

## **S**ANDARD 8 - PHYSICAL RESOURCES



## **STANDARD 8.A - INSTRUCTIONAL AND SUPPORT FACILITIES**

**Sufficient physical resources, particularly instructional facilities, are designed, maintained, and managed (at both on- and off-campus sites) to achieve the institution's mission and goals.**

### **8.A.1 Instructional facilities are sufficient to achieve the institution's mission and goals.**

Montana Tech's North and South campuses are home to twelve academic buildings which contain 47 lecture classrooms, 37 computer labs, and 30 other specialty labs. The South Campus facility contains 10 lecture classrooms, 8 of the computer labs, and 9 of the specialty labs. These facilities are sufficient to achieve the mission of this institution.

As enrollment continues to grow, the need for larger classrooms continues to grow at Montana Tech's North Campus. Of the 37 lecture classrooms available on the North Campus, 10 can seat 60 or more students (of these, one is the auditorium). Montana Tech's smaller classrooms are ideal for most of our undergraduate level courses. Each year, more sections are added in order to make the cohort groups smaller in an effort to accommodate smaller classrooms. The recent addition of the Natural Resources Building to the campus inventory has assisted with this shortage, but Tech definitely needs more classrooms that can hold 60 or more students on the North Campus.

Moreover, 27 lecture classrooms have high-tech multi-media (HTMM) equipment (such as a computer, data projector, internet connection, etc.) for classroom instruction. Electronic teaching aids are more and more common in today's teaching strategies.

Montana Tech boasts 30 laboratories for hands-on demonstrations. These labs range from drafting and welding labs, to x-ray and robotics labs. The fact that we have so many specialty labs speaks well for Montana Tech's hands-on education, especially in engineering.

The planned renovation of the Health Sciences Building (formerly the Petroleum Building) will create five new classrooms. Tech's academic leadership has looked closely at the congestion of courses offered in the 9 a.m. to 12 (noon) timeslots and is committed to work with faculty to spread the load across a greater portion of the day, thus allowing for more efficient use of instructional facilities.

### **8.A.2 Facilities assigned to an instructional function are adequate for the effective operation of the function.**

The vast majority of Montana Tech's instructional space is adequate. However, some facilities are arguably old and can improve. Some near-term improvements are scheduled to address the effectiveness of the facilities. These include the HVAC and lighting upgrade of the Mining Geology Building as well as the ELC Building. A \$3.2 million remodeling of the former Petroleum Building is slated for the coming year,

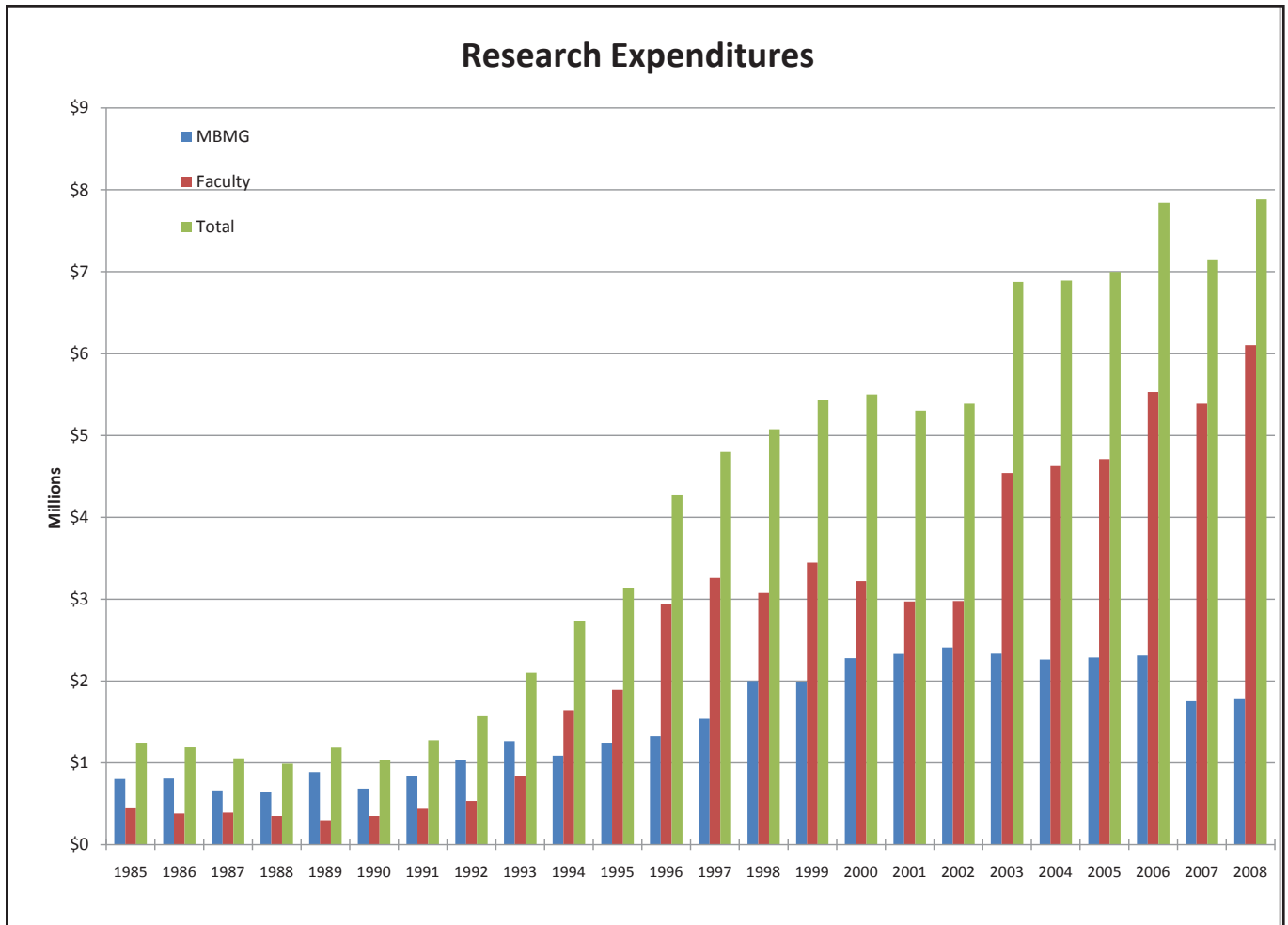
# SELF-STUDY 2010

making this facility ready for nursing instruction. In 2008, an entire HVAC and lighting remodel occurred at the South Campus representing a \$1.4 million investment. As addressed above, multi-media is a high-demand item. More than 10 classrooms have recently been upgraded with the equipment, and Tech will continue to address the need as budget authority allows. The campus has recently completed a deferred maintenance prioritization, and an emphasis will be placed on taking items off that list one at a time.

