

# Standard Eight

## Physical Resources

### INTRODUCTION



As a university with urban characteristics in Montana's largest city, MSU Billings deals with diverse and sometimes complex facilities needs. All the facilities at MSU Billings — from the information commons at the library to maintenance of student housing to the newest nursing lab at the College of Technology — have positive effects on the student learning experience at the university.

The University provides an accessible, community-centered learning environment, comprised of multiple campuses — the East Campus (85 acres), situated north of Downtown Billings, the recently expanded West Campus at the College of Technology (33.5 acres), about seven miles west of the East Campus, and the MSU Billings Downtown Campus. The East Campus is located just north of the medical and business corridor of Billings and is part of an active and civically aware neighborhood. The campus enjoys use by the community for a variety of events and functions beyond the traditional academic use. The campus buildings and grounds are well-maintained, clean and generally adequate.

The East Campus is the home for the College of Arts & Sciences, the College of Business, the College of Education and the College of Allied Health Professions. Additionally, the campus hosts student life/housing, the majority of athletic facilities and several tenants such as MSU Bozeman's Nursing Program, UM Missoula's Master of Business Administration Program, MSU Northern's Veterans Upward Bound, UM Butte's Bureau of Geology, the Urban Institute, Leadership Montana, and the Montana Business Incubator. The University has title to many of the surrounding properties which provide a buffer zone with the residential neighborhoods as well as expansion opportunities as the need arises. Only within the last decade has there been resurgence in investing in the East Campus' infrastructure.

The West Campus includes the building that prior to the 1994 merger of the Montana University System, was previously the Billings Vocational-Technical Center. The West Campus is home to the majority of two-year programs at the university as well as a new, all-weather state-of-the-art soccer facility. The older building on the West Campus includes a 115,000 square-foot building on 20 acres. With the recent emphasis on two-year education in Montana, the university was able to expand the campus with an additional 13.5 acres and construct the new 50,000 square-foot Health Sciences building. Funding was secured for the building through the 2005 and 2007 Montana Legislatures and was officially dedicated in the spring of 2008.

The Downtown Campus is home for the College of Professional Studies and Lifelong Learning, a large Conference Center, ITV Services and many support entities. They all reside within three recently renovated buildings in the heart of Downtown Billings.



**McMullen Hall**

The strategic initiatives and goals of Facilities Services align with the University Strategic Initiatives and support the University vision. In spite of almost \$26M garnered through the state's Long Range Building Program since 1997, the conventional means of either acquiring or renewing infrastructure has not been able to keep pace with the demands of today's students and community.

Hence, alternative means continue to be explored to meet fast-paced, emerging needs. Examples include:

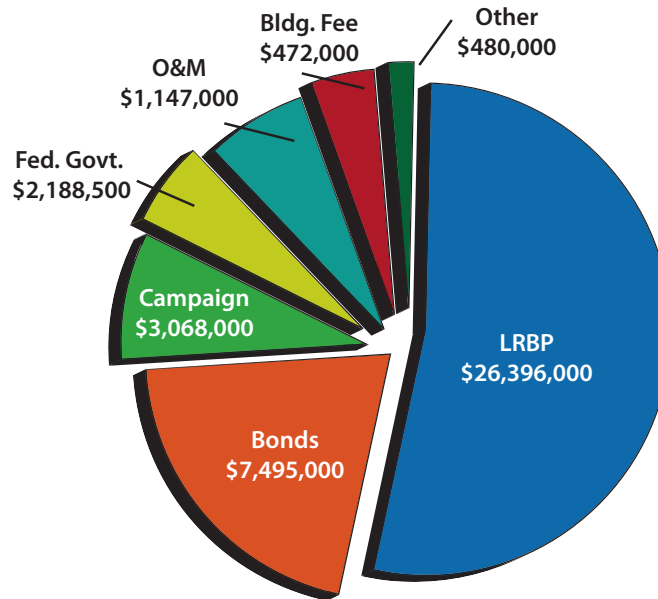
- The development of the 30,000-square-foot Downtown campus, funded through a combination of federal and local grants, as well as reimbursable activities;
- Partnership with the MSU Billings Foundation in the *People, Pride and Promise: The Campaign for Excellence at MSU Billings* campaign, which grossed more than \$30 million and provided funding to acquire much needed facilities such as McDonald Hall (the College of Business) and the William H. Lowe Child Care Center.
- The Foundation partnership was also key in building community relationships and gaining \$675,000 in contributions that led to the purchase of the land for the new building.
- \$300,000 raised within three months of the start of the community-wide soccer field improvement campaign and used to build a new all-weather soccer field;
- Unique and creative use of university rental property to support the MSU Billings Foundation, Alumni House, Childcare Center, KEMC/Yellowstone Public Radio and offices for Facilities Services.

