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FACILITY REVIEW

NOVEMBER 2018

A report on the condition of facilities at Missouri's public colleges and universities

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Unique terms are used in facility management and the capital budgeting process. Some of those unique words mentioned in this report can be found at *http://www.appa.org/research/glossary.cfm*.

From the Chair

The Coordinating Board for Higher Education and the Missouri Department of Higher Education are pleased to present the 2018 Higher Education Facility Review. The report includes a summary of key facts about our state's public colleges and universities, each institution's top capital funding priorities, and recommendations for policy-makers and appropriators.

Since the last facility review was conducted in 2009, campuses have seen significant improvements – many of which were made possible by the Board of Public Buildings bond funding authorized in 2016 by SB 723 (Parson). Unfortunately, several negative trends outlined in this report have negatively affected learning environments for students, teaching environments for faculty, and lab space for researchers.

We look forward to working with the Governor and members of the General Assembly to address the issues described in this report and we welcome all dialog about these important assets, which provide opportunities to Missourians around the state and serve as anchors in communities from Maryville to Cape Girardeau and Neosho to Hannibal.

Doug Kennedy

Doug Kennedy, Chair
Coordinating Board for Higher Education

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2018 Facility Review – Executive Summary

In early 2018, the Commissioner of Higher Education directed staff to undertake a comprehensive review of public college and university facilities around the state. This review serves as an update to the 2009 report. The overall goal of this review is to assess the "state of the state" of higher education facilities and to review and understand the trends and issues institutions face.

One of the major tasks undertaken in this report was to determine the size and scope of the public higher education facilities' footprint in Missouri and to provide concise and historical information to improve decision-making regarding capital improvements. The Executive Dashboard on page 15 summarizes the statewide footprint both by educational sector and overall.

Historically, buildings designated as "educational and general purpose" (E&G) are eligible for state funding. "Auxiliary buildings" (AUX) and other fee-based facilities, such as residence halls, are not. This is not a statutory prohibition, but rather general budgeting policy.

Overall, public institutions of higher education (IHEs) have a significant facility footprint of over 2,453 buildings with 60,195,203 maintainable square footage resting on 25,760 acres. Of these buildings, 34 buildings are on historic registers that require priority preservation.

IHEs play a major role in their local communities with many public/private partnerships that make these campuses a vital part of community health and wellness and allow them to serve as centers of cultural and historical significance. These facilities serve a variety of community needs in addition to the traditional academic role. Examples of other purposes include:

- Non-credit adult instruction
- Adult basic education and life skills
- Child development programs
- Academic and athletic summer camps
- Cultural and theatrical productions
- Museums
- Continuing professional education
- Exercise, health, and wellness centers
- Sporting venues and tournament sites
- Testing centers

Major trends affecting higher education facilities:

After a comprehensive review of the facilities and multiple focus groups, the major trends can be summarized as follows. They are listed in priority order:

- Increasing severity of deferred maintenance.
- Instability of funding for capital improvement projects in higher education.
- Difficulty meeting workforce demands due to inadequate quantity and quality of space.
- Growing competition and out-of-state student migration affecting student choice of institution.
- Escalation of the need for improved physical safety and cybersecurity affecting students and staff.
- New demands on and rising costs of education technology (infrastructure and software).

Additional Issues Include:

- **Space Utilization:** Standards for space utilization are needed.
- **Emergency Capital Funds:** IHEs are not currently eligible for emergency capital improvement funding from the Office of Administration and no state capital emergency fund exists for IHEs.
- **Private Donors:** Some IHEs are better positioned to raise private funds to support capital improvements.
- **IHE Funding Sources for Capital Needs:** The budget process produces inadequate information on capital funding sources for projects and ongoing costs.
- **Budget Process:** IHEs have limited knowledge of the Capital Improvement Budget Request System (CIBR) and the overall capital improvement budget process.
- **CIBR Asset Inventory:** Existing policy and state law are confusing regarding inclusion of general and auxiliary buildings in the CIBR system.
- **CIBR Facility Condition Index Limitations: (FCI)** The CIBR system is limited in its ability to adequately and accurately assess higher education facilities, especially in regard to the automatic assignment of a facility condition index.

The following budgetary and policy recommendations were developed in response to the identified trends and strategic issues. Many of these issues cannot be resolved in the short term as capital projects and budgeting is often a multi-year process. As a result, many of these conditions will worsen before they are addressed, significantly increasing costs. This report is intended to help guide the next decade in capital improvement priorities. Some of the recommendations will require action by the Governor and the General Assembly. Recommendations of the Coordinating Board of Higher Education include:

CBHE Budgetary Recommendations:

- Create a statutory and budgetary appropriation to be allocated by the CBHE based on **emergency capital improvement needs.**
- Increase appropriations for all institutions to address **major deferred maintenance.**
- Create a new appropriation specifically for CBHE-designated **critical capital improvements.**
- **Link new capital budget recommendations to workforce needs** as special programs often require specialized facilities and equipment for accreditation.
- Create a more **formal needs-based approval process** for all new state-funded construction to be included with state funding requests that **require CBHE endorsement.**
- Allocate a special appropriation to the CBHE to prioritize the **demolition of buildings.**

***For more detail, see page 14**

CBHE Policy Recommendations:

- MDHE staff and the Office of Administration should clarify the capital improvement budget process, policy, and methodology for the CBHE prioritization of capital recommendations.
- Require all state capital funding requests for new construction to include a clear estimate of ongoing costs for the proposed facility and how they will be budgeted.
- Establish a more formal cooperative procurement program in higher education that includes creation of a data repository for sharing contract bid specifications as well as cooperative contracts for goods and services (both for facility directors and technology needs).
- Continue to bring facility directors and CIOs together at least semi-annually to work toward institutional standards, shared services, and to address strategic issues such as cybersecurity.

