

University of Michigan-Flint

Comprehensive 5-Year Capital Outlay Plan

FY 2010

Submitted December 2008

PLAN OVERVIEW

This comprehensive 5-year plan updates last year's submission and adjusts estimated project costs and program priorities where appropriate. For this FY2010 Capital Outlay submission, the University request consideration of its \$21.84 million #1 priority request: **To Reconfigure and Renovate Murchie Science Laboratory Building Laboratory spaces and, its 18 Classrooms.** The University's current \$9.35 FY2006 Capital Outlay project (*French Hall Classrooms for the Future*) is on-time and on-budget.

Funding deferred maintenance (capital renewal) continues to pose a major challenge for public universities across the state, particularly in the context of ongoing State budget constraints. Failure to invest today in capital renewal will result in a deteriorating campus infrastructure that will be much more difficult and costly to renew, than if attended to on an ongoing basis. Therefore, we urge the State to also consider funding capital renewal projects on a "stand alone" basis and incorporate this philosophy into capital outlay rules and regulations, and funding mechanisms.

This year's projected 10-year \$33.1 million deferred maintenance (capital renewal) plan is more than last year's \$29.0 million projection, primarily because of campus growth and this past year's in-depth facility and infrastructure review. Several critical projects were completed during FY2007-08, including the removal, remediation and replacement of the central energy plant's underground storage tanks. Several other deferred maintenance items were removed from this list because of inclusion in the FY2006 French Hall Capital Outlay project (See Facility Condition Review of French Hall for more details on page 12).

The Table 2, Deferred Maintenance (Capital Renewal) Summary on page 12, indicates that the University of Michigan-Flint must invest on average \$3.3 million/yr over the next 10 years to maintain its buildings and infrastructure in good condition and in good working order, as follows:

\$ 2.1 million	(BY2009 critical)
\$ 3.8 million	(BY2009)
\$ 14.0 million	(BY2010-14)
<u>\$ 13.1 million</u>	(BY2015-19)

Total \$ 33.1 million

In moving forward to FY 09, several non-critical issues have now become critical. This is especially true in forecasting future needs and maintenance of critical systems in the Murchie Science Building, University parking structures and future heating and cooling systems within the Central Energy Plant (CEP). Many crucial issues were addressed in FY08 including the removal of Boiler 1, the original multi fuel boiler in CEP, high voltage maintenance performed on the primary feed and 70% of existing substations. Additionally, extensive structural repairs were made to the Harrison Street Parking Deck in FY2008.

With rising energy costs and greater awareness of environmental issues, the University is actively pursuing energy conservation. Consequently, the Recreation Center received a substantial lighting upgrade which greatly reduced not only KW usage but also greatly reduced the building's heat load, allowing the existing ventilation system to properly and efficiently cool the building. Variable frequency drives are currently being installed on air handling systems in the Murchie Science Building, University Center, and the University Pavilion. Control upgrades have been completed on the CEP boilers and the Pavilion chillers, which have yielded increased output with less maintenance and reduced natural gas and electrical consumption.

The French Hall Capital Outlay project addressed many of the critical items in French Hall. However, there are still remaining mechanical and surface issues in the building which were not part of the outlay project and remain as deferred maintenance items.

Some innovative academic initiatives underway at the University of Michigan – Flint include:

- **New Genesee Early College (GEC):** The Genesee Early College opened its doors in fall 2007. This unique new high school alternative run by the Genesee Intermediate School District (GISD) opened in the William S. White Building on the campus of the University of Michigan-Flint. It is the state's first early college high school that will prepare students for health careers on the campus of a major [tier 1] university.

GEC is a fully operational high school, serving the needs of Genesee County area students interested in pursuing academic and professional careers in the health professions and related fields. Students attending this five-year program earn their high school diploma (awarded by the Genesee Intermediate School District) as well as up to 60 transferable credits towards their undergraduate degrees, and experience valuable experiential learning and internship opportunities in their areas of interest. It is anticipated that 400 students will enroll by 2010.

- **Super Science Friday:** Several hundred area students in grades 5-8 took part in Super Science Friday. This new program involved many UM-Flint faculty preparing special science programs and demonstrations, including crime scene investigation (CSI)-all aimed at increasing student's knowledge and interest in science.
- **Math Day Competition:** For the past several years, the Math Department faculty has invited high school students to test their knowledge in Math Day Competition. This year, over a hundred students participated. That's almost the same number of students who participated in our Computer Programming Competition where the winning teams receive UM-Flint scholarships.
- **Master of Public Administration:** This innovative WebPlus Weekend/Online Program in Educational Administration is designed to provide a high-quality experience to full-time, working educators. A unique blend of face-to-face interaction and convenient online coursework provides teachers, administrators, and aspiring administrators the tools and concepts necessary for successful administration and an informed perspective on the range of problems confronting K-12 education. After completion of the two-year, 39-credit hour program, students are awarded a Master of Public Administration from the University of Michigan's nationally recognized Horace H. Rackham School of Graduate Studies. The MPA concentration in Educational Administration is approved by the Michigan Department of Education for Principal Preparation.
- **RN/BSN Online Program:** This innovative online program is designed for working registered nurses who wish to obtain their bachelor's degree. The instruction for this degree program is delivered completely online. Students select a few on-campus sessions for presentations and assessment.
- **The Master of Arts in English Language and Literature:** This degree program is offered through the College of Arts and Sciences at UM-Flint. It has a flexible curriculum and is offered as a part-time program, with classes in a variety of traditional, online, and mixed-mode formats with meetings during evening hours and weekends. It is designed to provide convenience and flexibility to working professionals.
- **Master of Arts in Social Sciences:** This program is offered through the College of Arts and Sciences. It is designed to engage students in critical, multi-disciplinary exploration of human societies across the globe. Students explore social, historical, cultural, political, and economic themes, using both theoretical approaches and concrete case studies. This program consists of 30 graduate credit hours. Students take four social science classes, as well as a set of four classes from one of three concentrations: U.S. History and Politics, Global Studies, or Gender Studies. The MA in Social Sciences is designed primarily for the part-time student with evening courses and courses that are partially online.
- **Internationalizing the Campus:** Six years ago there were fewer than 25 international students. Last fall, the university added a director of the International Student Center. In addition, the School of Management leadership and faculty established many overseas partnerships with other universities. For fall 2008, the number of international students reached 2% of the student body and come from 28 countries including: Canada: 28, South Korea: 9, China: 18, India: 49 and Taiwan, Province of China: 9.
- **Doctorate of Physical Therapy:** This program replaced the Master in Physical Therapy with essentially no increase in annual operating expenses.
- **Master of Arts in Education with Teaching Certification:** This program accepts students who hold baccalaureate degrees and, in 12 months, leads them to a master's degree and a teaching certificate.
- **Master of Arts in Technology in Education:** The courses in this degree program are almost entirely offered in a mixed-mode or online format for the convenience of students throughout our region. The program is intended

primarily for teachers who wish to maximize the use of classroom technology to increase student academic performance.

Beginning May 2007 the School of Education and Human Services began offering an additional format for the Technology in Education M.A. degree program. In this Global Program, students never actually have to set foot on campus: half their credits are earned online and half during two intensive summer residencies at the John Knox Center in Geneva, Switzerland. Click below for additional information regarding this exciting new program:

<http://globalprogram.umflint.edu>

- **NetPlus! MBA Program:** This innovative online/mix-mode program, which requires only three campus visits each semester, was listed in the October 15, 2001, *U.S. News & World Report* as one of the best online graduate programs in the United States, offering opportunity to specialize in one of five concentrations areas in Accounting, Finance, International Business, Lean Manufacturing and Organizational Leadership.

And recently, the School of Health Professions and Studies teamed up with the School of Management to offer a sixth **NetPlus! MBA Program** concentration in the area of Health Care Management.

