students take appropriate college preparatory courses, and understand the cost of college and the availability and processes for applying for financial aid. Taking the right courses will reduce the remediation burden at the collegiate level. Recent national data suggest that parents and students overestimate the cost of tuition and are not well informed about financial aid programs.

Invest in technology that will permit institutions to expand distance learning and combine distance and on-site delivery to maximize facilities capabilities. A recent MHEC report¹³ concluded that Maryland is a national leader in distance education, and asserts that a state investment in distance learning is a cost-effective way to help address the capacity crunch. While the need for, and the cost of operating, a traditional institution will never disappear, and while the cost of providing distance learning may not be different than the cost of providing traditional instruction, it is possible to accommodate some categories of students through distance learning programs, helping to ease the pressure on physical space. The expansion of distance learning should also be a priority for the public institutions of higher education, where appropriate to the mission and the needs of students.

CONCLUSION

Maryland, like other states across the country, must confront a very difficult public policy issue – how do we accommodate a growing number of students who want to attend a public institution of higher education? The current capacity of our institutions is already stretched. As this JCR Report reveals, any methodology used to predict future demand leads to the same conclusion – unless steps are taken to address the problem, Maryland will end up excluding a large number of students, or will be unable to serve these students in the way they need to be served.

Maryland's institutions of public higher education must continue to work as partners to address the demand for higher education and the accompanying capacity challenge. But unless Maryland wants to change its fundamental commitment to accessible higher education, the challenge cannot be met without additional state investment. This is true even if Maryland strives only to maintain present college-going rates, which will produce substantial growth for Maryland public colleges and universities. However, if the State's investment in Thornton results in fostering the dream of higher education for more of Maryland's less privileged children, and preparing them to achieve that dream, public higher education institutions will face even larger dilemmas. Higher education leaders need the guidance and support of our elected officials in meeting these challenges. Further exploration and implementation of appropriate recommendations from this report is an important next step.

¹³ Maryland Higher Education Commission, *Distance Learning in Maryland Colleges and Universities, Academic Year 2001-2002* (October 2003).

Appendix 1: Regional Contributions - New Entrants

	Actual		Projected FY 2006		Projected FY 2011		Difference Actual vs. FY 2006				Difference Actual vs. FY 2011			
	Fall 2001/FY 2002		Projected FY 2006		Projected FY 2011		Comm. Coll		Public 4-Year		Comm. Coll		Public 4-Year	
	CC	Pub. 4-Yr	CC	Pub. 4-Yr	CC	Pub. 4-Yr	#	%	#	%	#	%	#	%
Baltimore Metro	11,208	6,694	13,245	7,809	14,481	8,794	2,037	18.20%	1,115	16.70%	3,273	29.20%	2,100	31.40%
Low er Eastern Shore	736	814	807	789	871	844	71	9.60%	-25	-3.10%	135	18.40%	30	3.70%
Frederick/Washington County *	2,315	796	2,565	1,087	2,894	1,212	250	10.80%	291	36.60%	579	25.00%	416	52.20%
Northeast Maryland	1,762	828	2,056	980	2,295	1,134	294	16.70%	152	18.40%	533	30.20%	306	36.90%
Southern Maryland	1,416	978	1,775	1,130	2,104	1,326	359	25.40%	152	15.50%	688	48.60%	348	35.50%
Upper Eastern Shore	504	360	694	495	756	554	190	37.70%	135	37.50%	252	50.10%	194	53.90%
Washington County *	834	224	796	266	847	285	-38	-4.60%	42	18.80%	13	1.50%	61	27.20%
Washington Metro *	8,823	6,642	12,214	7,826	14,221	9,206	3,391	38.40%	1,184	17.80%	5,398	61.20%	2,564	38.60%
Western Maryland	1,403	381	872	405	896	428	-531	-37.80%	24	6.30%	-507	-36.10%	47	12.20%

Notes: 1) Actuals represent fall 2001 first time students and transfer students who were enrolled in public four-years during fall 2001 after enrolling at a community college in fall 2000. Fall numbers may under-represent total fiscal year entrants. 2) Because of the changing nature of Frederick county and its students, it has been included in two regions: Washington Metro and Frederick/Washington County.

**Appendix 2: Tuition Revenue Per FTE
FY 2006 and FY 2011**

Increase Proportion of Tuition Revenue

TABLE A: INFLATION MODEL DATA WITH MHEC ENROLLMENT PROJECTIONS

Community Colleges

	FY03		FY06		FY11		Change between FY03 and FY11	
\$/FTES	\$7,464		\$8,244		\$9,732		\$2,268	30%
State \$/FTE	\$2,314	31%	\$2,314	28%	\$2,314	24%	\$0	0%
Tuition \$/FTE	\$2,408	32%	\$2,901	35%	\$3,843	39%	\$1,435	60%
Local \$/FTE	\$2,742	37%	\$3,029	37%	\$3,575	37%	\$833	30%

Annual rate of increase between FY03 Tuition \$/FTE and FY11 Tuition \$/FTE:

6.0%

Public Four-Year Institutions

	FY03		FY06		FY11		Change between FY03 and FY11	
\$/FTES	\$15,633		\$17,282		\$20,427		\$4,794	31%
State \$/FTE	\$8,784	56%	\$8,784	51%	\$8,784	43%	\$0	0%
Tuition \$/FTE	\$6,849	44%	\$8,498	49%	\$11,643	57%	\$4,794	70%

Annual rate of increase between FY03 Tuition \$/FTE and FY11 Tuition \$/FTE:

6.9%

TABLE B: FORMULA MODEL DATA WITH WORKGROUP FORECAST

Community Colleges

	FY03		FY06		FY11		Change between FY03 and FY11	
\$/FTES	\$7,464		\$9,519		\$13,196		\$5,735	77%
State \$/FTE	\$2,314	31%	\$2,314	24%	\$2,314	18%	\$0	0%
Tuition \$/FTE	\$2,408	32%	\$3,683	39%	\$5,998	45%	\$3,590	149%
Local \$/FTE	\$2,742	37%	\$3,522	37%	\$4,884	37%	\$2,142	77%

Annual rate of increase between FY03 Tuition \$/FTE and FY11 Tuition \$/FTE:

11.0%

Public Four-Year Institutions

	FY03		FY06		FY11		Change between FY03 and FY11	
\$/FTES	\$15,633		\$22,899		\$30,531		\$14,898	95%
State \$/FTE	\$8,784	56%	\$8,784	38%	\$8,784	29%	\$0	0.0%
Tuition \$/FTE	\$6,849	44%	\$14,115	62%	\$21,747	71%	\$14,898	217%

Annual rate of increase between FY03 Tuition \$/FTE and FY11 Tuition \$/FTE:

15.5%

Notes: An assumption is made that the proportion of revenue coming from local funds for community colleges will remain stable over time. Tuition and fees estimates exclude mandatory fees and include the technology fee for USM institutions.