## **STANDARD 8.A.1**

### **INSTRUCTIONAL AND SUPPORT FACILITIES**

CHART 8.1

## MSU BILLINGS FACILITIES REVENUE SOURCES



- Continued development of a \$14.8 million project for a Joint Community Library on the West Campus in collaboration with the City of Billings.

The ability to leverage resources is probably the greatest asset for assuring facilities remain sufficient to support the institutional mission and goals.

With the support of the community whose contributions purchased the requisite real estate, the newest addition to the MSU Billings academic facility inventory is the Health Sciences Building at the West Campus. The facility was designed with the needs of today's students who are training for careers in the health care, emergency medical or fire science workplace. The new building features:

- 108 student classroom computers
- 2 conference/seminar rooms
- 4 computer labs
- 6 general purpose classrooms
- 4 dedicated program classrooms
- An 11-bed nursing unit
- 1 fire science lab
- 1 paramedic computerized patient simulator lab
- 1 functional X-ray radiology lab
- 1 medical assistant lab
- 1 great hall with seating capacity of 277 and a hydraulic wall
- 20 faculty offices

Evidence: 1.1 Mission Document

Traditionally, maintenance funding levels have been sufficient to cover emergent repairs. The last two Montana Long Range Building Program (LRBP) cycles have placed additional emphasis on deferred maintenance, as well as classroom upgrades. Resources have addressed the most challenged spaces. Dated facilities become underused as instructors migrate to more comfortable classrooms outfitted with the latest technology.



**Before and after photos of the Science Auditorium**

Space utilization continues to improve as classroom needs are addressed and the latest technology is employed.

Evidence: 8.7 Space utilization studies

## STANDARD 8.A.2

### FACILITIES SERVICES ACCOMMODATIONS

In light of the new accreditation criteria, it was deemed appropriate to investigate the quality of our classrooms/work spaces. The Facilities Services Biennial Customer Service Survey asked, "How would you rate the quality of your classroom/work space?" Although there were no previous benchmarks with which to judge trends, the results were the lowest of all our performance indicators and warranted additional investigation. A subsequent survey related "quality space" to environmental issues, furnishings, equipment, and or offices. It now appears that an individual's office space has a major influence on determining the adequacy of instructional facilities (Evidence: Exhibit 2, 8.8 Facility Services Biennial Customer Service Survey).

Evidence: 8.8 Facility Services Biennial Customer Service Survey

## STANDARD 8.A.3

### FACILITY USER SURVEYS

Biennially, Facilities Services surveys the University community to insure expectations are met. Overall, performance is very good, with positive trends in all areas but one. Custodial Services demonstrated negative trend lines for two surveys, conducted over a three-year period. The root cause may lie in not having replaced the Custodial Supervisor following retirement in May 2004. In response to survey results, a supervisor was hired spring 2007. The Facilities Services Director and the Custodial Supervisor have developed a custodial