## **8.A.3 The institution's facilities are furnished adequately for work, study, and research by students, faculty, and staff.**

Montana Tech relies on non-academic department directors, department heads, and the academic deans to ensure that adequate furnishings are in place for offices. When one area improves, any surplus furniture is made available to the campus first. A Classroom/Lab Account is managed by the Vice Chancellor for Academic Affairs and is used to cover requests from the deans and department heads. Non-academic departments are required to budget and plan for upgrades. One-time-only requests can also be made to the Executive Budget Committee for these items.

The level of campus research continues to grow. The following Figure 8.A.1 illustrates the dramatic increase over the decade. This growth continues to put pressure both on the laboratory space available for research and on the space available for graduate student offices. The new Natural Resources Building contains a lab dedicated solely to research functions. This research lab is a new addition to Tech's largest program and will serve as a foundation to expand research by petroleum engineering students and faculty.



**FIGURE 8.A.1: MONTANA TECH RESEARCH EXPENDITURES – 1985-2008**

The Montana Tech campus participates in the NSF Research Facilities survey. As reported in the last survey of 12/13/2007, the campus had 23,222 square feet of net assignable research space. Campus research space is of mixed quality. Newest facilities are state-of-the-art with excellent equipment. Other space is older, but in general adequate for the function. In the NSF survey of this space, 50% to 90% was in satisfactory condition depending on the field of science and engineering involved. A 1998 renovation project and a recent new construction project have improved the space needs for three academic departments. The 1998 renovation to the Chemistry and Biology building added approximately 6,000 square feet of high-quality research space to these two departments, and the recent construction of the 55,000 square feet Natural Resources Building will provide state-of-the-art research space for the Petroleum Engineering program.

Other campus programs are still in need of space to keep pace with their growing research programs. The Research Office conducted a needs assessment with the graduate departments to determine their immediate and long range (five year)

# SELF-STUDY 2010

requirements for both research space and for graduate student office space. Table 8.A.I describes the results of this assessment as reported by the academic departments as noted.

**TABLE 8.A.I: NEEDS ASSESSMENT TABLE  
GRADUATE STUDIES AND RESEARCH SPACE**

DEPARTMENT	EXISTING SPACE IS ADEQUATE	ADD'L SPACE REQUIRED NOW (SQ FT)	ADD'L GRAD OFFICES REQUIRED NOW	ADD'L SPACE NEEDED BY 2013 (SQ FT)	ADD'L GRAD OFFICES NEEDED BY 2013
Biology	Yes	0	0	0	0
Chemistry	No	500	0	0	0
Electrical Engineering	No	1000	2	2000	4
Environmental Engineering	Yes	0	0	0	0
General Engineering	No	1000	4	2000	7
Geological Engineering	Yes	0	0	0	0
Geophysical Engineering	No	100	2	200	4
Metallurgy	No	2000	5	2000	5
Mining Engineering	Yes	0	0	0	0
Petroleum Engineering	Yes	0	0	0	0
Professional & Technical Comm.	Yes	0	0	0	0
Safety, Health & Industrial Hygiene	Yes	0	0	0	0
<b>TOTAL</b>		<b>4,600 sq ft</b>	<b>13</b>	<b>6,200 sq ft</b>	<b>20</b>

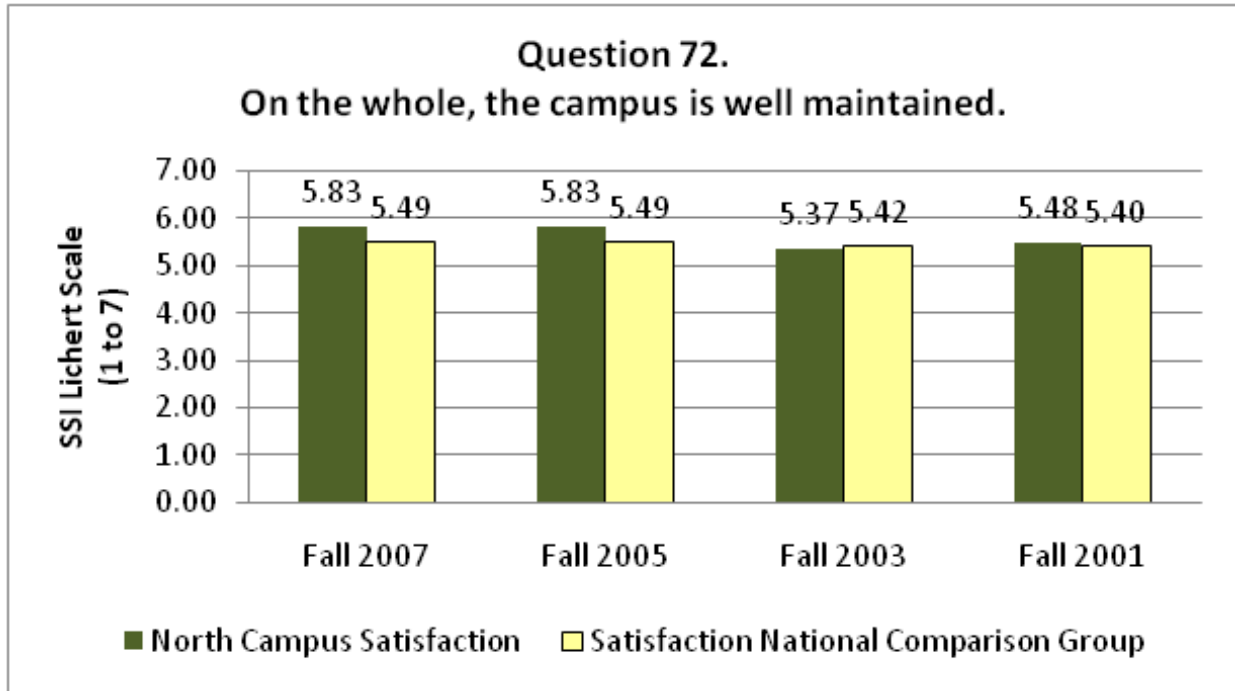
**8.A.4 The management, maintenance, and operation of instructional facilities are adequate to ensure their continuing quality and safety necessary to support the educational programs and support services of the institution.**

The Physical Plant recently purchased a new work order system which improves communication between physical plant personnel and requesting parties. This new system also prioritizes work and organizes staff and contractors. An additional benefit of this system is improved reporting, and tracking of project costs.