- **Scholarship Competition Day Awards** - As a result of the second annual Scholarship Competition Day held on February 9 2008, a total of 43 students received four-year scholarships in the amount of \$1,500 per year; Twenty-six lap tops and one full ride scholarship were awarded. We were very pleased with this effort and look forward to this year's upcoming Scholarship Competition Day.
- **Graduate Program Enrollment Growth:** For the fourth consecutive year graduate enrollment at the University of Michigan-Flint has increased. Fall 2008 enrollment increased 4.5% and for the first time exceeded 1,100 (1,105) students.

The Higher Learning Commission of the North Central Association of Colleges and Schools is the regional accrediting body for the institutional accreditation at the University of Michigan-Flint. Our most recent comprehensive visit was in 1999 at which time we received re-accreditation for 10 years, which brings us to the 2009 reaccreditation project. For more information regarding the upcoming University of Michigan Higher Learning Commission Reaccreditation visit click on <http://www.umflint.edu/hlc/>

The University of Michigan – Flint looks forward to continuing its partnership with the State of Michigan to meet the educational needs of its students, the community and the State of Michigan.

Section I.---Vision and Mission Statement

In Spring 2004 University of Michigan-Flint's (then) Chancellor Juan E. Mestas announced the formation of a campus-wide committee charged with the responsibility to chart the strategic course of the University for the five year period, 2005-2010. Upon adoption of the strategic plan document and the vision and mission statement in October 2005, Chancellor Mestas noted that *"The University of Michigan-Flint campus implements its vision and mission in a wider context of growth and change. The strategic plan seeks to foster growth in enrollment and initiatives that support academic excellence and student achievement. Throughout the development process of this plan the Strategic Plan Committee (SPC) focused on creating a shared vision that will enhance an environment rich in faculty and staff commitment to students and the community it serves."*

As a result of this planning effort and involvement by many members of the University community and the public, the University's vision and mission statements were revised as follows:

Vision

Engaging Minds, Preparing Leaders...

Mission

The Flint campus of the University of Michigan is a community of diverse learners and scholars, where students from this region and beyond prepare for leadership, achievement, and service through interactive instruction in the arts, sciences, humanities, and professions. Our mission rests on three pillars: excellence in teaching, learning, and scholarship; student-

centeredness; and engaged citizenship. Our students become leaders in their fields, in their professions, and in their communities. Click <http://www.umflint.edu/resources/offices/chancellor/strplan.php> for the full text of the strategic plan.

A key goal outlined in the 2005-2010 strategic planning document included planned enrollment growth to 8,000 students by 2010. In aggressively pursuing this strategic imperative, Fall 2008 enrollment increased 6.8% to 7,260 full and part-time students, the most students ever to attend the University of Michigan-Flint.

Section II. ---Instructional Programming and Support for Community Activities

Philosophy *excellence in teaching, learning and scholarship; student-centeredness; and engaged citizenship.*

University of Michigan-Flint strives to achieve a supportive and nurturing campus climate where the individual is valued, creativity is rewarded, and teamwork and collaboration are evident throughout the learning environment. We are committed to providing a physical environment that enhances and supports the educational experience, and protects the safety and well being of the campus community.

At University of Michigan-Flint, the *student is the center of attention* and *teaching, learning and scholarship* is highly valued. Individual growth and intellectual development are encouraged through close and often informal association between faculty and students. This close relationship is reinforced by a learning environment that encourages small classes and frequent student faculty interactions. UM-Flint expects that administration, faculty, and staff will excel in their respective roles to provide our diverse student population the necessary guidance, support, and encouragement to develop and achieve their academic goals.

In addition to traditional academic activities for students, the University of Michigan Flint places great emphasis on *engaged citizenship*, one of three pillars that support the mission of the University. The University values outreach as a pragmatic and scholarly endeavor, one that creates useful results for communities, but also adds to knowledge in a scholarly manner. In recognition of this symbiotic relationship, the University and community engage in mutually beneficial partnerships. These partnerships are evident, in part, through applied research, service learning, co-sponsorship of events, and shared resources.

Competition

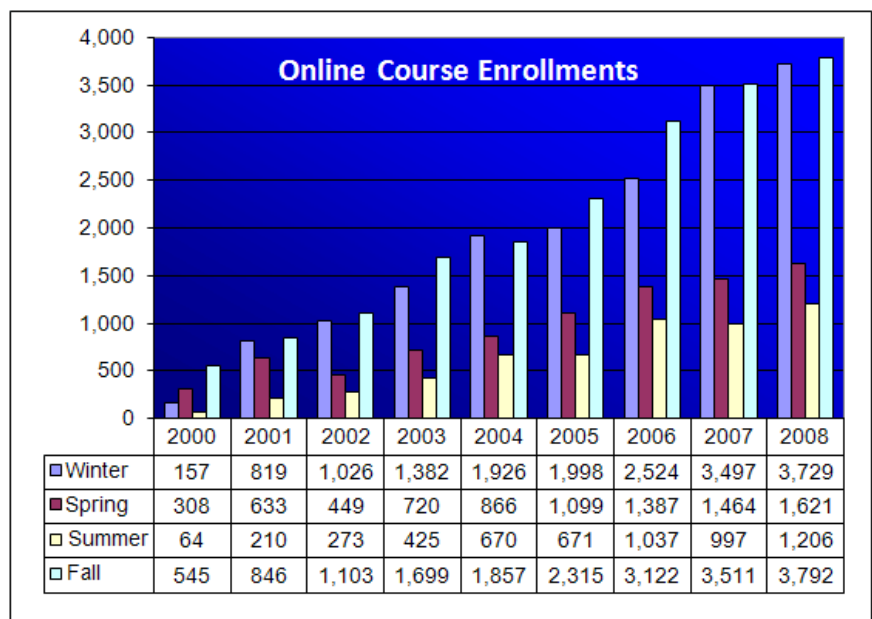
UM-Flint recognizes that it is located in an extremely competitive and active educational market: Genesee County and mid and southeast Michigan. Internet-based academic classes and programs offered by several private competitors add to the numerous academic options from which students can choose.

Extended Learning and Online Education

As a result of the 1999 UM-Flint Distance Learning Task Force report, the University created a pilot online learning program to meet growing student demand. From its initial enrollment with 157 students in the winter 2000 semester, the program has grown to its current record of 3,792 course enrollments for a single semester, with an additional 954 mixed-mode enrollments.

For the 2007-08 academic year there were:

- 9,858 course enrollments
- 390 online course sections
- 1,949 mixed mode enrollments
- 93 mixed-mode courses (courses that are mostly online with occasional



campus visits).

- 123 faculty teaching online.

At the end of fall 2008 semester, OEL will install the latest version of Blackboard (8.0), which has required additional investment in more powerful servers, and will expand the helpdesk support for students using Blackboard and learning technologies.

New Programs:

- The Office of Extended Learning (OEL) promotes development of fully online programs, and beginning winter 2009 semester, will devote resources to supporting two fully online doctoral programs – the Doctor of Nursing Practice and the Transitional Doctor of Physical Therapy.
- UM-Flint has developed a general studies, online Bachelor of Arts degree that is offered jointly with the University of Michigan-Dearborn.
- The Master of Arts in Education Technology-Global Studies program, launched last year by the University's Education Department, is at capacity and a second program is planned. The program requires bookend, three-week trips to Geneva, Switzerland, with the remainder of study conducted online.
- The completion courses for a Bachelor of Applied Science will be available this year, enabling students with technology or vocational associate degrees to complete their baccalaureate studies.

Expanding Programs: For the past few years, University of Michigan Flint has offered an RN-to-BSN (Registered Nurse to Bachelor of Science) degree program online, and mixed-mode Master of Business Administration and Master of Public Administration degrees. In addition, the core courses for the Bachelor of Business Administration program are available completely online.

The overall impact of online program development has been a broader reach to students geographically, scheduling flexibility and maximization of classroom availability.