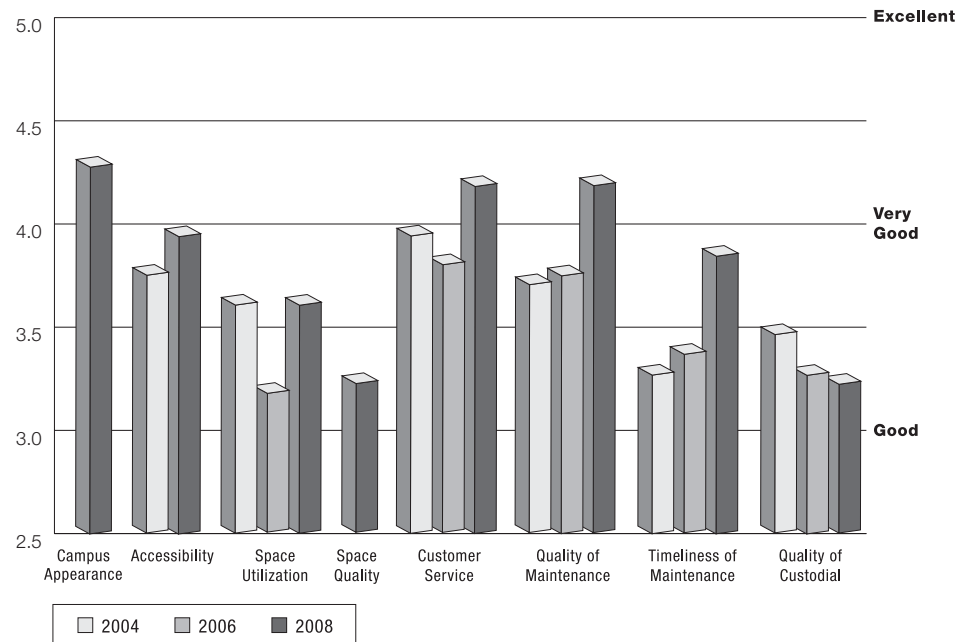
## STANDARD 8.A.4

### FACILITIES SERVICES SURVEY RESULTS



CHART 8.2

## Facilities Services Survey Results



services plan based on Association of Higher Education Facilities Officers (APPA) guidelines. Work plans for each building were developed, standards established and staffing levels determined. Preliminary indications are that the “quality of custodial” is moving in a favorable direction.

Constituency expectations, however, reach beyond faculty, staff, students and administrators. They also involve community and state leaders. The University continues to work hard to meet those expectations now and in the future.

As an example, the State of Montana — with leadership from the Governor and support from the Board of Regents — has adopted an energy conservation program to reduce consumption in state facilities by 20% by the year 2010. Energy conservation remains a foremost concern for facilities managers at all universities, with the cost of utilities a major component factor in every budget. The costs of the MSU Billings utilities have almost doubled since FY 2000, based on increases in natural gas and electricity as well as the construction of additional 180,000 sf of classrooms and labs. However, energy conservation measures implemented by the University — from construction techniques to use of energy-saving technologies — have managed to continually reduce the overall costs on a per square foot basis.

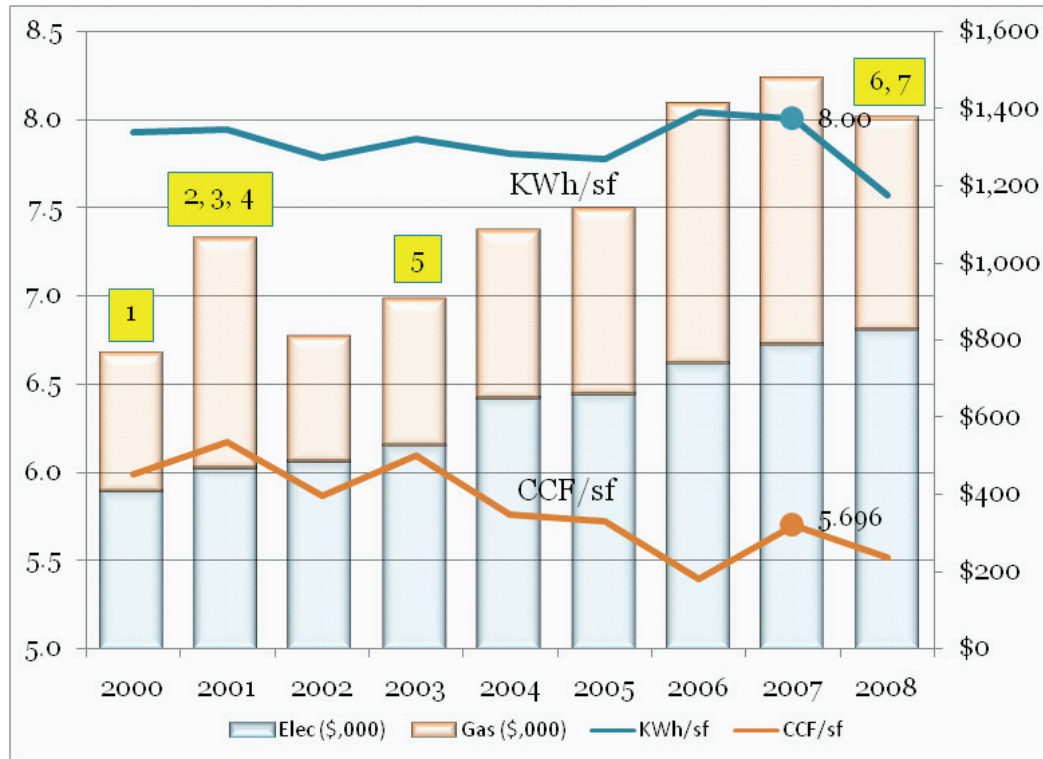
It should be noted that MSU Billings is a recognized leader in the development and applied research of alternative fuel sources, including biodiesel and fuel cell technologies.