New construction and remodeling projects are often managed independently from the maintenance and operations staff. However, this group plays a key role in the design and programming efforts so as to align the new or improved space with the existing campus maintenance procedures. For example, Montana Tech has a common key hardware specification that will be used for all new doors. This influence prevents

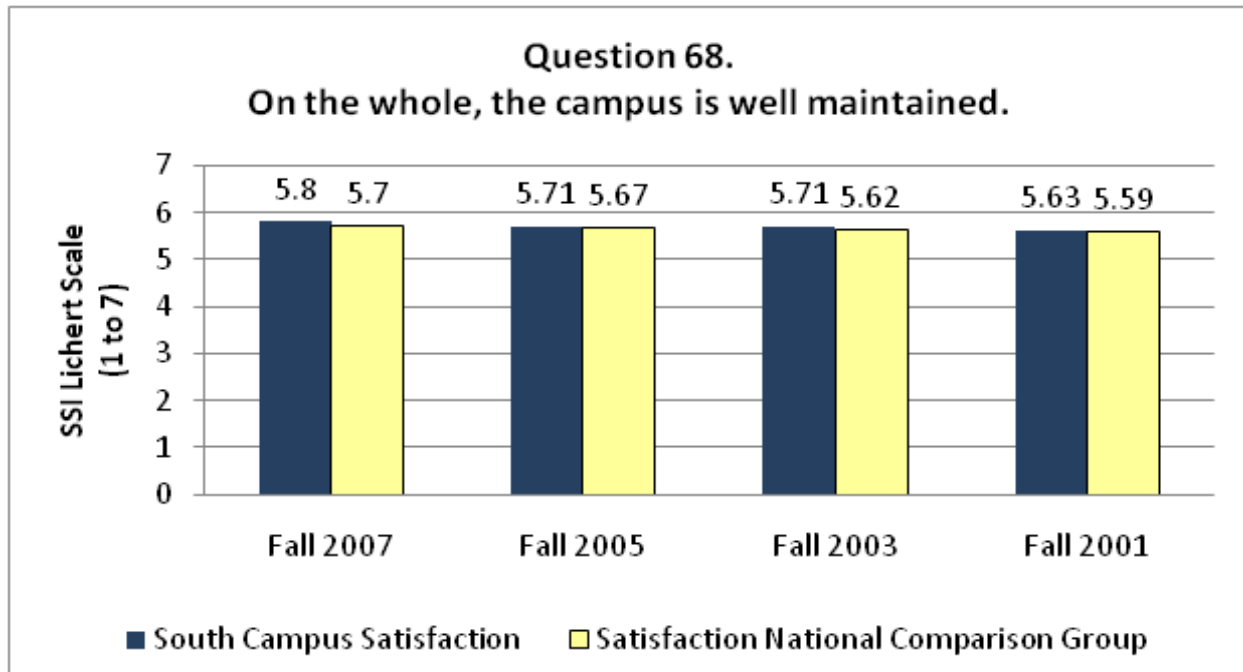
the creation of multiple key systems appearing on campus requiring large inventory expectations for the Physical Plant.

Figure 8.A.2 demonstrates the students' satisfaction with the overall maintenance of North Campus facilities. The following graphs demonstrate the students' reaction to the specific questions presented in the Student Satisfactory Index survey.



**FIGURE 8.A.2: STUDENT SATISFACTION WITH NORTH CAMPUS FACILITIES**

Figure 8.A.3 demonstrates the students' satisfaction with the overall maintenance of South Campus facilities.



**FIGURE 8.A.3: STUDENT SATISFACTION WITH SOUTH CAMPUS FACILITIES**

**8.A.5 Facilities are constructed and maintained with due regard for health and safety and for access by the physically disabled.**

Montana Tech maintains an Office of Environmental Health and Safety. This office is charged with ensuring the safety and health of the campus community, assisting in the prevention and reduction of accidents, identifying and eliminating safety and environmental hazards and unsafe conditions, and ensuring the proper disposal of hazardous waste. The Director of Environmental Health and Safety also acts as the chair of the Campus Safety Committee.

The Campus Safety Committee makes recommendations to the Chancellor on issues of workplace safety in the areas of facilities construction and maintenance. Under the direction of the Safety Committee - and with the consent of the Chancellor - physical facilities implements recommendations made by the committee when funds are made available for smaller construction and renovation projects. However, for larger projects, Montana Tech uses the supervision of the State of Montana’s Department of Administration, Division of Architecture and Engineering, as required by Montana statute.

Recent examples of campus initiatives resulting from Safety Committee recommendations are the fire sprinkling systems in Montana Tech apartment housing, an emergency notification siren, an e-mail and texting emergency notice system, sidewalks, new curb cuts for accessibility, and radar speed limit signs.

Montana Tech also has a dedicated Campus Access Committee specifically charged with maintaining access for the physically disabled. This committee interprets and applies the standards of the Americans with Disability Act and is an active voice in all proposed building projects at Montana Tech. All new construction and renovations projects are completed per ADA standards. During 2007, the Office of Civil Rights conducted a compliance audit of accessibility on the Montana Tech Campus. Montana Tech is still awaiting the results of the OCR audit.

## **8.A.6 When programs are offered off the primary campus, the physical facilities at these sites are appropriate to the programs offered.**

Montana Tech has a limited number of off-campus programs. In all cases, facilities for these sites are sufficient to support the following off-campus programs:

- » Montana Tech currently offers a business degree in Helena with the Helena COT as the host facility. Students in Helena and the surrounding area complete the last two years of their four-year program under the curriculum of Montana Tech. These courses are delivered face-to-face by Tech faculty, or technology is used to send the course online. A Helena COT faculty member directs this program for Montana Tech.
- » Montana Tech owns and operates a Mineral Research Center (MRC) south of the COT in Butte's Industrial Park. This center currently supports student clubs and organizations and serves as a satellite classroom for engineering programs. This facility is currently for sale with the proceeds intended to fund a future General Engineering Special Projects Building on the North Campus.
- » The Montana Bureau of Mines operates a satellite office in Billings, Montana located on the MSU-Billings campus.

## **8.A.7 When facilities owned and operated by other organizations or individuals are used by the institution for educational purposes, the facilities meet this standard.**

Not Applicable

## **STANDARD 8.B - EQUIPMENT AND MATERIALS**

Equipment is sufficient in quality and amount to facilitate the achievement of educational goals and objectives of the institution.

### **8.B.1 Suitable equipment (including computing and laboratory equipment) is provided and is readily accessible at on- and off-campus sites to meet educational and administrative requirements.**

In order to remain a leader in both graduate and undergraduate education in engineering, science, energy, health, information sciences, and technology, Montana Tech continually updates the equipment in all of its educational, administrative, and athletic facilities. To facilitate this process, several funding sources are used to meet



# SELF-STUDY 2010

short-term, mid-range, and long-term equipment goals. Generally this funding comes in the form of state current unrestricted funds and designated fee accounts. Table 8.B.I summarizes the use of current unrestricted equipment funding by program for both capital and minor equipment in FY 2005 through FY 2009.