Conclusions:

The 2018 Higher Education Facility Review illustrates significant facility challenges for IHEs, some of which are broadly shared and others that are unique — just as institutional missions are unique.

State funding for higher education institutions has declined significantly in recent years, and those reductions have had a negative impact on deferred maintenance. In FY 2017 and 2018, institutions' core appropriations were reduced by a total of $130 million. Additional higher education expenditure restrictions for those years totaled $91 million. This cumulative reduction of $221 million over a two-year period has contributed to an already significant deferred maintenance problem, and has a direct effect on the quality and condition of higher educational facilities statewide.

Addressing deferred maintenance and identifying funding to support new construction will be a major challenge in the coming decade – but it is one the Coordinating Board for Higher Education, public colleges and universities, policy-makers, and appropriators must face squarely.

About the 2018 Facility Review

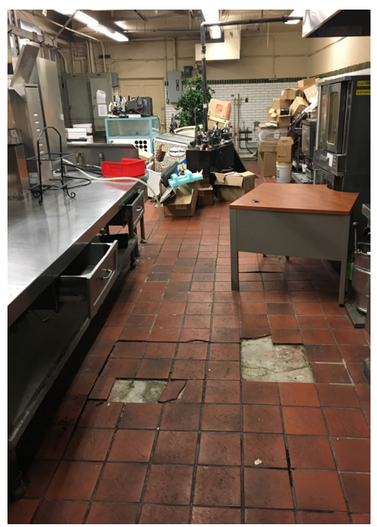
The report is based on information gathered through staff visits to each public institution of higher education in the state, data, and conversations with stakeholders. Much of the discussion focused on students' learning environments, accreditation requirements, and workforce needs. The report development process included the following:

- MDHE staff and members of the Coordinating Board completed 27 on-campus reviews between March and June 2018
- MDHE staff met with chief financial officers, facility directors, chief information officers, and chief academic officers to discuss issues related to facilities and receive feedback on the report
- The MDHE hosted a Capital Improvement Budget Request (CIBR) system webinar on July 12, 2018
- MDHE staff met with the Office of Administration's Division of Budget & Planning (B&P) and Facilities Management Design and Construction (FMDC) staff to receive advice and information
- MDHE staff consulted House and Senate staff as to the use of the report by staff and elected officials
- MDHE staff conducted a review of statutory requirements affecting facilities

Major differences between this report and the 2009 report include:

- Creation of a new institution-specific facility dashboard to provide baseline data
- Creation of a new statewide dashboard by sector (2-year and 4-year IHEs) to provide a greater understanding of higher education facilities' size and scope
- Inclusion of specific higher education capital improvement appropriation historical information, both statewide and by institution
- Expansion of trends to include strategic issues faced by institutions regarding facilities
- Inclusion of additional education technology and distance learning as they relate to facility needs
- Demographic information that may help guide facility needs based on population projections

An outdated lecture hall



Unusable space

Ceiling paint peeling

2018 Trends & Issues

Increasing severity of deferred maintenance

Deferred maintenance can be generally defined as the postponement of building and equipment upkeep from an entity's normal operating budget cycle due to a lack of funds. Lack of funding for routine maintenance can cause neglect, allowing minor repair work to evolve into more serious conditions. The problem is further compounded by choices made during difficult financial times when routine maintenance is often deferred in order to meet other fiscal requirements. Failure to address major repairs and/or restore building components that have reached the end of their useful lives results in a deferred maintenance backlog.

At this time, the known deferred maintenance for IHEs is as follows:

- Community Colleges: $118,618,035
- Public Universities: $1,377,628,664
- State Technical College of Missouri: $2,212,108

Total known deferred maintenance for all IHEs: $1,498,458,807

Properly maintained campus facilities reflect the pride of the institution. IHEs must address basic needs in an energy-efficient and fiscally responsible manner to continue to attract talented faculty, researchers and students. IHEs, as economic engines of the state, rely on faculty, researchers and students to serve as the fuel for the state's future competitive needs.

In some cases, institutions no longer have valid estimates or well defined deferred maintenance needs documented. Two institutions were unable to provide deferred maintenance estimates. Even the institutions that were able to provide a reasonably accurate deferred maintenance estimate for educational and general use buildings (often estimates prepared by private contractors), will likely see an increase to these costs due to inflation the longer the maintenance is postponed. Each institution's dashboard includes the amount of deferred maintenance for that campus (if available). The current state inflationary factor used in the CIBR system is 3.3% per year.