The Office of Extended Learning in 2007-08 continued to fund the Return to Learn scholarship and recruitment program to assist students return to college after an absence of 12 months or more. This program has recruited about 250 new students since its inception in 2006. Return to Learn targets all learners who have "stopped out," as well as those who are in transition as a result of the decline of the auto industry.

To enhance opportunities for State of Michigan residents to obtain a University of Michigan degree, the University of Michigan Flint has also expanded its collaboration/articulation agreements:

- At the Lansing Community College University Center, UM-Flint offers a BS in Health Care Administration and an RN-to-BSN program. Both programs are offered in mixed mode format, requiring students to come to the LCC University Center no more than twice a month.
- At the St. Clair County Community College, UM-Flint offers a BA in Psychology and Bachelor of Business Administration on that campus, also mixed mode.

Program Offerings

The University of Michigan-Flint offers a variety of liberal arts, pre-professional and professional academic programs.

The College of Arts and Sciences (CAS) offers over 40 academic programs, which lead to degrees including the Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Bachelor of Science in Computer Information Systems (B.S.C.I.S.), Bachelor of Interdisciplinary Studies (B.I.S.), Bachelor of Applied Sciences (B.A.S.), Bachelor of Music Education (B.M.E.), and Bachelor of Fine Arts (B.F.A.). The College's newest undergraduate program is a B.A. in journalism. In conjunction with the Horace H. Rackham School of Graduate Studies at the University of Michigan, CAS offers the Master of Public

Administration (M.P.A.) and Master of Liberal Studies in American Culture (M.L.S.) degrees. In the past five years, CAS has more than doubled its number of graduate programs, and nearly quadrupled graduate enrollment. In addition to its Rackham programs it offers masters degrees in Biology, Computer Science and Computer information Systems, Social Sciences, English Language and Literature, has just initiated (Fall 2008) a BS/MS in Biochemistry, and has a doctorate in Clinical Psychology in development.

The School of Education and Human Services (SEHS) offers programs leading to Bachelor of Science in Education and the Bachelor of Arts degree in Social Work. Two different programs lead to the Master of Arts in Education degree: one program accepts students who already hold a teaching certificate; the other accepts students with a baccalaureate degree in a content area but no teaching certificate. In addition, programs are offered to prepare students for the State of Michigan certification in elementary and secondary teaching. In response to the needs of our community, the Education department has recently established two new concentrations within the Master of Arts in Education: Special Education and Technology Education. In addition, the Education department has formed a partnership with Westwood Heights School District that will allow for collaboration between the University and K-12 teachers and administrators. Click below for details regarding this exciting new partnership:

<http://www.umflint.edu/departments/sehs/westwood.php>

The School of Management offers six concentration programs, all leading to the Bachelor of Business Administration (B.B.A.) degree: General Business, Accounting, Finance, Marketing, Operations Management, and Organizational Behavior and Human Resources Management. The school also offers programs leading to the Master of Business Administration (M.B.A.) degree, and a joint B.B.A. /M.B.A. degree. In addition to the traditional MBA degree, a NetPlus! M.B.A. uses online course delivery and brings students to campus for several weekends. The October 15, 2001 issue of *U.S. News & World Report* listed the NetPlus! M.B.A. Program as one of the best online graduate programs in the United States.

The School of Health Professions and Studies (SHPS) offers undergraduate academic programs leading to the Bachelor of Science in Nursing, Radiation Therapy, Medical Technology, Health Education, Health Sciences, and Health Administration. Master of Science degrees in Anesthesia, Nursing, and Health Education are also offered. In conjunction with the Master of Public Administration program, the school offers a concentration in Health Care Administration. The School of Health Professions and Studies has teamed up with the School of Management to offer a **NetPlus! MBA Program** concentration in the area of Health Care Management. The Doctorate of Physical Therapy is now offered and has replaced the Master of Physical Therapy.

The University of Michigan-Flint also offers an *honors program* leading to honors degrees in 30 concentration areas. The Honors Scholar Program is unusual in that it offers students partial tuition support and requires that the student conduct research at an off-campus site (preferably abroad). The off-campus research is supported by a \$3,000 grant to each student. The honors program has not only contributed to the progress of these students, but has also enhanced the intellectual life of the University through its emphasis on academic achievement and research for undergraduates.

Degrees Awarded

During the 2007-2008 academic year the University of Michigan-Flint awarded 1,239 undergraduate degrees and 291 graduate degrees plus 33 DPT degrees compared to 917 undergraduate, 178 graduate, and 33 DPT degrees, respectively, the previous academic year.

Support for Community Activities

The University offers use of its facilities for a wide variety of community events and celebrations.

Events supported during the 2007-2008 school year in Recreation Center include: American Cancer Society/Relay for Life, Boy Scout Troup 111, Byron High School, Carter Middle School, Kuungana Drum & Dance Festival, Faith Baptist Church, GISD School District Training, Harbor Lights Christian School, Kiwanis TRY-Athlon, Linden High School Post Grad, Mt.Morris Central Elementary, New Directions Youth Group, Priority Children, Reach US Facilitators, Red Cross Water Safety Instructor class, Region 1-C AAU Basketball Tournament, US Probation Officers.

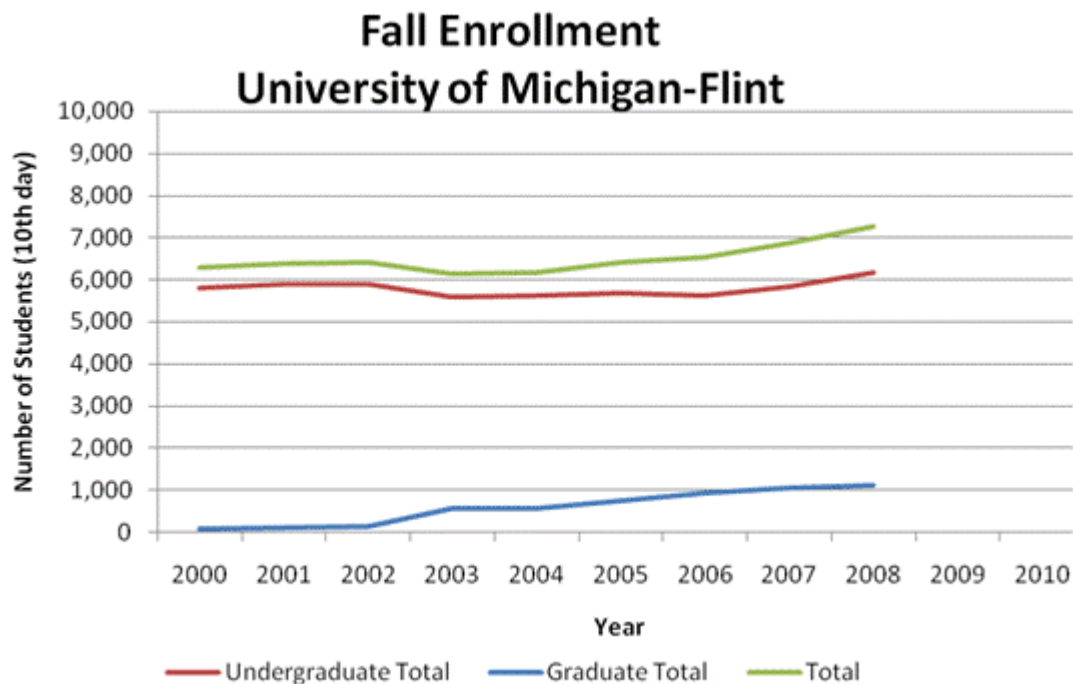
Events supported during the 2007-2008 school year in other University facilities included: Summer Reading Program, Choosing to Succeed Program, Summer Institute, Tunes at Noon, Challenge Program, Flint Area Writers Meetings, Transition Programs, Community Plunge, Crim Road Race Activities (including CrimFit/ Crim Fitness Foundation), American Cancer Society, Humane Society, New Direction Youth Group, Connections 101, American Democracy Project, ISP Program, Red Cross Blood Drives, AIDS Walk, Breast Cancer Awareness Activities, Halloween Family Fun Night, Family Math Night, Veterans Day Program, KCP Program, Hunger Banquet, Empty Bowls Event, High School Challenge, Reach 2010, MLK Day Activities, Math Field Day, Keep Genesee County Beautiful Conference, Youth Leadership Institute, Student Leadership Conference, Cesar Chavez Program, Michigan Trails and Greenway Project, Challenge Program, WEC Family Fun Night, Community Literacy Workshop, Youth Author's Conference, Youth Enrichment Program, Community Walk, the Read-A-Thon, WOW Program, Bone Marrow Drive, Mayoral Debate Watch, Society for Photographic Education Conference, Greater Flint Education Consortium, World AIDS Day Remembrance, WEC Family Movie Night, Financial Aid Night, Fair Housing Training, Women's Health Fair, Youth Leadership – Flint Community Schools, High School Programming Contest, and Super Science Friday.