**TABLE 8.B.I: MONTANA TECH CURRENT UNRESTRICTED EQUIPMENT FUNDING**

FISCAL YEAR		05	06	07	08	09	GRAND TOTAL
INSTRUCTION	Capital Equipment	\$12,332	\$162,289	\$39,313	\$420,758	\$220,645	\$855,336
	Minor Equipment	\$27,420	\$40,504	\$43,489	\$121,370	\$190,758	\$423,541
<b>INSTRUCTION TOTAL</b>		<b>\$39,752</b>	<b>\$202,792</b>	<b>\$82,802</b>	<b>\$542,128</b>	<b>\$411,403</b>	<b>\$1,278,877</b>
ACADEMIC SUPPORT	Capital Equipment	\$32,979	\$34,331	\$35,452	\$33,737	\$46,261	\$182,761
	Minor Equipment	\$977	\$2,904	\$7,692	\$16,245	\$10,373	\$38,192
<b>ACADEMIC SUPPORT TOTAL</b>		<b>\$33,956</b>	<b>\$37,236</b>	<b>\$43,144</b>	<b>\$49,981</b>	<b>\$56,635</b>	<b>\$220,952</b>
INSTITUTIONAL SUPPORT	Capital Equipment			\$0	\$11,302		\$11,302
	Minor Equipment	\$14	\$8,623	\$3,757	\$28,974	\$15,854	\$57,221
<b>INSTITUTIONAL SUPPORT TOTAL</b>		<b>\$14</b>	<b>\$8,623</b>	<b>\$3,757</b>	<b>\$40,275</b>	<b>\$15,854</b>	<b>\$68,523</b>
STUDENT SERVICES	Capital Equipment	\$0	\$2,797			\$7,500	\$10,297
	Minor Equipment	\$2,103	\$9,203	\$14,102	\$36,336	\$24,887	\$86,630
<b>STUDENT SERVICES TOTAL</b>		<b>\$2,103</b>	<b>\$12,000</b>	<b>\$14,102</b>	<b>\$36,336</b>	<b>\$32,387</b>	<b>\$96,927</b>
OPERATION/ MAINTENANCE PLANT	Capital Equipment	\$17,078	\$3,196	\$6,745	\$0	\$19,000	\$46,019
	Minor Equipment	\$4,127	\$10,243	\$29,442	\$21,291	\$8,062	\$73,164
<b>OPERATION/MAINTENANCE PLANT TOTAL</b>		<b>\$21,205</b>	<b>\$13,439</b>	<b>\$36,187</b>	<b>\$21,291</b>	<b>\$27,062</b>	<b>\$119,183</b>
<b>Grand Total</b>		<b>\$97,030</b>	<b>\$274,090</b>	<b>\$229,291</b>	<b>\$690,012</b>	<b>\$543,340</b>	<b>\$1,833,763</b>

## CURRENT UNRESTRICTED FUNDING

Individual departments are allocated operating funds every fiscal year. These operating funds may be allocated at the department's discretion for use on equipment as the need arises. Typical examples of fund usage include minor office equipment and laboratory and classroom equipment.

Another source of current unrestricted funding comes through the enrollment reserve. Assuming enrollment targets have been met, the Executive Budget Committee determines if there are any available funds to allocate to the campus. If funds are available, the committee solicits campus requests for one-time-only funding. After the requests are received, an ad-hoc prioritization committee ranks the requests based on merit and need and makes recommendations on distributing the funds.

During the past two legislative sessions, the State of Montana has released surplus budget amounts to state agencies through a competitive proposal process that ranked requests based on merit and need. As a result of that process, Montana Tech received special state one-time-only funding for developing a Pre-Apprenticeship Lineman program at the College of Technology, Petroleum Engineering Simulation Laboratory Equipment, Mining Engineering Paste Backfill Laboratory Equipment, high-performance computer funding, new lathes for the College of Technology, and Nursing Academy funding.

## DESIGNATED FEE ACCOUNTS

Several designated fee accounts are dedicated to laboratory equipment and computing equipment. One such fee account is the Computer Use Fee. This fee is used for equipment, software, maintenance, or related items which will benefit instructional programs. The use of this fee is determined through annual meetings of the Computer and Telecommunications Advisory Committee. This committee meets on and approves a computer use plan that is projected out for the next five years. This plan focuses on replacing all workstations in computer labs at least once every four years. The plan also contains allocations for network/departmental servers, software, paper and toner, and lab printers. There is a separate computer fee and plan for both the North and South Campuses, which can be found in Exhibit 8.B.I – [\*North Campus Computer Fee Plan\*](#) and Exhibit 8.B.II - [\*South Campus Computer Fee Plan\*](#).

The departmental network services coordinators are in a strategic position to recognize the educational and administrative requirements of the constituencies that they serve and consistently bring recommendations to the committee for timely consideration. Recommendations typically include which workstations and servers to replace, recommendations for software and support, as well as any individual departmental needs not addressed by the plan. The coordinators also work closely with department heads and deans to make recommendations on workstation specifications

# SELF-STUDY 2010

and requirements which are based on the specific educational needs of the department.

The campus also uses a Technology Fee to support the technology infrastructure for academic and administrative systems. Annually, the workstation needs of the faculty and staff are assessed, and replacement workstations are made from the technology fee account. Montana Tech strives to replace faculty and staff workstations at least once every four years. The Technology Fee is also used to purchase academic software and personal electronic devices for campus use, to repair and maintain network services, and to support campus online services. Exhibit 8.B.III – [\*Montana Tech Technology Fee Report\*](#) summarizes the activity in this account over the past fiscal year.

Major laboratory and educational equipment purchases are funded through the Equipment Fee. There are separate Equipment Fees for the North and the South campuses. Annually, the deans contact department heads and request a list of equipment needs for the upcoming fiscal year. The Deans Council then reviews the compiled list of requests and allocates funding for the upcoming year based on the projected fee revenue. The Vice Chancellor of Academic Affairs and Research oversees the process and regularly reviews the spending throughout the year. Should department requirements change through the year, the Vice Chancellor may reallocate funding in collaboration with the deans. Again, allocation of funding is based on the merit of the request and on the educational requirements of the academic programs. Activities of these accounts are in Exhibit 8.B.IV – [\*Montana Tech Equipment Fee Report\*](#) and Exhibit 8.B.V – [\*Montana Tech COT Equipment Fee Report\*](#).

An Academic Facility Fee is also assessed to students and is used to repay the bonds associated classroom projects (\$71,500 per year). Fees generated in excess of the bond payment are allocated to campus classroom improvement projects. If faculty or staff members recognize a need for classroom improvements, they submit a request to the Vice Chancellor of Academic Affairs and Research. Typically these requests include classroom furniture, such as tables, desks, chairs, and podiums as well as classroom fixtures, such as white boards, overhead projectors, and computer data projectors. The past five years of activity in this account is summarized in Exhibit 8.B.VI – [\*Montana Tech Academic Facility Fee Report\*](#).