Projects that often get deferred include delayed equipment purchases and repairs, furniture purchases and repairs, maintenance contracts, carpeting and flooring, paint, electrical work, plumbing, repaving parking lots, sidewalks, ADA improvements, and elevator maintenance. Salaries for maintenance employees who provide these services may also be affected. Projects of the greatest concern identified during the review include roof repairs, climate control systems and boilers. Several campuses had water infiltration issues that cause water to pool inside buildings or decaying infrastructure/building exteriors. One building had a classroom closed due to termite damage that was so extreme, students had to be evacuated during a class when the floor began to shift below them.

Other significant issues in many campus buildings include cracked and peeling paint, water-damaged ceilings and walls, buckling floor tiles, aging plumbing and electrical systems, elevators that no longer meet code, inefficient HVAC systems, and ADA non-compliant stairways, general entrances, and bathrooms. Many buildings' facades need to be tuck pointed, sealed, and simply painted. Several institutions' roofs need to be repaired. Others are working to remove asbestos and other harmful materials but many still have significant abatement needs, which drives costs. Due to abatement costs, some institutions have had to cover asbestos tile with carpet or install drop ceilings when available funds could not adequately address these issues.

The results of deferred maintenance are also clearly visible in outdoor areas: parking lots are in need of resurfacing and sidewalks are cracked. These issues are not just cosmetic. Many of the problems noted above are indicative of serious problems such as water infiltration through exterior walls, windows, and roofs. Such problems worsen every year unless corrective action is taken.

cont. >>

Trends & Issues Continued

While many institutions have invested in energy efficiencies such as LED lighting (both inside buildings and to improve safety and security on campus grounds and parking lots), and motion detectors that automatically turn lights off and on, the needs for energy efficiency are significant and can have a direct and immediate cost savings for institutions. Old plumbing, roofs, and electrical and HVAC systems will disrupt campus activity significantly when they fail. In 2018, one institution had to close the main road into campus and seek emergency repairs for a steam tunnel that provided heat to 70% of its campus. When these systems fail, immediate action is required and there is no time to seek a state appropriation that often is not available until months later — if ever. Unfortunately, many smaller IHEs have insufficient reserves to address such issues and larger IHEs must make budget adjustments to address these types of critical needs. With the significant deferred maintenance issues at IHEs, more and more emergency needs will present themselves.

Deferred maintenance can have a negative impact on safety. Overloaded electrical systems and extension cord overuse due to a lack of electrical outlets are common. Many of these buildings were not constructed to meet modern technology needs. Most of the older buildings with thick rock walls prohibit wi-fi access and require significant equipment investments to provide reliable internet connectivity.

Many institutions still need significant investments to provide for the safety of students, faculty and staff. Aging boilers, elevators that do not meet code requirements, and compromised brick facades are all examples of problems that jeopardize the safety of individuals on campus. However, many institutions have begun to upgrade safety systems such as fire and ventilation systems. Fire suppression and sprinkler systems and specialized cooling systems for IT infrastructure are common needs.

Numerous historic buildings, including 34 on historic registers, are at risk due to deferred maintenance. In several IHEs, buildings have become unusable for educational purposes and are now used for storage. In many instances, it will be more cost-effective to demolish a building than to attempt costly retrofitting and renovations. In total, 70 buildings at public institutions around the state need to be demolished. However, demolition also requires significant funding.

In addition, many institutions have been unable to prioritize funds to maintain facility condition index ratings and estimates for buildings, which likely makes the deferred maintenance assessment in this report lower than actual costs.

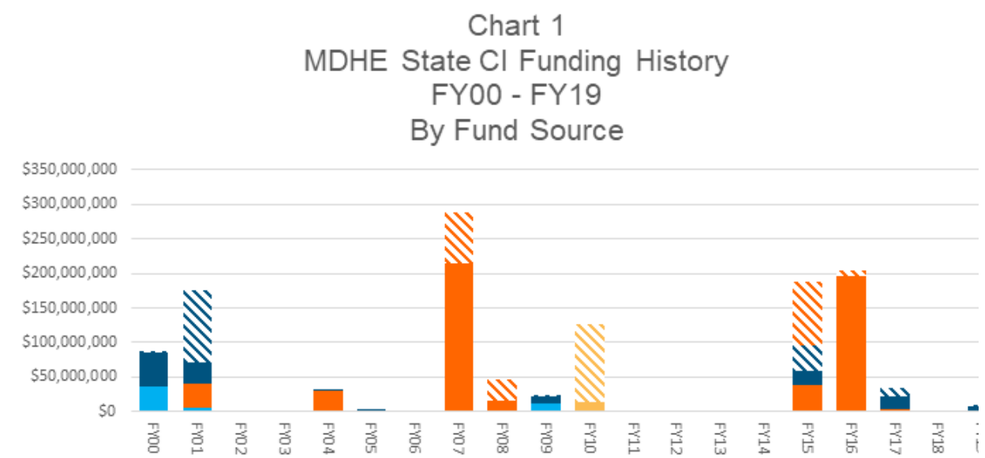
Window repairs and bench replacements needed