Section III. --- Staffing, Enrollment, Student Profile and Class Size and Alumni

Staffing

In Fall 2007, UM-Flint employed 883 faculty and staff including 229 full-time faculty, 211 part-time faculty, 371 full-time staff and 72 part-time staff.

Enrollment



In Fall 2003, the high unemployment rate, population shifts and other economic conditions in our service area contributed to a 5% enrollment decline at the undergraduate level. Total enrollment in Fall 2004 increased by .59% because of a significant increase in graduate student enrollment. Fall 2005, the University experienced a 4% increase in enrollment, due in large part to a 32% increase in graduate program enrollment.

For Fall 2006, the University experienced a 1.6% increase in enrollment, again due to a 23% increase in graduate program enrollment. Following an intensive multi-year review and implementation of a strategic undergraduate enrollment plan, Fall 2007 enrollment was up 5.5%, with undergraduate enrollment up 4.0% and graduate programs 14.2%. This Fall 2008

enrollment jumped 6.8% overall, with undergraduate enrollment up 7.1% including the largest freshman class ever, and graduate programs 4.5%.

Today, planned growth to 8,000 students by 2010 is the University's number one strategic priority while continuing to further enhance academic excellence.

As one of several strategies to increase student enrollment the University began offering an on-campus residential option for 300+ students this past Fall 2008. We believe that student housing will have a beneficial impact on both the campus and downtown Flint's economic re-development. Please refer to Section V, Planned or Considered Major Projects, Subsection 2, for more details regarding student housing.

Student Profile and Class Size

In Fall 2008, total full and part-time enrollment numbered 7,260 (6,155 undergraduate and 1,105 graduate). Over sixty-two percent of UM-Flint students are female. In Fall 2008, 19% of all students, graduate and undergraduate, self-identified as minorities, including African Americans (13.3%), Hispanics (2.6%), Asians (2.4%), Native Americans (.7%), and Multi-Racial (1.9%). Seventy percent of all UM-Flint students self-identified as White. Over 9% of all students declined to self-identify.

In Fall 2007 the average undergraduate class size was 21 students; graduate class size almost 16, thereby allowing UM-Flint students a more personalized education.

Alumni

Since 1956, the University of Michigan-Flint has graduated almost 30,000 students. The great majority of these alumni (about 80 percent) have chosen to continue to live, work, and pay taxes in the State of Michigan. Around 17,000 University of Michigan-Flint graduates reside in Genesee and the contiguous six counties.

Section IV. ---Facility Assessment, Deferred Maintenance, Energy Conservation and Sustainability, Classroom Utilization and Debt

General

The University is located in the heart of downtown Flint and has a positive physical presence and visual appearance in the community. "UM-Flint sets a standard for the City of Flint in maintaining its space; it is a bright spot in downtown Flint" (Source: 1999 Community discussion group); and "you know, the University of Michigan-Flint is pound-for-pound one of the prettiest campuses I've seen." (Source: Andrew Heller Column, the Flint Journal, October 2001). The campus presents an environment characterized by an extremely attractive appearance, well maintained grounds, newer campus buildings, and the Flint River running through its center. UM-Flint has been fortunate in the support it has received from the State of Michigan, particularly for capital projects. In addition, the campus has been successful in securing funds through individual contributions and private organizations during several capital campaign efforts. The C. S. Mott Foundation has been a significant benefactor to the University over the years, providing support for land acquisition and funding for capital projects and various consulting reports. With the strong support of the City of Flint and the C.S. Mott Foundation, the University has been able to expand the campus and its facilities.

In response to a citation noted by the 1990 North Central Accreditation team concerning a serious lack of space for academic and administrative functions, the University acquired a 25-acre parcel north of the Flint River in 1994. In February 1999, the University acquired a two-acre site called Northbank Center, comprising three buildings and a parking ramp (189,375 gross square feet of space and 265 parking spaces, respectively).

In November 1999 construction began on the 177,400 sq. ft. William S. White Building, funded in large part through the State Capital Outlay process and the C. S. Mott Foundation. In late February of 2002, the University of Michigan-Flint accepted possession of the William S. White Building. This mix-use building houses the School of Health Professions and Studies, School of Management, Early Childhood Development and the Urban Health and Wellness Centers, Department of Communication and Visual Arts, Information Technology Services, and WFUM television. WFUM also maintains

WUOM radio's Goodrich tower and FM transmitter, which acts as a radio repeater for WUOM out of Ann Arbor. Relocation of the Physical Therapy program from the Lapeer Street Annex (LSA) to the White Building allowed the University to consolidate on-campus academic programming and sell the no longer needed LSA Building.

2008 Facility Condition Index (FCI = 10.9)

In attempting to provide a context for the approximate condition of facilities on the University of Michigan-Flint Campus we have applied the Facility Condition Index (FCI), a model which was presented at a NACUBO Seminar titled: *Financial Planning in an Institutional Setting*. In this model, $FCI = ADM/CRV * 100$, where ADM=Accumulated Deferred Maintenance and CRV=Current Replacement Value. Using this model, UM-Flint's 2008 FCI is $10.95 = (33.0/301.3 * 100)$. When this number, 10.95, is compared with the Facility Condition Index's (FCI's) ratings: GOOD <5; FAIR 5-15; and POOR >15, a 10.95 rating indicates that the UM-Flint facilities are in FAIR condition.

Professionally Developed Facilities Assessment

To date, all facility reviews regarding deferred maintenance have been conducted internally by Facilities Management personnel, with the exception of the Northbank Center and two recently completed external facility condition reports--- French Hall (FH) and William R. Murchie Science Laboratory Building (MSLB). These latter two facility condition reports were prepared by DSA Architects in conjunction with our partially funded FH-MSLB capital outlay project. It is the desire of the Facilities Management staff to obtain external second opinion facility condition reports for all facility structures as funds become available. It is estimated that an additional \$588,000 (50 cents x 1,174,718 sq.ft.) will be required to conduct the remaining external facility condition reviews.

The University of Michigan-Flint Riverfront campus consists of 73.38 acres: 43.14 acres south of the Flint River and 30.24 acres north of the river. In addition, the University owns one off campus 3.67 acre parcel where the chancellor resides. This residence was given to the university in 1973 by the Ross family and is referred to as The Ross House. The 2008 replacement value for University buildings and parking structures is \$301,284,592, accounting for 1.9 million gross square feet contained within 14 buildings, four parking structures and two surface lots. The newest of these buildings is the First Street Residence Hall which was completed and occupied by 310 students in August 2008. All campus facilities are described in Table 1 by building/structure, year occupied, gross square footage, replacement value, and building type. The campus maintains 4.58 miles of University roads. It should be noted that additional parking space will be required as student enroll approaches 8,000 students. The specific need for additional on-campus parking will be determined by the increase in on-campus enrollment compared to online, mixed-mode, and off-campus enrollment growth, as well as by the times on-campus courses are offered.