Table 8.B.II below summarizes funds utilized from FY 2005 through FY 2009 from designated fee accounts.

**TABLE 8.B.II**  
**MONTANA TECH DESIGNATED FEE ACCOUNT EQUIPMENT FUNDING**

FEE ACCOUNT	FY05	FY06	FY07	FY08	FY09
Equipment Fee (BEQMTF)	\$207,288	\$238,874	\$294,073	\$264,819	\$272,014
Computer Fee (BCOMPU)	\$183,556	\$383,912	\$275,984	\$216,827	\$215,402
Academic Facilities Fee (BAFMGB)	\$42,590	\$19,908	\$33,029	\$45,196	\$102,981
Technology Fee (BTECFE)	\$184,161	\$161,655	\$157,882	\$227,763	\$307,596
COT Equipment Fee (BCEQPF)	\$48,251	\$66,554	\$57,485	\$72,160	\$67,664
COT Computer Fee (BCCMPF)	\$42,809	\$56,648	\$68,650	\$47,715	\$50,810
<b>Total</b>	<b>\$708,655</b>	<b>\$927,551</b>	<b>\$887,103</b>	<b>\$874,480</b>	<b>\$1,016,467</b>

## NETWORK SERVICES

Montana Tech has 11 main instructional computer labs at the North Campus and 7 main instructional computer labs at the College of Technology (COT) South Campus. In addition to the main instructional labs, several department labs are available for student use. The departmental labs not only have the core software, but also software specific to a particular discipline. A complete list of software for the labs is listed in Exhibit 8.B.VII - [North Campus Computer Lab Software Inventory](#) and in Exhibit 8.B.VIII [South Campus Computer Lab Software Inventory](#).

Students are encouraged to use these labs for word processing, business applications, engineering design projects, and for data analysis. Instructional labs are available for general use during non-scheduled class time, and scheduled instructional class times are posted outside each lab. The student computer availability at the College of Technology consists of 7 computer rooms with at least 24 seats and the Learning Center/Library with 23 seats. The seven computer rooms are scheduled for classes, but are open for general use outside of those times, from 7:00 a.m. until 9:30 p.m. weekdays only. The Library is open between 8:00 a.m. until 5:00 p.m. weekdays.

All students are assigned a user account and an e-mail mailbox prior to the close of registration. This account remains with students throughout their academic career. Students can obtain help on e-mail and computer use from each college's Computer Coordinator, from the CTS help desk, or from the Network Help Desk. Each College on the North Campus and the South Campus is represented by a Computer Coordinator who is responsible for the hardware and software installation and troubleshooting in the computer rooms and for faculty and staff. These coordinators are responsible for hardware and software upgrades and for replacements as needed. These coordinators play a vital role in determining the technology needs of Montana Tech as they are familiar with the pulse of the faculty, staff, and students they are assigned to support.

Montana Tech's microcomputer teaching labs are on a four-year rolling replacement schedule. Machines that are taken from these labs are used in auxiliary non-teaching labs to replace and upgrade older less powerful machines. Faculty and staff computers are upgraded as the need arises, typically on a four-year replacement rotation.

## TELEPHONE SERVICES

Montana Tech Telephone Services provides modern digital and analog telephone switching, direct distance dialing, and radio dispatch services for Montana Tech. The current Northern Telecom switching platform, located in a secure area of Centennial Residence Hall, was constructed with the building in 1999 and serves as the Butte Node for the State of Montana Information Technology Services Division. Satellite Switches located at the South Campus and at Montana Tech Family Housing are part of the Montana Tech system, while Butte Social and Rehabilitation Services, Butte-Silver Bow

# SELF-STUDY 2010

County Local Government, and a plethora of other State Offices in Butte are networked through the Montana Tech Switch.

Montana Tech Telephone Services is located within the Physical Facilities Department of Montana Tech and employs one full-time Manager/Technician and one part-time Switchboard Operator. Part-time student help is also heavily relied upon.

Telephone Services is further divided into several functions: Budget and Management, Construction; Installation and Maintenance; Records; Emergency Response, and Auxiliary. The Budget for Telephone Services is based on charge-back to requesting departments. Currently each access line on campus is charged \$10.00 per month or \$120.00 annually. Both digital and analog switched services are available.

Outside plant cable is buried by Physical Facilities in consultation with Telephone Services. During the last five-year period, an average of 600 linear feet of 400 pair cable plant has been buried during the construction season, the months of June and July. Telephone Services designs and splices outside plant cable.

Network Services now manages inside cable plant by using generic Category 5E or Category 6 patch panels. Currently, most buildings have been rewired by certified contractors. When ordered, the Telephone Technician extends telephone connections from the Telephone Point-of-Presence through the patch panel to the requisite jack.

Repair and Move/Add/Change orders are received via e-mail or telephone call. Most work orders are completed the day they originate. Telephone Services also maintains a web page which details policies and operation guides for analog and digital telephones, voice mail, and for long-distance dialing.

Local paper directories, software listings, and the State Government Telephone Directory are contributed to or published annually or semi-annually by the department – these directories are also available in electronic format. Numerous cable maps, records, and databases are continuously updated. Both the basic switch programming and the state long-distance access records are managed locally.

Campus Security and Physical Facilities relies upon Telephone Services to license, install, and maintain its two-way-radio systems. The system includes the main repeater, emergency equipment located in the Security Patrol Car, and numerous handheld radios carried by Facilities and Safety personnel. Telephone Services maintains a relationship with Butte Silver Bow Law Enforcement which allows Campus Security to directly contact Butte Dispatch by radio in the case of an emergency. Montana Tech is also licensed by the State of Montana to use Mutual Aid Frequencies.

Telephone Services maintains the Telephone E-911 system and updates the ALI Emergency Response Data Base so that the origin of calls going to 911 Emergency Services can be located on campus.

Upon request, lectures are presented to academic classes on Telephone and Electronic Technology. The last five year period has seen continued growth of Switch and Outside Plant Cabling. The current switch room located in Centennial Hall is at capacity. It is estimated that only 10% of resident students use the campus wired

telephones, preferring to communicate via their own wireless cell phones instead. A “technology fee” covering telephone service, voice mail, and internet access will continue to be assessed to each resident student, but telephone and voice mail service will only be applied on a requested basis.