Asbestos floor tiles, water infiltration and outdated heating

An outdated fuse box with outdated fuses

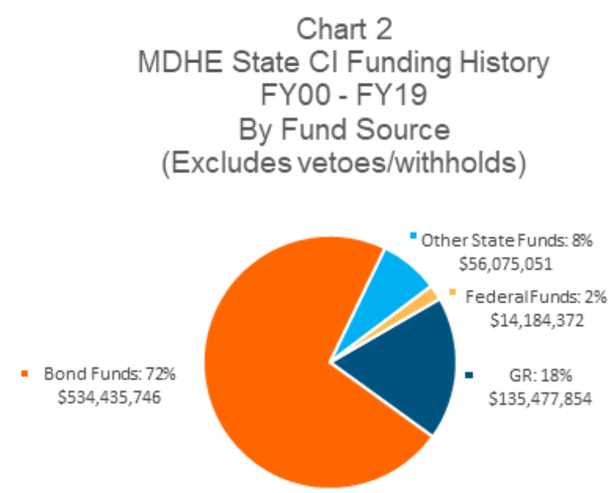
Instability of funding for capital improvement projects

Based on the summary of state capital improvement funding included in this report, one of the trends that has negatively affected institutions is the ability to effectively budget for projected facility needs. As Chart 1 indicates, the state has not regularly budgeted for capital improvements, apart from core institutional budgets (see Appendix C), which have declined significantly in the state share of their overall operating budgets. A related trend is the appropriation of capital improvement funds followed by restrictions and vetos, forcing institutions to cancel or re-scope projects or to access emergency reserves to complete projects. Institutions now pursue state capital improvement requests knowing that the commitment of the state can change. The striped sections of the stacked bar graph in Chart 1 highlight these restrictions/vetos. It is important to note that maintenance and repair funding for community colleges has been a separate appropriation in House Bill 3, while these costs are a part of the core budgets for the public universities.



Source: Missouri Office of Administration

The majority of public funds invested in higher education facilities in the last 20 years has been provided through special bonding initiatives (72%) followed by general revenue (18%) as shown in Chart 2. There has clearly been no regular investment of general revenue (represented in blue in both Chart 1 & 2).



Source: Missouri Office of Administration

Trends & Issues Continued

Difficulty meeting workforce demands due to inadequate quantity and quality of space

Facility reviews generally highlighted a need for improvements in classrooms, specialized programs (e.g. STEM), research space, faculty offices, and student study space. Some IHEs were significantly above others in the quality and quantity of space. All IHEs have worked to improve their quality of space. However, there are significant limitations with old buildings that simply were not built to serve as educational facilities. One IHE started as a military facility, another from a convent, and some from old high schools. The physical structures of these buildings were designed with other needs in mind and are not well suited to the educational needs of students and faculty today. In one instance, faculty tutor and meet with students in open cubicles as they do not have private space or offices available.

Modern accreditation standards can create significant hurdles for campus spaces; some programs have very specific needs, but also have limited program growth for areas in high demand such as nursing and other health care professions. Many specialized programs like welding and advanced manufacturing have precise space and/or equipment/technology needs that are expensive to implement. For example, automotive programs, some art programs, chemistry, and other academic areas require specialized air filtration and ventilation systems. In one instance, an IHE had to move faculty offices out of a building where classes are held due to poor ventilation. Facility costs for expansion of in-demand programs often limit Missouri's ability to compete and provide a skilled workforce.

An outdated air handler still in use

The regional accreditation agency, the Higher Learning Commission (HLC), published the Resource Guide 2018 which includes the criteria for accreditation that all Missouri public higher education institutions must follow. Criteria specific to facilities include:

Criterion 3. Teaching and Learning: Quality, Resources, and Support - 3.D.4: The institution provides to students and instructors the infrastructure and resources necessary to support effective teaching and learning (technological infrastructure, scientific laboratories, libraries, performance spaces, clinical practice sites, museum collections, as appropriate to the institution's offerings).

Criterion 4. Teaching and Learning: Evaluation and Improvement: The institution demonstrates responsibility for the quality of its educational programs, learning environments, and support services, and it evaluates their effectiveness for student learning through processes designed to promote continuous improvement.

Criterion 5. Resources, Planning and Institutional Effectiveness: The institution's resources, structures, and processes are sufficient to fulfill its mission, improve the quality of its educational offerings, and respond to future challenges and opportunities. The institution plans for the future.

Core Components: 5.A. The institution's resource base supports its current educational programs and its plans for maintaining and strengthening their quality in the future. 5.A.1 The institution has the fiscal and human resources and physical and technological infrastructure sufficient to support its operations wherever and however programs are delivered.

Many academic programs have specialized accreditation facility requirements. Those requirements are significant and beyond the scope of this report, and are in addition to the Higher Learning Commission's accreditation requirements.

Space Utilization

Space utilization at IHEs is complicated due to the multiple types of IHE spaces and variations in the approach institutions use to calculate utilization. The typical types of spaces are:

- Classroom and classroom support
- Teaching laboratories and support space
- Open laboratories
- Research laboratories and service
- Academic and administrative offices and service
- Library space
- Assembly and exhibit space
- Physical plant space
- Other department space
- Auxiliary spaces such as student recreation centers, residence halls, athletic stadiums, etc.