Insert Energy Conservation Chart and reference Energy Conservation Measures as an Exhibit

Evidence: 8.10 Custodial Services Guidelines

CHART 8.3

## ENERGY CONSERVATION MEASURES AT MSU BILLINGS



1. **Liberal Arts/Library** - Conservation measures for the Liberal Arts and Library Building replaced the existing light fixtures in the classrooms and office areas with higher efficiency fluorescent fixtures. In the Special Education Building, emphasis was placed on conversion of the dual duct constant volume HVAC system to a VAV system, replacement of the existing chiller, and photocell controls for exterior lighting. (Savings \$364K)

2. **College of Technology** - The following energy conservation measures were installed in the building; 1) daylighting controls use photocells to minimize the use of lights during the day in areas where natural lighting meets the lighting requirements, 2) programmable thermostats allow for night setback, 3) variable speed fan motor for the return fan, 4) direct digital HVAC control system, 5) gas-fired radiant heat for shop areas, 6) domestic hot water system upgrade. (Savings \$130K)

3. **Special Education Building** - Heat recovery systems installed on two air handling units and variable speed drives were placed on pumps in the heating and cooling water loops, and the cooling tower. (Savings \$126K)

4. **PE Building** - New temperature controls were installed, allowing for night setback and closing of the outside air damper to the heating and ventilating units when the building is unoccupied. New temperature controls that were added to the boilers allow sequencing to minimize the boiler operation. (Savings \$30K)

5. **Propane Back-up System** - The installation of a 30K gal. propane storage tank and associated controls allowed MSU to switch from a firm rate to an interruptible rate for natural gas. This project serves the entire Main campus. (Savings \$300K)

6. **Heating System Improvements** - Boiler Economizers were installed in the PE building as well as Rimrock and Petro Hall. (Savings \$39K)

7. **McMullen Hall** - Converts the constant volume multi-zone system to a variable air volume system. Replaces window A/C units with a central air-cooled chiller and installs high efficiency T5 florescent lighting systems. (Anticipated Savings \$350K)

**STANDARD 8.A.5****FACILITIES INSPECTIONS**

Biennially, a team of engineers and architects performs a site inspection on campus to validate the Facilities Condition Index (FCI). The FCI team inspects each and every building to assess safety, accessibility, energy efficiency, etc. Deficiencies are distributed by category and priority. The number-one priority identified is Health and Life Safety, with \$10,937 in repairs identified. MSU Billings continues to have one of the lowest percentages of deferred maintenance at 8.7% (\$13.1M) within the Montana State University (MSU) side of the Montana University System (MUS).

An additional \$3.155M of deferred maintenance has been identified within the Auxiliary facilities such as student life and housing.