## **8.B.2 Equipment is maintained in proper operating condition, is inventoried and controlled, and replaced or upgraded as needed.**

Montana Tech has adopted the asset management procedures established by the asset management group of The University of Montana. *The University of Montana Capital Asset Procedures* are in Exhibit 8.B.IX. Responsibility for fixed asset accounting and management resides with the Associate Director of Budgets and Purchasing. Equipment purchases of more than \$5,000 and with a useful life of more than one year are considered capital assets. On a monthly basis, the fixed asset manager in Missoula runs a report listing purchases over \$5,000 and charged to capital accounts for all four of The University of Montana affiliated campuses. The asset manager at each individual location determines if the purchase is a capital asset. If it is a capital asset, a property control tag is prepared and attached to the asset, and the item is capitalized in the fixed assets module of Banner. On a quarterly basis, a complete capital asset listing is generated by the fixed asset manager for The University of Montana and is distributed to the affiliated campuses as shown in Exhibit 8.B.X – *Montana Tech Fixed Asset Listing*. Periodic reminders are sent to the campus to remind them that any disposal of assets must be coordinated through the Associate Director of Budgets and Purchasing. A physical inventory of assets is performed at least every other year. The Associate Director has in place a rotating schedule which ensures assets are inventoried per auditor recommendations.

Montana Tech has several different funding mechanisms for the acquisition, maintenance, and operation of equipment and property. There is a student fee for computer equipment. A five-year computer plan delineates classroom lab equipment, software, printers, and servers. Generally, computer workstations and servers are on a four-year rotation. Also, a technology fee funds faculty and staff workstations which are also on a four-year rotation. An equipment fee is used for classroom and lab equipment. Requests for use of these funds are submitted on an annual basis, prioritized, and awarded at the beginning of the fiscal year. Montana Tech also has an academic facilities fee for required improvements to classrooms.

Montana Tech receives state funds for the maintenance and operation of plant. A plant service shop takes internal requests for maintenance and internally charges departments for the use of those services. State funding includes appropriations for grounds keeping and general maintenance to the campus. For larger capital building projects, the Director of Physical Facilities, the Vice Chancellor for Academic Affairs and Research, and the Vice Chancellor for Administration and Finance from Montana Tech work with their counterparts from other University of Montana campuses and determine a list of long range building priorities. A prioritized list is submitted by The University of Montana and Montana State University to the Board of Regents for review

# SELF-STUDY 2010

and approval prior to being submitted to the Department of Administration, Division of Architecture and Engineering, for legislative action. Once incorporated into the long range building program, building projects are funded through state funds, private donations, revenue bonds, and through other revenue sources.

The State of Montana has adopted a capitalization threshold of \$5,000 for individual pieces of equipment. Individual pieces of information technology equipment typically fall below this threshold, and as such, are not routinely inventoried and controlled as part of the capital asset process. However, each individual computer coordinator maintains a list of equipment that they are responsible for supporting. Annually, as part of the Computer Use Fee planning processing, these inventories are updated and replacements are recommended to the Computer and Telecommunications Advisory Committee.

Each college maintains an operating account for the repair, maintenance, and



support of information technology equipment within their school.

Administrative departments are generally responsible for the repair and maintenance of equipment in their areas.

Departments may use outside vendors to repair

and maintain equipment in their areas, or may use the campus resource for repair and maintenance. The Plant Service Shop is operated by the Physical Facilities department and focuses primarily on small improvements or repairs to facilities. However, the group assists in installing office furniture and equipment and some laboratory equipment such as refrigerators and lab hoods. These repairs and maintenance are performed by Montana Tech staff and, in some instances, charged to the department requesting maintenance.

Routine maintenance of equipment is also achieved through maintaining Repair & Replacement (R & R) accounts. R & R accounts, or Life Cycle accounts, are plant funds set aside specifically for routine repair and replacement of equipment. Plant fund R & R accounts are funded through service revenues which are generated by the service provided. Examples of Plant R & R accounts include Motor Pool, Physical Plant R & R,

Telecommunications R & R, Technology R & R, and HPER Expansion R & R.

Plant R & R accounts are also funded through auxiliary enterprises for the repair and replacement of equipment in those areas, which include Dining Services R & R, Student Union Building R & R, Bookstore R & R, and Residence Hall R & R. These accounts may be set up and funded through a variety of sources when an individual need arises, such as the Auditorium Sound System account, Bookstore Registers account, and the Engineering Hall Lab Renovation account. A complete listing of R & R accounts and their year end balances is shown in the attachment section. (Exhibit 8.B.XI)

### **8.B.3 Use, storage, and disposal of hazardous materials are in accordance with the institution's prescribed procedures.**

The use, storage, and disposal of hazardous materials at Montana Tech are under the purview of the Environmental Health & Safety Department. The mission of Environmental Health & Safety Department is:

- » to provide for the health and safety of the campus community;
- » to assist in preventing or reducing accidents;
- » to identify and eliminate safety and environmental hazards and unsafe conditions; and
- » to ensure proper disposal of hazardous waste.

## **HAZARDOUS MATERIALS MANAGEMENT**

Because various academic and research programs use chemicals on both Montana Tech campuses, Montana Tech maintains a fairly large inventory of chemicals. The Director of Environmental Health and Safety (EH&S) manages the hazardous materials program.

The following outlines both the Montana Tech hazardous materials and hazardous waste management programs as well as the radiation safety program.

As stated in the Montana Tech Hazard Communication Program, all laboratories that use and/or store chemicals are required to have a copy of the Chemical Hygiene Plan readily accessible, along with copies of the material safety data sheets (MSDS's) for each chemical in the lab or storeroom.

In general, flammable and corrosive chemicals are stored in appropriate cabinets, and other chemicals are stored on shelves by compatibility, with a lip to prevent them from falling off the shelves. Both campuses also store and use a variety of janitorial supplies; however, these are not tracked through the chemical inventory system.

All other chemicals are managed and tracked through a chemical software management program called ChIM (Chemical Inventory Management). Each department at Montana Tech has a chemical acquisition manager (CAM) who is the "gatekeeper" for all chemical acquisitions. Everyone (faculty, staff, and students) must go through a CAM to acquire chemicals. The CAM has the following responsibilities



# SELF-STUDY 2010

when a user requests a chemical:

1. Check EPA's "p-list" to see if the material is an acutely hazardous material. If it is, the user is asked to use a less hazardous material if possible.
2. Check the campus chemical inventory to see if the material is already available on campus for the person who needs the chemical.
3. Request the purchase order number or use Procard and order the chemical(s) requested.
4. Receive the chemical when it arrives, add the chemical to the campus inventory by placing a bar code sticker on the container, and then enter all the pertinent information into the computer system.
5. Ensure that the MSDS was received and distribute it to the appropriate person and then enter it in the MSDS file or book.
6. Distribute the chemical to the user for proper handling and storage.
7. When a container is empty, remove the chemical from the computer inventory and give the bar code number from the empty container to the CAM.
8. Make the appropriate changes in the computer if a chemical is redistributed to another person or department or if it is disposed of as hazardous waste.

The ChIM program allows easy access to Tech's entire chemical inventory. Information can be retrieved by at many levels - campus, building, department, or room. Chemicals can be looked up by bar code number or by name. Currently, all CAMs and the Director of Environmental Health and Safety have access to the ChIM system. Limited access is granted to other individuals on an as-needed basis.