There is a direct correlation between enrollment trends and the strength of the state and national economy. During hard economic times, community college enrollment often spikes. That was the case during the 2009 Facility Review. At that time, community colleges struggled to accommodate dramatically increased student enrollment. However, the 2018 Facility Review found many of those same IHEs with underutilized space. In the future, however, enrollment will likely spkie again. Therefore, eliminating underutilized space is not a general recommendation for community colleges. In addition, population trends included in the report will have an impact on enrollments and should help planning for space utilization.

Facility limitations negatively impact institutions' ability to meet workforce needs. For example, nearly every institution is at capacity in nursing and/or allied health programs. The Talent for Tomorrow initiative spearheaded by the Department of Economic Development and the MDHE will most likely require IHEs to re-evaluate academic areas for growth and the related facility needs and space utilization for those in-demand fields of study.

Enrollment data provides students enrolled: 1) exclusively in distance education classes; 2) both online and on-campus; and 3) not taking distance education classes (See page 13, chart 5). The five-year trend does not show a growth in online enrollment for Missouri's public institutions. Most students who take online courses still use campus facilities. Many are enrolled in both online and traditional classes. Furthermore, many institutions prefer to offer blended courses that include both online and in-person instruction, based on research indicating that many students are most likely to succeed if there is some face-to-face interaction with professors and peers. Finally, even classes that are offered entirely online often require space on campus to house the instructor, broadcast equipment, and testing facilities.

Maximizing space utilization at IHEs is a highly complex task. Each room must "fit" the particular needs of the class and accreditation requirements. Most institutions use software systems to maximize the use of space. However, specialized classes require specialized equipment that must be stationary, limiting the use of some classrooms.

Newer classrooms are designed for maximum flexibility, with furniture and room layout that make the space adaptable for most kinds of instruction and allows students to move around for group work and other collaborative exercises. Older classrooms are less flexible. Room size is another difficulty. Most campuses have very few large lecture halls, and those are constantly in use.

Almost every institution has buildings with more general problems, including lack of life safety equipment such as sprinklers, alarm panels, and appropriate routes of egress. Another common problem is that many campus buildings only meet minimal ADA requirements. Examples include buildings where students who use wheelchairs only have one, difficult-to-access way to enter and exit the building; are unable to access parts of essential facilities such as libraries and classrooms; and are forced to use awkward, make-do arrangements to open and close doors.

Finally, many schools have auditoriums that are used for large campus events and events open to the general public that offer students unique educational opportunities. At many institutions, these facilities are badly in need of renovation. Many have poor ADA accessibility and/or have stages that do not meet the needs of events that will attract public interest. Many are simply outdated and require better, larger seats.

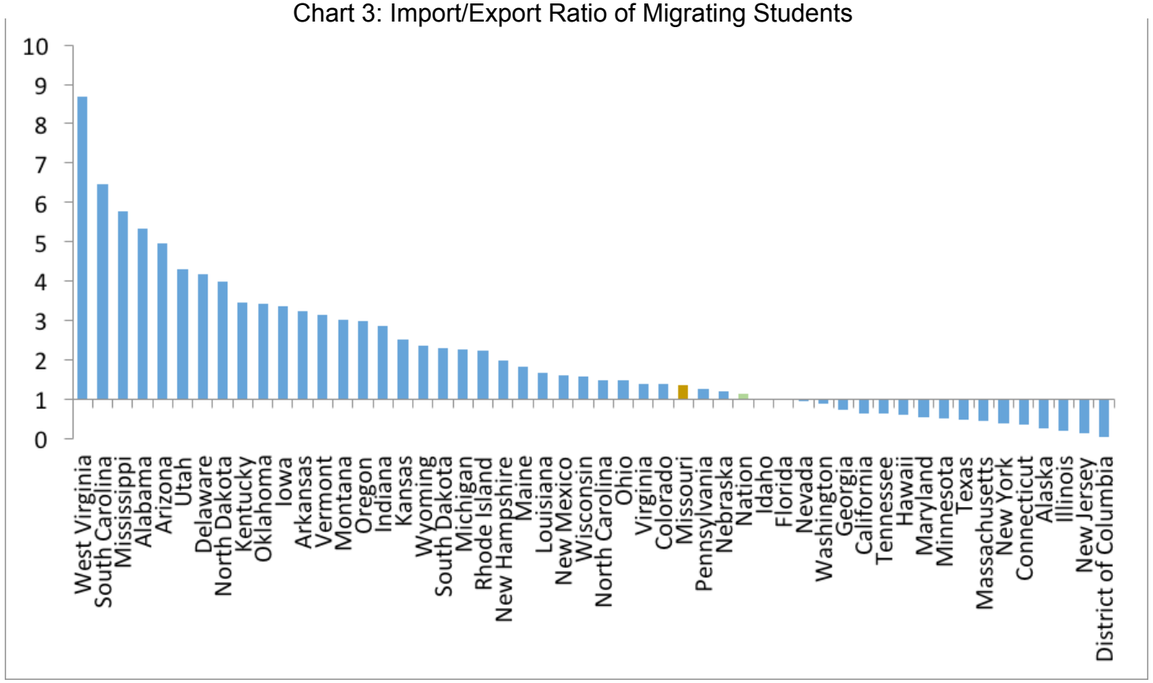
Trends & Issues Continued

Growing competition and out-of-state student migration affecting student choice of institution