**CHART 8.4****DEFERRED MAINTENANCE**

Measure	MSU BZN		MSU BIL/COT		MSU N		MSU GTF COT	
	Value	% Share	Value	% Share	Value	% Share	Value	% Share
GSF	1,931,739	51.0%	843,493	22.3%	320,924	8.5%	199,665	5.3%
FCI GSF	1,746,088	56.4%	843,493	27.2%	309,092	10.0%	197,665	6.4%
CRV FCI Cat 1 & 2	\$327,817,445	54.3%	\$150,538,484	24.9%	\$57,864,994	9.6%	\$25,835,691	4.3%
FCI	\$31,421,215	56.4%	\$13,148,103	23.6%	\$9,121,130	16.4%	\$2,044,411	3.7%
FCI Def Ratio (1&2)	9.6%		8.7%		15.8%		7.9%	
Annual FTE FY06	10,642	61.5%	4,220	24.4%	1,255	7.3%	1,186	6.9%
GSF/Student FTE	182		200		256		168	

**STANDARD 8.A.6****ACCESSIBILITY  
INSPECTIONS**

A site-assessment team visits off-University locations to assure that access, connectivity and environmental conditions are appropriate. Off-university syllabi specifically indicate that Facilities Services be notified for additional needs and/or accommodations.

The Office of Information Technology provides total service, support, purchasing and replacement for all state-funded computing equipment and software. Grants and non-state funded entities provide funding for their equipment while IT provides their support and maintenance. Student computer labs, classroom equipment and faculty computing needs, as well as the Library computers, are all supported centrally by the Office of Information Technology, headed by the Chief Information Officer (CIO). All technology design and purchases are coordinated with the CIO.

Since FY 2000, computer facilities have been upgraded across the University:

- The Education Building was the first building to have “smart classrooms.” This upgrade was available for use and review before the spring 2002 NCATE accreditation review.
- The Education Building hosts a student computer facility and a suite of rooms equipped for technology training and student use in developing course assignments.
- Smart classrooms have been installed in 100+ classrooms across the University, including the Liberal Arts Building, McDonald Hall, PE, Student Union Building, West Campus, Science, Academic Support Center, Cisel, and all Downtown Campus classrooms.
- The Library hosts Information Commons, a computer facility for student use created as a unique study/computing environment.
- Building and remodeling on the West Campus includes upgrades in instructional technology hardware and software to enhance COT programs.
- Approximately 300-400 faculty/staff/student computers are replaced annually.
- Network equipment and servers are replaced on a four-to-six-year cycle.
- 100+ smart classrooms are replaced on a four-to-six-year cycle.

Equipment in the Science Department will be a focus for upgrade in the future. Laboratory equipment is provided for the biology, chemistry and physics labs through the Science Technical Services budget, faculty research grants, the College of Arts & Sciences and Administration Equipment Funds. Partnerships with the MSU Billings Foundation and the business community also help meet equipment needs with internal University funds need to be supplemented.

## STANDARD 8.B.1

### EQUIPMENT AND MATERIALS

## STANDARD 8.B.2

### FIXED ASSETS

The MSU Billings Fixed Assets Guide is available on the web at <http://www.msubillings.edu/geninfo/assetguide.htm>. Responsibility for fixed-asset property management is held by the Financial Services Office. All fixed assets are tagged with a pre-numbered identification (P number) tag for inventory, warranty, identification and stewardship purposes. An inventory of capital assets is conducted every other year. Non-capital assets are also inventoried on a periodic basis. Fixed-asset records are maintained in the Financial Services Office.

All computing equipment is purchased by or receives approval from the CIO. Received equipment is entered into the state inventory control system managed by the Office of Financial Services. IT maintains a centralized database tracking key attributes of all equipment.



The replacement cycles for equipment are as follows:

- Desktop computers — four years
- Notebooks — three to four years
- Servers — four years
- Switches — six years
- Core networking equipment — eight years
- Software — current versions installed annually
- Fiber and network cabling — 20 years
- Balances — serviced annually
- Microscopes — serviced biennially
- Fume-hoods serviced quarterly under an annual maintenance contract
- Capital equipment — inventoried annually
- Obsolete equipment — sold at the annual garage sale

Evidence: 8.9 Fixed Asset Guide

### STANDARD 8.B.3

#### HAZARDOUS MATERIALS

MSU Billings employs a Hazardous Material/Waste Coordinator, who is the single agent for any hazardous material procurement and disposal. Annually, the coordinator attends a state-sponsored refresher course to maintain currency on regulatory changes and provides annual training for University personnel as appropriate.