Please refer to Table I on the next page for a list of campus buildings and parking structures. Also included is each building's primary usage and replacement value. Note, the university's 100,000+ square foot student housing resident hall has been added to the list this year following its Fall 2008 opening.

Table 1: Replacement Value of UM-Flint Buildings and Parking Structures

<u>Building / Structure</u>	<u>Year Occupied</u>	<u>Gross Square Feet</u>	<u>Replacement Value</u>	<u>Building Type</u>
Ross House	1971	4,160	1,132,820	Admin & Support
Hubbard Building	1977	24,634	4,900,212	Admin & Support
David M. French Hall	1977	176,056	30,470,045	Class/Faculty Office
Central Energy Plant	1978	26,586	12,284,718	Admin & Support
Harrison Street Parking Ramp	1979	121,359	8,384,541	Parking Structure
Harding Mott University Center	1979	114,284	20,111,561	Admin & Support
WFUM Transmitter Building	1979	1,688	690,753	Service
Recreation & Fitness Center	1982	81,923	16,694,525	Rec Sports Bldg
William R. Murchie Science Building	1988	193,420	43,123,328	Class/Faculty Office
Mill Street Parking Ramp	1988	302,100	19,895,989	Parking Structure
University Pavilion	1991	86,532	4,495,679	Admin & Support
University Pavilion Parking Ramp	1991	121,265	8,516,209	Parking Structure
University Pavilion Annex	1991	3,037	1,093,670	Teach, Research
Frances Willson Thompson Library	1994	109,750	27,979,181	Library
Northbank Center	1999	189,375	38,463,469	Admin & Support
Northbank Center Parking Ramp	1999	71,280	5,259,589	Parking Structure
William S. White	2002	177,400	43,588,303	Class/Faculty Office
First Street Residence Hall	2008	<u>101,481</u>	<u>14,200,000</u>	Residential
		1,906,330	301,284,592	

Source: UM-F Department of Facilities Management, October 2008

A summary of the University's Capital Renewal/Deferred Maintenance Plan in Table 2, developed by the UM-Flint Department of Facilities Management, indicates that \$5,948,500 must be invested to properly maintain campus buildings, property, and roads, including \$2,118,600 which has been identified as “critical” repairs and maintenance. These “critical” items require immediately attention and include aging boilers, air handler units, water intrusion, fire/safety systems including emergency public address systems, emergency phones and lighting, and environmental related issues. In addition, the plan calls for an investment of \$14,032,000 over the next five years (BY2010-BY2014) to properly maintain existing buildings and property, and keep utility systems and infrastructure such as roads, walkways and grounds safe and in good working order. Finally, we anticipate that another \$13,100,900 will be required to address BY2015-BY2019 capital renewal projects. In total, \$33,081,400 (in today’s dollars) will be required between BY2009 and BY2019 to properly address required deferred maintenance/capital renewal, infrastructure and repair related issues on the UM-Flint campus. These figures do not reflect the newly built and occupied First Street Residence Hall.

Table 2: Deferred Maintenance/Capital Renewal Summary

Building / Area	2009 Critical Needs	2009 Current Needs	2010-2014	2015-2019	Totals
David M. French Hall	\$205,000	\$120,000	\$239,000	\$404,000	\$968,000
Harding Mott University Center	\$162,500	\$153,000	\$763,000	\$589,500	\$1,668,000
Murchie Science Building	\$93,000	\$876,000	\$1,928,000	\$711,000	\$3,608,000
University Pavilion	\$138,500	\$250,000	\$483,000	\$1,165,000	\$2,036,500
Pavilion Annex	\$0	\$17,000	\$43,000	\$166,000	\$226,000
Thompson Library	\$87,500	\$15,000	\$329,000	\$505,000	\$936,500
Recreation Center	\$20,500	\$264,000	\$349,000	\$559,000	\$1,192,500
Hubbard Building	\$21,500	\$255,000	\$126,000	\$159,500	\$562,000
Central Energy Plant	\$112,500	\$43,000	\$2,366,000	\$1,185,000	\$3,706,500
Ross House	\$42,000	\$11,000	\$153,000	\$92,000	\$298,000
Northbank Center	\$268,000	\$1,318,000	\$4,505,000	\$4,250,000	\$10,341,000
William S. White	\$10,000	\$168,500	\$393,000	\$315,000	\$886,500
Harrison Street Parking Structure	\$225,600	\$39,000	\$610,000	\$1,035,000	\$1,909,600
Mill Street Parking Structure	\$142,000	\$30,400	\$681,000	\$778,000	\$1,631,400
University Pavilion Parking Structure	\$103,000	\$10,000	\$254,000	\$268,900	\$635,900
Flat Parking Lots: A, E, G, P, Q, R, S	\$20,000	\$225,000	\$230,000	\$643,000	\$1,118,000
First Street Residence Hall	\$65,000	\$0	TBD	TBD	\$65,000
Exterior Riverfront Grounds and Facilities	\$402,000	\$35,000	\$580,000	\$275,000	\$1,292,000
	\$2,118,600	\$3,829,900	\$14,032,000	\$13,100,900	\$33,081,400

Source: UM-F Department of Facilities Management, October 2008

Deferred Maintenance Review

The previous deferred maintenance plan for fiscal year 2003-04 provided \$30,000 for carpet replacement and painting of classrooms, \$50,000 for installation of electrical supply system capacitors following an energy audit review, and \$20,000 toward life-safety measures by installing a de-icer system on some campus skywalks. Emergency elevator repairs were required in the Murchie Science Laboratory Building totaling \$70,000.

Completed in late summer 2004 was the replacement of the Steven Street Bridge for the purpose of connecting the north and south riverfront biking and hiking trails. This joint project between the City of Flint and the University was funded by a Michigan Department of Transportation Grant; the University provided matching funds. This project is an excellent example of State, City and University collaboration, where the outcome benefited residences and students throughout the region. It was a win-win situation for both the City of Flint and the University of Michigan-Flint!

During 2004-05, the University expended \$350,000 on a complete overhaul of the MSB central elevator; \$200,000 to replace a chiller in the Northbank Center; \$100,000 to install energy efficient lighting in our French Hall classroom building; and, \$30,000 for stop-gap action on water intrusion issues at our student University Center. In addition, the University replaced central energy plant's RM1 chiller at a cost of \$250,000 following repeated failures.

In 2005-06, the University completed some critical deferred maintenance projects, including removal, remediation and replacement of the central energy plant's underground storage tanks (\$785,000); several water intrusion projects (\$110,000); and carpet replacement (\$16,000).

In looking to the future, the University of Michigan- Flint is faced with five structures that will likely need roof replacements within the next three to six years, and include French Hall, Central Energy Plant, University Center, Recreation Center, and Murchie Science Laboratory Building. The age of these structures range from 1977 through 1988, respectively and the projected roofing replacement costs are estimated to be approximately \$1.7 to \$2.0 million. Currently, the University is conducting an engineering roof survey to determine the condition and expected life span of present building roofs and also, to determine a prioritized roof replacement schedule.

Campus safety and campus-wide communications has always been a high priority for this campus and the University is aggressively upgrading the public address systems in each building to help ensure a safe and informed environment. The estimated cost for these upgrades is \$75,000.

In the narrative below several of the 2007-08 completed projects and projects currently in progress are outlined.