High school graduates today have more choices on where to pursue a postsecondary education than ever before. Missouri is increasingly competing with other states to retain native students and attract out-of-state students. Missouri is on the verge of becoming a net exporter of students, with neighboring states like Arkansas waiving out-of-state tuition for Missouri students. Further, anticipated population trends outlined on page 12, Chart 4, suggest that future competition will be for a smaller pool of high school graduates. This will put additional pressure on Missouri institutions and undermine their ability to use a much-needed revenue-generating tool: increasing enrollment.

If facilities are not maintained or do not provide the student learning environments, including education technology, students are looking for, Missouri will continue to see students leave the state. This is especially true for high achieving students who are heavily recruited and have a wide variety of choices.

Chart 3: Import/Export Ratio of Migrating Students



Note: Import/Export ratio is the number of in-migrating students over the number of out-migrating students. A value of 1 means the in-migrants equals out-migrants; values above 1 show net in-migration while values between 0 and 1 show net out-migration. *Source: National Center for Education Statistics (NCES) and Integrated Postseconday Education Data System (IPEDS)*

Escalation of the need for improved physical safety and cybersecurity affecting students and staff

Both physical safety and cybersecurity affects all students and staff at IHEs in the state of Missouri. Physical safety included automated fire, entrance, egress, video surveillance, and emergency response systems. Older buildings' lack of suitable space to adequately house modern technology has led to the modification of many janitor's closets and other questionably secure locations for use as networking wiring junctions. The lack of proper electrical panels, network cabling, and electrical wiring has resulted in some institutions running extension cords and network lines across floors and hanging from ceilings, creating dangerous hazards.

One way IHEs are trying to deal with active shooter or other emergency situations is by requiring a lock down.

IHEs are open systems designed to allow free entrance and exit of students into campus facilities. This creates significant infrastructure security risks. Many institutions are working to improve the physical campus safety and security. However, more work on exterior lighting upgrades, systems for secure entrance and exit, and ongoing automated surveillance systems installation/upgrades are needed. Additional campus security measures are only beneficial if staff are available and trained to respond. Newer buildings have automatic locking features and some IHEs have purchased devices to ensure student safety during an active shooter situation, but physical safety remains a major concern for most institutions.

Cybersecurity threats are an additional consequence of not maintaining regular software and hardware replacement schedules. According to focus groups held with chief information officers, cybersecurity threats are the number one issue they are currently facing. This trend has been reported nationally by Educause (*https://www.educause.edu/research-and-publications/research/top-10-it-issues-technologies-and-trends/2018*). An analysis by Deloitte, an industry consulting firm, notes that colleges and universities are prime targets for cybersecurity threats because institutions maintain a high volume of personally identifiable information, and because current models for higher education promote an open-access, decentralized structure that makes them more susceptible to breaches. **Protecting student, staff, and family academic and financial information is a critical function that must be considered a priority.**

New demands and rising costs of education technology

Since the 2009 Facility Review, most colleges have invested significantly in technology infrastructure on their campuses. The main difficulty is that most campus buildings were built before any consideration of current needs for electrical and network wiring and wi-fi access points.

The average modern student has at least three devices connected to campus networks with some residence hall students also connecting smart TVs and video game consoles. Faculty have also expanded blended learning and web-based resources as a part of their coursework. This increased demand for effective broadband, including wireless access, has necessitated significant expansions of and strains on campus technology budgets.

In addition, broadband is critical for effective delivery of distance learning and a factor that has limited growth of those programs. This is especially true in rural Missouri communities that lack the necessary broadband. Additionally, dual credit classes that leverage synchronous video conferencing require expensive, dedicated bandwidth between colleges and the high schools they serve.

cont. >>

Colleges operate a variety of key systems. Ongoing maintenance and repair costs for hardware, software, and network create significant strain on college budgets. Campuses are currently responsible for using and maintaining nearly 20 different online information systems.

Ongoing software maintenance contracts are expensive, and institutions often have little negotiation power over software vendors since the investment and time commitment to convert to a new system can be difficult, if not impossible, to budget. As a result, institutions are seeing software and other continuous costs significantly exceed inflation. For example, the price of one Microsoft product used by some institutions will increase by 20% in a single year.