A complete copy of [\*Montana Tech's Hazardous Materials Management Plan\*](#) (Revised: Dec 2009) is included in Exhibit 8.B.XII.

## TRAINING

All students enrolled in a lab where hazardous materials are used or where a potentially hazardous environment exists are required to do an online lab safety training session every semester. This program is run through Blackboard, and instructors require students to complete the training and pass a test with a 90 percent before they are allowed to work in the laboratory. Test records are maintained in the EH&S Office.

Another online safety training program was offered for the first time during the Fall of 2008. This training has been used for all faculty, staff, and students who work on projects. Currently, over 40 safety training topics are available through this program. A copy of the [\*Hazard Communication Program\*](#) (Updated: Dec 2009) is in Exhibit 8.B.XIII.

## HAZARDOUS WASTE

Montana Tech's hazardous waste program is also managed by the Director of Environmental Health and Safety. When departments or individuals have waste to dispose of, EH&S is called, a Montana Tech internal manifest is completed, and the materials are then transferred to the hazardous waste storage room which is located in the Chemistry/Biology Building. Here the materials are labeled as hazardous waste and are added to the inventory of hazardous waste. All containers are stored in cabinets appropriate for the waste until shipping time. The storage room maintains 10 air exchanges per hour for ventilation and is kept under negative pressure in the event of a chemical release or spill.

Montana Tech is currently classified as a conditionally exempt generator of hazardous waste and has not shipped hazardous waste since Fall of 2009. Our waste minimization program has been very effective.

## RADIOACTIVE MATERIALS

The Director of EH&S serves as the Montana Tech Radiation Safety Officer. Currently, the campus does not have radioactive sources that are in permanent storage. Also, Tech has two departments that use x-ray machines. All employees who work in the areas with the x-ray machines are required to wear radiation badges or have the area badged. These badges are sent in for analysis every three months.

Montana Tech currently has no faculty who are working with radioisotopes and has no plans to work with radioisotopes in the immediate future. Exhibit 8.B.XIV contains the [\*Radiation Safety Manual\*](#) (Updated: November 2005).

## STANDARD 8C - PHYSICAL RESOURCES PLANNING

**8.C.1 The master plan for the campus physical development is consistent with the mission and the long-range educational plan of the institution, and the master plan is updated periodically.**

The Campus Master Plan was developed specifically to sustain the mission of Montana Tech: To meet the changing needs of society by supplying knowledge and education through a strong undergraduate curriculum augmented by research, graduate education, and service. Montana Tech's mission would not be possible without the ongoing maintenance and development of its physical facilities. Accordingly, the Campus Master Plan details both the physical growth and the renovations planned for the campus so that Tech can fulfill its mission and achieve the goals in the strategic plan.

The Strategic Planning Committee provided the overall leadership necessary

# SELF-STUDY 2010

to complete the campus Master Plan. As a sub-committee of the Strategic Planning Committee, the Master Plan Committee is tasked with developing and updating the master plan document, which itself includes plans for new construction, renovations, and for acquisition of use of real property. The Master Plan Committee meets at least monthly and meets with constituent groups external to Montana Tech to solicit feedback. In the Fall of 2009, this group met both with neighbors of Montana Tech and with Butte Silver Bow officials to present the anticipated growth plan and its impact on the community surrounding the campus.

A major tool for communicating this plan is a document called *Vision 2025*, included in Exhibit 8.C.I. Of importance in this document is the diagram which shows building locations as anticipated for the future. Included in the campus planning are the 57 plus acres of land recently donated by ARCO. This property has almost doubled the North Campus footprint and provides the campus with increased opportunities for expansion. A graphic representation of the *ARCO Land Acquisition* is displayed in Exhibit 8.C.II.

Moreover, the State of Montana is in the process of implementing a facilities condition inventory for all state buildings. Montana Tech is currently entering data into the spreadsheet which will be used by the Governor's Budget and Program Planning Office to plan for renovating and constructing buildings with state Long Range Building Program funds.

## **8.C.2 Physical facilities development and major renovation planning include plans for the acquisition or allocation of the required capital and operating funds.**

Authority to construct buildings is granted to the Department of Administration of the State of Montana as covered in Exhibit 8.C.III *Montana Code Annotated 18.2.102*. The State of Montana manages all new construction and most major renovations through the Division of Architecture and Engineering (A & E). A & E is a division of the Department of Administration and therefore reports directly to the Governor's Office.

At Montana Tech, planning starts at the departmental level with the department head presenting the department's budget and facilities requirements to the Executive Budget Committee. These requested items are then prioritized for later presentation to the Facilities Committee at The University of Montana. A copy of the *Long Range Building Program Priority List* is included in Exhibit 8.C.IV.

The Facilities Committee (which includes Montana Tech's Director of Facilities, Vice Chancellor for Academic Affairs and Research and the Vice Chancellor for Administration and Finance) considers requests from the four affiliated campuses of The University of Montana before submitting a prioritized list to the President of the University of Montana. The President discusses priorities with CEOs from the affiliated campuses and forwards it to the Commissioner of Higher Education.

Once at the Commissioner's Office, the prioritized lists from the four campuses of The University of Montana and the four campuses of Montana State University are then combined by the Commissioner. Next, the two Vice Presidents, at the large campuses, and the Deputy Commissioner for Fiscal Affairs prepare a prioritized list of projects for

all campuses to be submitted to the Board of Regents.

At the May meeting in even-numbered years, the Board of Regents approves a prioritized list of projects that is submitted to the Governor's Budget Office. In November of even-numbered years, the Governor publishes the recommended budget that goes to the Legislature for its consideration. This proposed budget includes capital projects for the entire Montana University System as well as for other state agencies. If the Legislature appropriates funds to a capital project, A & E manages the project with campus input ranging from programming to, in some cases, major oversight of the project. A description of the [\*Montana University System LRBP Process\*](#) and current projects list is in Exhibit 8.C.V.

A recent example of an approved Long Range Building Projects (LRBP) that illustrates this process is the Natural Resources Building that was completed in December of 2009. The request for a new building to house the Bureau of Mines and Geology (a State agency that is an integral division of Montana Tech) also included a renovation of the Petroleum Engineering Building on the campus LRBP request list. However, during several very lean Legislative sessions, little money was appropriated for capital improvements. After Montana Tech was not funded for a new building and a renovation in the 2003 Legislative session, A & E recommended that Montana Tech build one building to accommodate both the Bureau of Mines and Geology and the Petroleum Engineering Department. The 2005 Legislature appropriated \$9 million for this building with a provision that Montana Tech raise as much as possible from private sources. The 2007 Legislature appropriate an additional \$5.2 million, the campus contributed \$1.2 million, and the Montana Tech Foundation raised \$2 million in private funding for a total of \$17.4 million to spend on construction of this building. The actual cost of the building was about \$15.4 million. The remaining \$2 million was reallocated to other buildings including the renovation of the former Petroleum Engineering Building which will become the Health Sciences Building.