Current materials safety data sheets (MSDS) are located in all areas where hazardous materials are stored or used. MSU Billings is classified as a small-quantity generator by the Montana Department of Environmental Quality with fewer than 1,000 kilograms of hazardous waste generated per month. The coordinator monitors storage areas and quantities monthly.

Additionally, the Science Department is responsible for radiation and laser safety while the Health Sciences Department provides for X-Ray protection and safety.



CHART 8.5

## MSU BILLINGS HAZARDOUS WASTE MANAGEMENT

LOCATION	WASTE STREAM	DRUM SIZE (GAL)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
McM B -3 PRINT SHOP	Blankrola Solvent & Inks	5	0	4.3	4.4	2.8	0	0.0	0.0	8.7	0	0	0	0.0
McM B -3 PRINT SHOP	Photo Lab Chemicals**	30	0	0	0	0	0	0	0	57.6	0	0	0	0.0
McM B -3 PRINT SHOP	Ink & Solvent Rags	55	0	0	0	0	2.5	5	2.5	3	0.5	0.5	3.5	5.0
SCI 143 (Khaleel's Res Lab)	Organic Consolidations	30	0	0	0	0	0	0	0	4.3	4.4	26.7	0	0.0
SCI 145 (Gen. Biology Lab)	Inorganic Consolidations	15	0	6.7	0	0	0	0	0	0	24.4	91	0	4.5
SCI 221 (Quant. Lab)	Inorganic Consolidations	30	0	23.7	19.9	5	3.2	0	0.0	0	44.8	8.7	23.9	9.6
SCI 249 (Organic Lab)	Organic Consolidations	30	26	0	17.3	34.6	0	13	0	17.3	45.6	138.3	4.3	8.7
SCI 253 (Gen. Chem. Lab)	Inorganic Consolidations	30	0	71	39.8	67.3	15	42.3	24.9	0	59.8	0	41.5	13.9
SCI 238 (Waste Reduction)	Mercury	5	0	0	0	2.0	0	0	0	2	0	0.0	0	0
	<b>TOTALS GENERATED PER MONTH</b>		<b>26.0</b>	<b>105.7</b>	<b>81.4</b>	<b>111.7</b>	<b>20.7</b>	<b>60.3</b>	<b>27.4</b>	<b>92.9</b>	<b>179.5</b>	<b>265.2</b>	<b>73.2</b>	<b>41.7</b>

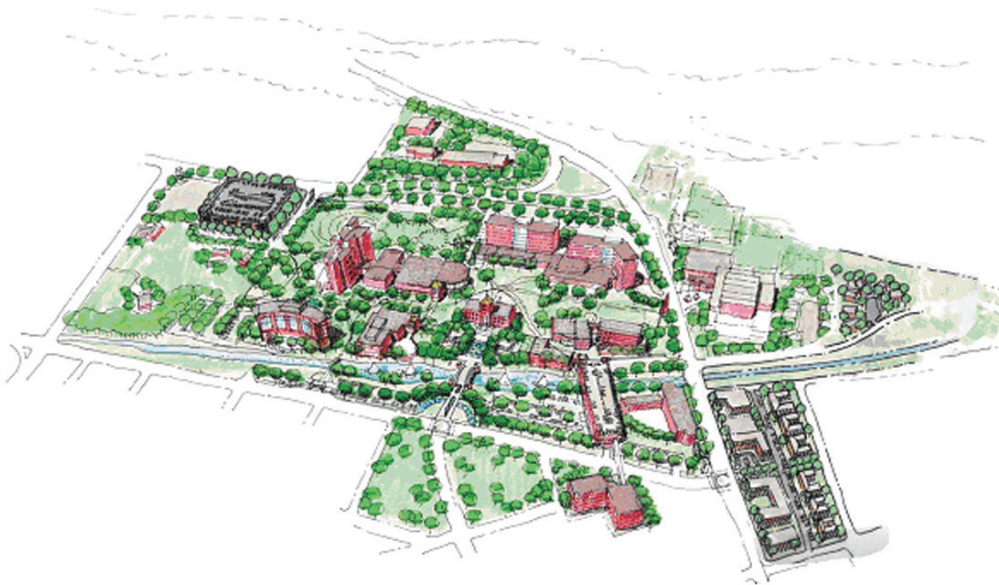
The Main Campus Master Plan was published in December of 2000. Associated studies were published in September 2002 and more recently in December 2006. These two sets of revisions addressed needs of the West Campus. The next scheduled update for the entire Campus is 2008.