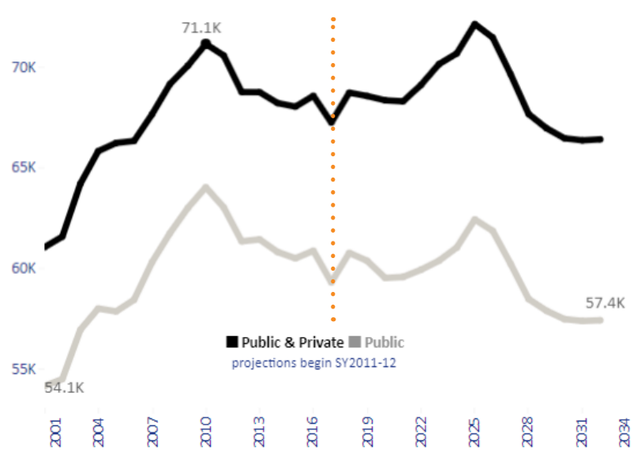
Several years ago, the General Assembly eliminated funding to MOREnet, which is the main internet and network service provider to Missouri's IHEs. This caused MOREnet to move exclusively to a fee-for-service model that ultimately resulted in cost-shifting as institutions were forced to increase their membership fees to continue to meet basic technology needs. As budgets tighten, software maintenance fees and hardware investments are often delayed. Other software contracts cannot be reduced or delayed. As a result, institutions are generally not able to upgrade internal electrical, wiring, and software as needed. Furthermore, most stone and brick structures on the campuses are not well-suited for wireless access points, causing some buildings to require boosters in almost every classroom to ensure signal reliability, significantly increasing the initial and ongoing costs of the network.

Other factors for consideration

Demographic factors affecting facility utilization and infrastructure needs

The number of students graduating from Missouri high schools is projected to climb for the next five years, then to decline sharply. This trend will affect facility needs.

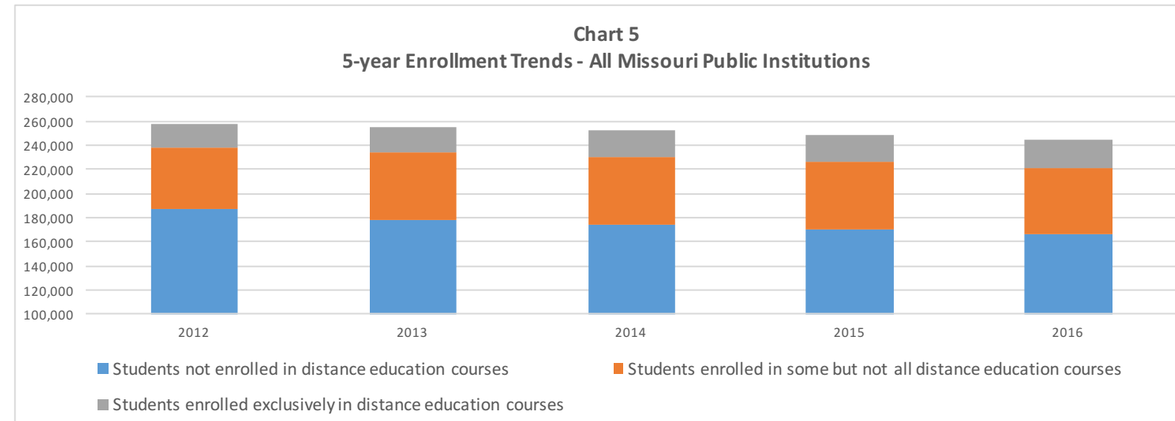
Chart 4: Projections of High School Graduates in Missouri



Source: Western Interstate Commission for Higher Education (WICHE), Knocking at the College Door

Enrollment trends and distance learning

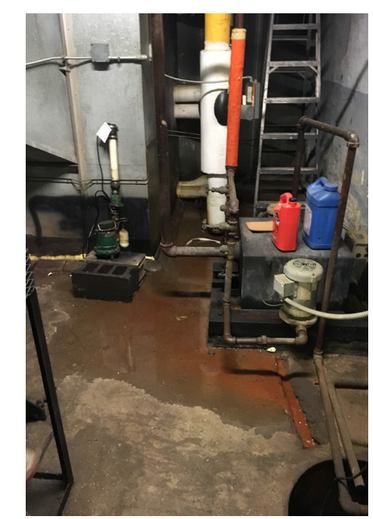
While overall enrollment at IHEs has declined slightly in the last five years; distance learning has become an integrated part of Missouri's educational practices. However, the growth in distance learning has been stable over this period. The idea that distance learning will reduce the need for campus facilities is not supported by enrollment data. Rather, blended learning approaches, in which students take a combination of online and in-class courses, are increasingly common. Ongoing needs for information technology infrastructure and the integration of technology into course design is a critical part of the higher education curriculum.



Source: Integrated Postseconday Education Data System (IPEDS)

Water issues, leaky pipes, and condensation affecting ceilings

An emergency station created in a hallway instead of a classroom



Water problems caused by old pipes

CBHE Budgetary Recommendations

The following provides additional information regarding the CBHE budgetary recommendations in this report. MDHE staff are available to discuss recommendations and provide information and detailed rationale on request.

Establish statutory authority and appropriate funds to be allocated by the CBHE based on emergency capital improvement needs.

Currently, public colleges and universities cannot access the emergency funds available to other state buildings through the Office of Administration. Given those institutions' significant deferred maintenance needs, an increasing number of emergency repairs are likely. The establishment of a statutory fund for appropriations similar to the Office of Administration's program for other state buildings will give the CBHE the ability to address these needs as they arise.

Increase appropriations for all institutions to address major deferred maintenance.