Completed Utility System and Facility Condition Reviews by Building

Central Energy Plant (CEP) & Distribution System

- Chiller System – RM 1 was replaced in 2004 with a high efficiency chiller. RM-2, installed in 2001 will need to be overhauled per manufacturer's recommendation within the next year; this cost will be approximately \$45,000. In August of 2008 Facilities Management contracted the services of an experienced engineering firm to complete an efficiency study on the boilers and chillers, as mentioned in the previous years' outline. Once the results of this study are completed the results will deliver specific data on the condition, the performance capabilities and load capacities of our boiler and chiller systems. Subsequently, a recommendation will be made at that time regarding the need to overhaul RM-2 and the possible installation of variable frequency drives (VFD) on the chilled water loop and cooling towers.
- RM-3 the absorption chiller has failed. This unit operates on steam (from the natural gas boilers); the repairs are costly; and currently, there are less than five of these units operating in the entire state. Therefore, we proposed to remove this unit as part of our cost avoidance and energy conservation strategy. The removal of the RM-3 absorption chiller was completed in July 2008. This not only saved energy and countless repair dollars it also provided much needed space in the CEP for future growth. Also, the chilled water loop and cooling tower pumps do not have VDFs. Because of this, the system, overall is not efficient, lacks controllability, and uses more energy than what is actually required.

The entire chilled water system requires an engineering study to determine where we are, where we are going, and how we will get their based upon current needs and future campus growth.

- Boiler System – Although the aging boilers have been well maintained the cost of maintaining them is increasing. The overhaul of Boiler B1-A has been completed at a cost of \$90,000. This included controls, tubes, refractory, and a new combustion chamber. The overhaul of Boiler B1-C is currently underway and the cost will be similar to B1-A, \$90,000. B1-C was completed in July 2007 and all controls have been updated. Additionally, during the 2006-07 FY all boilers received control updates at a cost of \$25,000, which will make maintenance work easier going forward. Boiler B1 was removed August 2008.

Considering the reliability of these four aging boilers, and increased steam demands for the 2008 opening of the new residence hall, boiler B1-B will require overhauling in 2009. Boiler B1-B has been re-tubed and received new refractory lining. This work was completed in September 2008 per our planned maintenance schedule. The cost for this work was \$45,000. An additional concern is that three of the four boilers exhaust to one common stack. This is not an industry standard or a manufacturer's recommendation, since boiler efficiency and

performance is compromised. The retrofit to make this correction will be extremely costly. As mentioned above, the data from the engineering study will deliver specific data on the condition, the performance capabilities and load capacities of our boilers and a recommendation will be made at that time regarding boiler efficiency, common stacks and other possible energy savings and efficiency modifications.

Given the University's goal for continued campus growth, and a commitment to energy conservation and sustainability, a proposal for a new high-efficiency boiler (by 2011) is being considered. Under this scenario, a larger more efficient boiler would carry the steam load, while the four smaller boilers would provide redundancy and be available during reduced demand periods. Thereby, allowing the larger boiler to be taken off-line. Additionally, the new 100,000+ square foot residence hall is a new heating and cooling load for the existing CEP systems. Future growth will make the addition of a boiler a necessity. Current estimates for installation of a high efficiency 500 horse power boiler are approximately \$600,000. The University will need to address this issue regardless if future load is added or not since three of four existing boilers are at, or beyond, life expectancy. Additionally, they lack the efficiency and performance of current high efficiency steam boilers. During the last year the inoperable gas economizer on Boiler B-1D was repaired allowing for a 15% reduction of gas usage by that boiler.

- Control Systems: Generator / Pumps / Heat Exchangers / Metering – Completed in FY08 fiscal year were upgrades which expanded capabilities to the plant's critical Energy Management System (Johnson Control) at a cost of \$8,000. These upgraded controls allowed for more efficient boiler operations and resulted in reduced natural gas usage.

The emergency generator for the CEP is aging and replacement should be considered within the next two to five years; cost and installation is estimated at \$300,000. Heat exchangers for domestic water and for the cooling tower are also aging; replacement over the next five years will be anticipated at \$50,000. In FY09 a deaerator pump bypass will be installed as preventative maintenance measure since the deaerator and condensate pumps are aging. Considerations for replacing these pumps will need to be addressed in the next two to three years; anticipated cost \$150,000.

Further considerations at this time include replacement electrical, steam, and water metering devices. Accurate utility monitoring is the best measurement for energy usage and cost analysis. Also, replacement costs of the aging deaerator system and steam header piping. Costs for the piping are expected to be \$40,000, and deaerator replacement will not be less than \$50,000. As mentioned above the controls for the chilled water loop should include VFD control.

- Primary Electrical – Very little preventive and deferred maintenance has been done to the high voltage system, substations, or HV cables on campus. Consequently the University is developing a HV maintenance plan. Currently the plan is being implemented in phases as follows:

Phase I - The main campus substation located in the CEP is the feed for two main circuits which feed subsequent substations in each structure on the south side of the campus. They include French Hall, The University Center, The Recreation Center, Murchie Science Laboratory Building, Thompson Library, Mill St. Parking Deck, and Hubbard Building. The University secured a bid for FY 07-08, and is in the process of scheduling preventative maintenance and testing for the CEP primary and the substations located in the buildings listed above; phase I, cost \$50,000. Phase one of the University's high voltage maintenance plan was successfully completed in June 2008 at a cost of \$45,000. Water intrusion was discovered in a high voltage transformer in the University Center substation and is currently being addressed.

Phase II - During FY 08-09 the remaining campus buildings will be tested, ideally in late spring 2009. These buildings are on the north side of the river and include – University Pavilion, William S White Building, and Northbank Center (both substations). The cost estimate is \$45,000 for Phase II.

Phase III- The third year of the plan calls for the testing of the cables; cost \$35,000. The three year plan then repeats. The advantage of this plan will allow for planned and controlled costs, while keeping the equipment operating optimally. Additionally, as conditions are diagnosed, planned repairs can be scheduled.

- Utility Distribution System (UDS) - The UDS tunnel and duct bank system for delivery of heating, cooling, and electrical to most of the buildings on campus south of the river are generally in good condition although some water intrusion has occurred into the tunnel system. Cable testing and inspection will be required to fully assess any water intrusion damage. Several repairs to steam traps and valves have been completed throughout the FY08. As part of the University's commitment to energy conservation and sustainability, the new residence hall's heating and cooling needs are provided by the CEP. This was accomplished by constructing short connector tunnel between the residence hall and the main utility distribution tunnel. All other utilities, water, and IT services are distributed via the connector tunnel.

French Hall

- Electrical – As part of the Capital Outlay package the outdated Federal Pacific breakers, switches and motor control centers are being replaced (At this time the electrical upgrades are being bid and awaiting State approval as part of the Capital Outlay). Additionally, the failing and undersized emergency generators will be replaced, if approved as part of the Capital Outlay. Lighting has been updated throughout to T-8, electronic ballasts on all floors. Update: All of these items were completed as part of the capital outlay project including the new generator and motor control centers. The generator was tested October 2008.
- Ventilation - Replacement of supply / return air fans with VFD are part of the Capital Outlay project and will correct heating and cooling concerns on the 2nd and 3rd floors. These two floors will have new duct work, new insulation and new VAV controls. However, heating and cooling issues remain on the 1st, 4th, and 5th floors. Duct insulation on these floors has deteriorated and will need to be replaced in order to maintain correct air flow and desired comfort levels. Additionally, new VAV controls on these floors are needed and should include the Theatre wing of French Hall. The Theatre is in need of replacement fans, heating coils, valves, dampers, and actuators, but is not part of the FH Capital Outlay project. For safety and potential energy savings CO-2 sensors need to be installed on the ventilation system. CO-2 sensors are currently being installed.
- Controls – The building management system has been upgraded allowing for optimum systems control and timing. This is an ongoing process in order to keep current with expansion. Capital Outlay has also updated fire protection control and system for renovated floors. New fire control panel installed July 2008.
- Plumbing – The Capital Outlay includes updated plumbing for 2nd & 3rd floors. However, the cast piping on the others floors (1st, 4th, and 5th) is cracked and will need to be replaced. The remaining supply piping is cooper and remains adequate. Funding for restroom upgrades for 1st, 4th, and 5th floors has been approved; these upgrades will include waterless urinals, automatic flush toilets, tile repair, and sink and faucet upgrades.
- Elevator cars are being replaced as part of the Capital Outlay project. Elevator installation completed June 2008.
- The fourth and fifth floors of French Hall need carpet replacement, laminate and vinyl wall covering replacement. Additionally many items in the Theatre were not addressed in the capital outlay including the replacement of heating valves and coils, and repair to the duct insulation.