Evidence: 8.4 University Master Plan (<http://www.msubillings.edu/master>); Associated Studies (<http://www.msubillings.edu/facilityservices/COT%20study.pdf>); Second Revision (<mms://192.156.215.184/COT1>)

**STANDARD 8.C.1***PHYSICAL RESOURCES  
PLANNING*

Along with the acquisition and major renovations of facilities, the state provides an avenue through its budgeting process whereby “new space” is identified and the associated capital and operating funds are allocated within subsequent budgets. Evidence 8.5 illustrates MSU Billings’ most recent major development project funded through the State’s Long-Range Building Program, which insures

**STANDARD 8.C.2***PLANNING FOR NEW  
SPACE*



appropriate support in subsequent biennial operations and maintenance resources. Additionally, the FY2010-2011 Repair and Restoration accounts were established to address the needs for major pieces of equipment. In the past, reliance has been on specific Building Fees or LRBP Deferred Maintenance funds that may not be available when needed.

Evidence: 8.5 Long Range Building Program; Evidence: 8.4 University Master Plan [www.msubillings.edu/facilityservices/COT%20study.pdf](http://www.msubillings.edu/facilityservices/COT%20study.pdf).

### STANDARD 8.C.3

#### ACCESSIBILITY ASSESSMENT

Comprehensive Accessibility Studies were completed in 2000 for Academic Affairs and in 2002 for Auxiliaries. The Office of Disability Support Services advocates appropriate measures at all levels. Renovation of areas/buildings incorporates identified deficiencies into the scope of work.

The chart on the following page summarizes known deficiencies across the University and highlights next year's projects.

In addition, the University completed drafting a Pre-Disaster Mitigation Plan in accordance with FEMA guidelines to address security. The plan prioritizes various security issues confronting the University and provides prerequisite documentation for future grant funding. The Emergency Communications Committee coordinates University response to emergent needs in view of recent national campus tragedies.

Evidence: 8.4 University Master Plan [http://www.msubillings.edu/facilityservices/MSU\\_Billings%20Draft%20PDM%20Plan.pdf](http://www.msubillings.edu/facilityservices/MSU_Billings%20Draft%20PDM%20Plan.pdf)