An example of a project funded through the internal budgeting process mechanism is the Special Projects Building for General Engineering. This proposal was first brought to the Executive Budget Committee by the General Engineering Department Head during budget hearings in the Spring of 2009. The request was for a 7,235 square foot metal building with an estimated cost of about one million dollars. This building would be used as an instructional lab and project facility for engineering students. Funding for this project will become available when Montana Tech sells its property located in the Butte Industrial Park. This project will be funded internally.

As Montana Tech looks to the next legislative session in early 2011, the following items represent a few significant renovation or construction projects that will require Legislative Appropriations:

- » Complete renovation of the former Petroleum Engineering Building which will become the Health Sciences Building to house Nursing and Outreach Programs. The estimated cost of completing this project is \$3 million.
- » Renovate the Montana Tech Library (Phase I). Campus funds are available to

# SELF-STUDY 2010

plan for this renovation. The estimated total cost is \$9 million; however, Phase I of this renovation can be done for \$3 - 5 million.

- » Modernize Main Hall and bring it into code compliance. This project is estimated to cost over \$20 million. A separate engineering study will be done during 2010 to determine the extent of the building foundation work required.
- » Construct a new College of Technology Building on the North Campus property. The estimated cost of this 100,000 square foot facility is \$35 million. Part of this may be funded from the sale of the current COT building and the adjacent 40 acres of prime commercial property.

Examples of a priority list of renovation and construction projects that do not require Legislative action include:

- » Renovating the Health Physical Education and Recreation Building (HPER). This \$3 million project began in late 2009 and should be completed in late 2010. It is a renovation and expansion of the HPER and is funded by a 15-year student fee to repay a \$2.7 million loan.
- » Constructing a new Residence Hall. Montana Tech is over subscribed in its residence halls. A new residence hall with 100 beds will be constructed with funds from the sale of bonds which will be repaid from rent on this building.
- » Building a new Math and Science Academy Residence Hall. If the Montana Academy of Math and Science is funded, Montana Tech will need a residence hall to accommodate 40 high school juniors and seniors as well as house parents and other support personnel. This residence hall will need to be built in part with private or grant funds in order to keep rent prices reasonable.
- » Constructing a Research Building. This building is in the very early stages of planning. The proposal is to obtain either Federal funding or private funding or a combination of these to build the building. The primary theme of the facility is energy research with an emphasis on how to better use our current energy resources while simultaneously developing new resources.
- » Developing additional parking space. This is a major issue and is being addressed with temporary parking in several locations. More permanent parking including a possible parking garage is under consideration to conserve available space.
- » Expanding the campus recreational fields. As the availability of space within the campus core becomes more challenging, it will be necessary to relocate recreation fields to the south or southwest of the campus.

For each new building or expansion of an existing building, Montana Tech is required to submit a form that calculates the operation and maintenance (O & M) cost of the new facility. Tech must designate how the O & M will be paid. If the facility is a state supported facility, the cost of O & M must be approved as a part of the Legislative approval process. For each of the capital projects listed above, the method of acquiring the necessary funding has been designated. In late Fall of each even-numbered year, Montana Tech hosts a reception for the various Legislative delegations in the region and presents them the campus needs to be considered in the Long Range Building Planning

Committee of the Legislature. These elected officials have historically been very responsive to these needs. In legislative sessions when LRBP funding has been available for appropriation, Montana Tech has generally fared well.

### **8.C.3 Physical resource planning addresses access to institutional facilities for special constituencies including the physically impaired and provides for appropriate security arrangements.**

Montana Tech uses a Campus Access Committee to address issues of access to institutional facilities. This committee addresses concerns of access to new facilities, assesses the needs of current facilities, and makes recommendations. A good example of how this committee functions may be seen in the planned renovation of the former Petroleum Engineering Building into the Health Sciences Building. The Campus Access Committee identified the problem of accessibility in the current Petroleum Engineering Building. Consequently, one of the primary goals is to make the building completely ADA accessible. This planning includes, but is not limited to, installing an elevator to make all floors accessible and installing ADA accessible bathrooms on all floors.

In addition to the example mentioned previously, the LRBP funding normally includes funds for ADA Access and for Code Compliance projects. The Campus Access Committee provides input when allocating funds appropriated by the Legislature for these projects. The Campus Access Committee has an extensive document which includes a list of potential projects for completion on campus. This document is updated as needed and is included in Exhibit 8.C.VI *ADA Self-Evaluation and Transition Plan*. Other examples of where campus accessibility of the campus has been improved include installing sidewalk cuts and building ramps.

Campus security is coordinated through the physical facilities office. Montana Tech uses a contracted security service with officers dedicated specifically to the Montana Tech campuses. A security officer physically patrols the Montana Tech campuses 24/7. The Campus Security officers play a wide-ranging role at Tech, patrolling the campus and assisting students and staff whenever and in whatever way they can. Officers provide such services as investigation of thefts, handling of alcohol-related or other behavior problems on campus, parking control, and crowd control at games and concerts. Officers are trained in crisis management and advanced first aid.

### **8.C.4 Governing board members and affected constituent groups are involved, as appropriate, in planning physical facilities.**

The Board of Regents of Higher Education of Montana is involved in all decisions to build or renovate facilities on campuses of the entire Montana University System. During the planning stage, the Board of Regents is directly involved because of the need to make presentations at several Legislative sessions before the Legislature actually funds the project.

At a minimum, the Division of Architecture and Engineering (A & E) is involved with the planning of building and any major renovations for all state buildings. In most cases, someone from A&E manages the entire project for the campus. Supervision of

# SELF-STUDY 2010

small construction projects (under \$75,000) may be overseen by the individual campus as allowed in [Montana Code Annotated 18-2-103](#), Exhibit 8.C.VII. Smaller capital projects between \$75,000 and \$100,000 can be approved by the Office of the Commissioner of Higher Education (OCHE) and managed at a campus level.

In conclusion, capital projects involve a programming phase in which all the users are heavily involved. As described above, the on-campus community is involved at the very early stages of planning for growth. The same principle applies to those living near the campus if they are likely to be impacted by capital projects. An excellent example of community input occurred during the planning stage for the Montana Tech Arch on Park Street. During the planning stage, all the neighbors to Montana Tech's North Campus were invited on campus for lunch to discuss how this project would impact them and their property. Bob and Pauline Poore were the primary donors and had originally asked that the arch be named the Mansfield Arch as an east entrance to the campus where Senator Mike Mansfield had first attended college. At the luncheon, the neighbors strongly urged the Bob & Pauline Poore to name it the "Montana Tech Arch." Thus it's called the "Arch."

## REQUIRED DOCUMENTATION

Campus Maps – [North](#) and [South](#) campuses