Harding Mott University Center

- Electrical – Service is adequate, however water intrusion into substation is critical; to be repaired in FY08 – estimate \$18,000. Water intrusion presently being addressed, October 2008. Repairs will be completed prior to FY10. This year pool lighting was added to building lighting control system. Energy savings estimated to be annual \$12,000+. Lighting upgrades, however, are needed throughout the rest of the building and should included LED exit signs.
- Plumbing – This year \$18,000 of piping repair and replacement was completed on supply and waste piping. As food vending operations increase there will need to be further modifications and repairs.
- In August 2008 the University Center received a major renovation to the kitchen and food service area. This renovation resulted in several upgrades to the fire suppression system, lighting, and the addition of new food preparation equipment. This equipment is energy efficient compared to the aged equipment which it replaced. Additional modifications and repairs were made to the plumbing and to electrical service to accommodate the newly remodeled kitchen and food service area.

- Pool - Pool discharge project completed allowing for pool discharge water routed to sanitary sewer not storm; \$25,000. Future pool consideration – replace current filter with sand filter, cost estimate \$60,000.
- Structural – Sloped wall with window continues to be problematic with water intrusion. Currently in process of receiving bids to correct this condition, estimate for repair at \$12,000. Additionally, windows continue to leak; last year \$6,000 was paid to re-seal three windows. This will be an on-going expense until an architectural solution is developed. Sloped wall repaired and resealed; cost \$6,000. This is an anticipated maintenance cost since this sloped wall needs to be resealed every two to three years.
- Ventilation – This year the university will help reduce energy costs by placing CO-2 monitors on return air; possible reduction of excess intake means less reheat.
- Currently VFD's are being installed on air handlers. The VFD's will be tied into the CO-2 devices for further air quality control and savings in energy costs.
- UCEN requires a fire panel upgrade; currently points are not programmable and this will be a challenge since installing a point programmable system will involve extensive electrical work. The costs are estimated to be in excess of \$120,000.

Recreation and Fitness Center

- Ventilation – Heating and cooling are provided through the CEP, however the building is not air conditioned and becomes very warm in the summer months. Additionally the controls on the relief air damper needs to be replaced in order to help maintain a more equalized pressure in the building. Future considerations for the Recreation Center should include a feasibility study for adding AC, including the addition of ceiling fans to improve air circulation and energy conservation. Relief dampers repaired spring of 2008.
- Electrical – Lighting for gym is low and inefficient. Additionally, the lighting throughout the structure is not adequate or energy efficient. The \$96,000 lighting project was completed: 400 watt inefficient lights located in the gym were replaced with efficiency lamps at substantially lower KW which resulted in substantially less heat generation. In addition, the entire Rec Center with the exception of the locker rooms was re-lamped and retrofitted with high efficiency lower wattage lighting.
- Plumbing – Underground piping and drainage systems has been compromised by ground water intrusion. This piping will need to be replaced and rerouted. Expected costs will exceed \$150,000. The entire building is at a low elevation and water intrusion continues to be an ongoing issue. Sump pumps and low volume water pumps must be maintained to sustain a dry building on the lower level. This continues to be a challenge.
- Locker Rooms – Both the men's and women's locker rooms are out dated and in need of remodeling. This would include low flow showers, toilets and urinals, new tile, lockers and benches as well as energy efficient lighting. Current cost estimate \$200,000.

Murchie Science Laboratory Building

- Electrical - Substation requires testing as discussed in earlier CEP section. The building needs to be re-lamped with T-8's electronic ballast. Currently there are T-12's throughout the building which will be obsolete within the next five years. Lighting upgrade expected costs \$85,000.
- Plumbing – Majority of the piping is glass pipe and in good shape. Fixtures have been replaced and updated as needed.
- Ventilation – Fume hoods will need upgraded controls and maintenance this cost is expected to be \$200,000, possibly more. Of greater concern is the lack of reheat coils at the west end of the building. This condition allows the west end to get very cold in the winter while the east end remains warm. This year insulation was added to the west end damper chase way in order to save energy and help maintain building temperature. Additionally the addition of VFD's on the air dampers will allow for greater control and savings in energy costs. The VFD installation should be completed by year-end.
- Murchie is also the building which is home to many computer science labs and servers rooms. Currently we are at cooling capacity for these areas. Future expansion of these technologies will require additional AC units and upgraded pump and delivery systems in order to meet cooling demands. Cost estimate \$350,000. Overall, this building's heating, cooling, and building insulation systems are of great concern to the University and will require future study and analysis to plan for future IT and scientific equipment and server needs, and to avoid costly repairs.

- Elevators – An elevator is needed in the west wing of the building based upon student, faculty and staff usage and internal traffic patterns. In addition, it would allow person with disabilities to move about the building with greater ease, and in a more customer friendly manner.

Northbank Center

- Elevators – This year an elevator assessment was done by the University elevator contractor. The condition of the Northbank Centers 40+ year old elevators is that they will soon need to be replaced. The cost estimate for the North building (13 story building) is \$1,000,000. The South building elevators are equally in need of replacement; cost \$300,000.
- Electrical – The substation in the South building is obsolete, unreliable, and not in code compliance. The substation should be upgraded. The University has been pricing replacement breakers, current cost estimate is \$50,000; this is still a pending figure. Additionally the South building in the near future will need a new cooling tower and two roof top AC/heating units - \$50,000. The substation is currently being renovated and will be complete by year end 2008. The cooling tower removal is in project scope and should be completed by the summer of 2009. These improvements do not include replacement of any piping or wiring internal to the building.
- Water Intrusion – Currently in the North building mechanical room, repair cost \$21,000. Water intrusion and subsequent repairs were completed in 2008.
- Structural repair to north building, roof level will be needed to sustain the integrity of the high-rise and the safety of those below. Costs are approximately \$20,000 and work will be completed in 2008.

Parking Decks – Mill Deck, University Pavilion, Harrison Deck, Northbank Center

The University currently owns three parking decks, entirely, (Mill, Harrison, and Northbank) and one-third of one deck (University Pavilion). The Harrison deck was built in the mid 60's and transferred from the City of Flint to the University in 1979; it is the oldest parking structure on campus. The Mill Deck, built in 1988, is the newest. Each deck has been, or is currently being, assessed for structural repairs as well as considerations for lighting, fire safety, and overall condition. It is important to note that the structural repairs and maintenance for each deck need to be done, to various degrees, each year. However, at a minimum the University will need to spend approximately 350,000 – 500,000 each year to adequately and safely maintain these structures.

- Northbank Center Parking Deck – Partial tendon excavation and repair in addition to structural repairs and sealants, concrete repairs, and joint repairs are critical for FY09. The University sought expertise from a professional engineering firm to determine cost and urgency; estimated critical repairs for FY09 \$125,000.
- Mill Street Deck – Current critical repairs include full and partial depth concrete repairs in addition to correcting water intrusion and replacement of emergency and stairwell lighting. These critical repairs total approximately \$145,000. Over the next five years the estimated costs will be \$650,000.
- Harrison Street Deck – Extensive tendon repair and excavation completed in 2008. Sealant top coating was applied to one-third of the deck and stairwell repairs, striping, exterior and interior painting were also completed. In 2009 – 2010 the University will need to continue the excavation and repair of structural tendons. This is critical given the age of this ramp, 40 years. Current critical costs are \$75,000 while the five year projection is \$610,000.
- University Pavilion – Co-owned with the State of Michigan, the University presently owns one-third of the ramp. This ramp is in dire need of fire safety upgrades as well as lighting; both systems are failing and outdated. Consequently, the University will begin negotiations with the State in order to address the most critical issues. The lighting and fire protection will escalate costs for 2009 -2010 and could exceed \$100,000; however projected annual costs for the University per year would be \$60,000.