CHART 8.6

## MSU BILLINGS FACILITIES DEFICIENCIES - 2008

Deficiency	Auxiliaries	Academic
<b>Site Accessible Route</b>		<b>\$ 24,400</b>
Parking	\$ 20,721	\$ 61,515
Built Up and Curb Cut Ramps	\$ 1,750	\$ 24,740
Walks and Sidewalks	\$ 110,185	\$ 121,560
Stairways (Exterior)	\$ 11,850	\$ 125,465
Entrances and Doors	\$ 447,250	\$ 329,346
Water Fountains	\$ 2,700	\$ 23,340
Floors	\$ 44,450	\$ 32,898
Reach Ranges to Objects	\$ 56,000	\$ 52,900
<b>Corridors and Aisles</b>		<b>\$ 1,075</b>
Stairways (Interior)	\$ 147,700	\$ 255,180
Ramps (Interior)	\$ 16,576	\$ 15,680
<b>Ramps and Handrails</b>		<b>\$ 24,840</b>
Telephones	\$ 10,900	\$ 16,750
Elevators	\$ 155,795	\$ 160,185
Sanitary Facilities	\$ 990,650	\$ 273,635
<b>Storage</b>	<b>\$ 2,000</b>	
Seating, Tables and Work Surfaces	\$ 300	\$ 1,200
Areas of Rescue Assistance	\$ 2,200	\$ 72,560
Signage	\$ 20,600	\$ 22,050
Special Use Occupancy	\$ 244,000	
Visual Alarms	\$ 334,000	\$ 238,878
<b>Restaurants and Cafeterias</b>	<b>\$ 400</b>	
<b>Medical Care Facilities</b>	<b>\$ 4,800</b>	
Business and Mercantile	\$ 600	\$ 4,200
<b>Libraries</b>		<b>\$ 6,800</b>
Assembly Areas	\$ 1,900	\$ 53,800
<b>GRAND TOTAL</b>	<b>\$ 2,627,327</b>	<b>\$ 1,942,997</b>
<b>ADA Project 2008</b>	<b>\$ 7,200</b>	<b>\$ 57,115</b>



**STANDARD 8.C.4****PLANNING  
INVOLVEMENT**

Planning for physical facilities is a broad topic. Master Plans involve faculty, staff, students, advisory boards, neighbors and governing bodies in the development of the plans. The Master Plans lay out the framework for the development of the University's Long-Range Building Program (LRBP).

Each Institution within Montana submits its projected priorities to the OCHE, which then establishes a consolidated list for submission to the BOR and the Governor for approval. Legislative approval of the Governor's budget initiates concept and goal development for project design involving faculty, staff, students and advisory boards. User involvement from concept through contract documents and final inspections insures a facility that meets or exceeds expectations.

The lack of resources within Auxiliaries dictates the development of a long term Master Plan which prescribes alternative funding streams to address their infrastructure needs. A marketing Master Plan is to be developed in 2008-2009 that will be instrumental in reshaping that infrastructure.

Evidence: 8.4 University Master Plans for both East Campus and West Campus

**STANDARD EIGHT****SUMMARY AND  
ANALYSIS****Strengths**

- MSU Billings maintains excellent, easily accessible facilities, all of which contribute to a strong student-centered learning environment and benefit the University's mission characterized by excellent teaching and service to the community. East, West, and Downtown campuses have well-groomed exteriors and clean interiors, and provide safe learning environments. Facility improvements and additions are also well supported by the community, which understands the value of maintaining the University at high standards.
- In recent years, the University has made major commitments to the following:
  - Computer equipment for faculty instruction and for student learning
  - A Downtown Campus that serves as a connection between the business community and the University
  - Completion of a 50,000 square-foot Health Sciences Building on the West Campus
  - Evolution of the West Campus programs and facilities from a College of Technology to a Community College serving the Billings area and preparing students for the rigor of East Campus baccalaureate and graduate programs
  - Initiation of a sixth College — the College of Allied Health Professions — that links the medical community with the University
  - Through biennial customer surveys regarding facilities and services and through biennial site assessments, Facility Services assures the physical health and safety of the University environment for all constituencies.

### Challenges

- The University provides outstanding facilities, even though some buildings on campus remain in need of attention. The East Campus Science Building in particular has been on the BOR Long-Range Building Plan (LRBP) for some time.
- The Infrastructure Network for Biomedical Research Excellence (INBRE) grant has helped with improvement of infrastructure and research facilities in the East Campus Science Building. However, teaching laboratories are in need of significant upgrades.
- Similarly, offices and some classrooms in the Liberal Arts Building are not conducive to optimal teaching and learning.
- Developing a viable marketing plan for Student Life and Housing will be paramount in the successful reshaping of the infrastructure needs to support our students.
- The University recognizes these limitations, and has invested in the remodeling of several classrooms including the auditorium in the Science Building. A new Science and Technology Center proposed as the University's No. 1 priority for the LRBP was approved by the BOR at \$12 million. The Center is the No. 5 priority within the MUS.
- Meeting the expectations for the Governor's 20/10 energy conservation plan will require some challenges because the University has already made progress on those areas as it has made facilities and equipment upgrades.