Deferred maintenance needs for education and general buildings on Missouri's public college and university campuses total an estimated $1.5 billion. Public institutions must regularly address those needs with support from dedicated state funding for maintenance and repair projects.

Create a new appropriation specifically for CBHE-designated critical capital improvements.

The quality of facilities at Missouri's public colleges and universities varies widely. The Coordinating Board should develop an approach to identifying the most critical facility needs and recommend funding to address those needs.

Link new capital budget recommendations to workforce needs as special programs often require specialized facilities and equipment for accreditation.

The Coordinating Board should recommend funding to establish or expand programs that address workforce needs. Funding may include renovation of existing facilities, new construction, or the purchase of equipment needed to prepare students for high-demand occupations.

Create a more formal justification process for all new state-funded construction to be included with state funding requests that require CBHE endorsement.

Public colleges and universities should be required to provide detailed justification before the Coordinating Board considers recommending funding for any new construction project. That justification should include population and enrollment trends, as well as quantifiable cost-benefit justifications.

Allocate a special appropriation to the CBHE to prioritize the demolition of buildings.

Buildings on public college and university campuses around the state have significant enough deferred maintenance needs that demolishing them is more cost-effective than repairing or renovating them. Seventy such buildings have been identified, and that number will likely increase as preventative maintenance is further deferred. The Coordinating Board should consider prioritizing funding for the removal of these buildings.

2018 HIGHER EDUCATION FACILITY SUMMARY

4-YEAR INSTITUTIONS SUMMARY

Education & general (E&G) buildings	1,433
E&G building SQ FT.	28,630,561
Auxiliary (AUX) buildings	670
AUX building SQ. FT.	22,181,695
Number of buildings	2,103
Buildings leased	141
Leased Building SQ FT.	631,101
Student housing/bed space	30,628
Percent of bed space utilization	86%
Total Maintainable Campus SQ FT.	50,812,256
Total size of all campuses (Acres)	22,416
Physical Asset Reinvestment (M&R) for E&G Purposes	
Deferred maintenance for E&G buildings	$1,377,628,664

Total Institutional Facility Debt/Bonds	
E&G buildings	$388,459,456
AUX buildings	$1,839,883,890
Estimated Demolition Need	$15,307,135
Number of buildings needing demolished	61
E&G Facilities FY18 Planned Budget	
Admin	$5,063,191
Grounds	$6,009,588
Maintenance	$39,056,976
Custodial	$20,902,740
Utilities	$71,227,022
Other	$4,833,016
Total	$147,092,533

2-YEAR INSTITUTIONS SUMMARY

Education & general (E&G) buildings	256
E&G building SQ FT.	8,111,889
Auxiliary (AUX) buildings	60
AUX Building SQ. FT.	788,559
Number of buildings	312
Buildings leased	6
Leased Building SQ FT.	83,715
Student housing/bed space	1,142
Percent of bed space utilization	94%
Total Maintainable Campus SQ FT.	8,900,448
Total size of all campuses (Acres)	2,995
Physical Asset Reinvestment (M&R) for E&G Purposes	
Deferred maintenance for E&G buildings	$118,618,035

Total Institutional Facility Debt/Bonds	
E&G buildings	$115,749,299
AUX buildings	$15,512,448
Available bonding capacity	$149,561,497
E&G Facilities FY18 Planned Budget	
Admin	$14,792,639
Grounds	$2,200,123
Maintenance	$11,962,699
Custodial	$8,626,877
Utilities	$16,442,686
Other	$2,650,472
Total	$56,675,496
Number of buildings needing demolished	9

STATE TECHNICAL COLLEGE OF MISSOURI SUMMARY

Education & general (E&G) buildings	20
E&G building SQ. FT.	370,954
Auxiliary (AUX) buildings	14
AUX building SQ. FT.	111,545
Buildings leased from	2
Leased from building SQ. FT.	16,288
Student housing/bed space	144 Beds
Percent of bed space utilization	100%
Maintainable campus SQ. FT.	482,499
Total size of campus (Acres)	349
Physical Asset Reinvestment (M&R) for E&G Purposes	
Deferred maintenance for E&G buildings	$2,212,108

Total Institutional Facility Debt/Bonds	
E&G buildings	$4,910,000
AUX buildings	$6,505,000
Available bonding capacity	$25,000,000
E&G Facilities FY18 Planned Budget	
Admin	$0
Grounds	$25,000
Maintenance	NA
Custodial	$29,000
Utilities	$511,427
Other	$102,000
Total	$667,427
Number of buildings needing demolished	0

TOTAL NUMBER OF BUILDINGS

	4-Year	2-Year	State Tech	Total
E&G	1,433	256	20	1,709
AUX	670	60	14	744
Total	2,103	316	34	2,453

TOTAL SQUARE FOOTAGE

	4-Year	2-Year	State Tech	Total
E&G	28,630,561	8,111,889	370,954	37,113,404
AUX	22,181,695	788,559	111,545	23,081,799
Total	50,812,256	8,900,448	482,499	60,195,203

TOTAL ACREAGE

	4-Year	2-Year	State Tech	Total
Campus size	22,416	2,995	349	25,760