Energy, Resource Conservation, Sustainability and the Environment

The University of Michigan in Flint has long been an advocate for the environment and an energy conservationist, as demonstrated in previous capital outlay plan updates. More recently, the University has broadened its approach and aggressively sought strategic partners, such as the State of Michigan, to enhance its efforts to protect and conserve precious resources, energy and the environment.

In 2006, the Chancellor established the Environmental Stewardship Committee (ESC) bringing campus-wide attention to conserving resources through sustainable initiatives. This proactive approach included reduction in energy use, water use/discharge/consumption, alternative & renewable energy and looked at ways to expand the University's recycling program. The ESC represented a cross section of students, faculty and staff charged with reviewing initiatives that improved the campus environment while creating a "greener" campus over time. All approved sustainable initiatives had performance assessments establishing payback, measures and metrics reporting both cost and environmental improvements. Today, the ESC Committee has evolved into a cross-functional team with representatives from ITS, FM, EHS, purchasing and various academic disciplines, and is vigorously pursuing sustainable resource conservation initiatives, cost reduction/containment, and operational efficiency strategies. However, on a day-to-day basis, Facility Management staff take the lead for identifying, defining, and managing energy reduction projects and seeking sustainable solutions for the management of existing systems by engaging in new technologies, whenever possible, to conserve natural resources and reduce energy usage.

Upgrades in our energy management system have allowed the campus to reduce electrical consumption by 5% (1/M kilowatts), control "in advance" critical peak loads and improve further upon power factors at various campus building locations. Partnering with us in this area, has been CMS Energy (Consumers Power) who also introduced the campus to a sustainable renewable energy program using biomass & wind power resources. The campus has agreed to use 3.5% of renewable energy expanding this to 10% by 2008. In addition, the following cost saving/conservation initiatives have been completed or are under current construction: waterless urinals in French Hall upgrade (lower water consumption), and re-fixturing lighting in University parking ramps. To date the Mill Street deck has been re-fixtured with T- 8 lighting, electronic ballast. The remaining parking decks and all University buildings are currently being evaluated by an independent lighting consultant who will evaluate, quote and recommend a strategic campus wide lighting program. A test portion of the University Pavilion Ramp will be re-lamped with new fixtures designed specifically for illuminating parking decks. Once tested and approved it is the hope of the University to partner with the State and completely re-lamp this structure. Projected pay-back in energy saved is less than five years. Additionally, upgrading our emergency lighting, including exit lighting and signage campus wide to LED technology, will minimize energy use, reduce maintenance cost and increase the reliability of code required safety lighting.

The University has also purchased an infra-red scanner to detect energy loss. This scanner will be used by the maintenance staff not only to detect heat loss, but to locate and repair costly steam leaks, and potentially dangerous thermal overload conditions in electrical systems.

The French Hall elevator modernization included three (3) new energy efficient elevators with energy smart controls and a 5% bid preference to EnergyStar equipment providers beginning immediately.

The University has been making every effort to maintain and upgrade its four aging boilers. To date there has been a completed overhaul of the oldest (31 years) operational boiler. Currently a second boiler is undergoing a complete overhaul and all four boilers have had control updates which has allowed for more efficient operation. In October 2008 the last of the four boilers was re-lined and re-tubed. All boiler controls have been updated and with these improvements there has been a reduction in natural gas consumption. This is reflected in the daily gas readings which have decreased during peak heating season due to better control and maintenance. Additionally, repairs were made to an existing gas economizer allowing for a 15% gas reduction on one of the four boilers. Plans for additional economizers and boiler stack modifications are also being studied and quoted in order to optimize efficiency and reduce utility costs. Rising maintenance costs dictate these pro-active measures while reducing reactive maintenance costs. Managing our resources includes planning strategically for current and future steam generating demands, and providing uninterrupted service to

our students, faculty and staff. At this time, Consumers Energy, the electrical vendor the University of Michigan Flint has given us notice that electrical peak demand rates will be increased in the upcoming year.

In addition to these actions, other strategies to reduce campus costs include our continued involvement with the State of Michigan/University joint leveraging of aggregated gas and electric commodities. For example, a new 3 year agreement (2006-2009) to purchase electricity provided a 3.5% reduction off CMS Energy tariff rates with MPSC approval. The University has sought out professional services for purchasing natural gas futures along with its continued participation with the State consortium. As a result of this strategy the University has purchased over 80% of its anticipated natural gas needs through November of 2009. These purchases were made prior to the current spike in natural gas prices, and prior to the 2008 hurricane season. Not only has this resulted in substantial savings but has given the University a fixed cost projection for this volatile commodity.

Campus energy improvements for FY 07-08 included:

- Placing the high wattage natatorium lights on the building energy management system.
- Murchie Science Laboratory Building – Insulating west end chase way (chase way area houses smoke relief dampers which were allowing outside air into the building.)
- Murchie Science Laboratory Building- Added high efficiency dampers in building connector links correcting excessive outside air intake.
- Chilled water system – Increase chilled water temperature by 2 degrees; decreasing KW usage in high usage chillers.
- Thompson Library – Air filtration usage of HEPA filters and eliminated carbon filters; diminished hazardous charcoal carbon waste.

Additional campus energy improvements for FY 08 -09 included:

- Recreation Center – completely re-lamped.
- Variable Frequency Drives – installed in University Pavilion, University Center and Murchie Science air handlers.
- New chiller controls University Pavilion; consequently only one chiller now operates during 70 – 85 degree cooling days.
- Repair of air relief dampers Rec Center; outside air intake to cools and release of warmed building air.
- Installation of Carbon Dioxide sensors on air intake systems; adjusting for air quality control and resulting in less outside air intake and subsequent heating or cooling of such.
- Campus lighting – currently in review for LED technologies.

Future energy conservation issues to consider include, optimizing building/classroom usage particularly in spring and summer semesters; a shared community approach celebrating Earth Day; evaluating performance contracts/contractor(s) viability; a student energy awareness competition event; ongoing encouragement of campus transportation alternatives, such as bicycles/walkable campus promotion; and grants to perform applied research on fuel alternatives.

Classroom Utilization

Because of designated space for the Early College program and State Capital Outlay improvement to French Hall, campus-wide 48 classrooms were scheduled by the Registrar's Office in Fall 2007 with 44 classrooms available Winter 2008 semester. During the primary academic semesters, Fall 2007 and Winter 2008, peak hour utilization, which is defined as 8:00 a.m. - 10:00 p.m. Monday – Thursday and, Friday, 8:00 a.m. - 3:00 p.m. was 62% and 66% respectively. As mentioned earlier in the Enrollment section of this document, planned growth to 8,000 students by 2010 is the University's number one strategic priority. As we move toward this goal, we anticipate classroom utilization to increase.

Bonding on Existing Buildings

The F. W. Thompson Library and the Mill Street Ramp are the only UM-Flint buildings that have a balance remaining against their issued bonds. The Library's \$6 million dollar bond will be repaid in 2013 while the \$7.5 million Mill Street Ramp bond debt has a 2011 retirement date.

Section V. ---Implementation Plan

Planned or Considered Major Renovation and New Construction Projects for BY2009-BY2019

1. Campus Academic Buildings Enhancement Request ---French Hall (FH) and Murchie Science Laboratory Building (MSLB)

Phase I---FH Classrooms for the Future Renovations (underway) ---This project is currently funded by the State of Michigan's capital outlay process---**\$9.35 million** renovation project for FH's 1st, 2nd, and 3rd floors; construction began May 2007 with completion slated for late 2008. Additional capital outlay funding will be required to complete renovations for FH's 4th and 5th floors and the Murchie Science Laboratory Building. Please refer to capital outlay requests below for more detail.

Phase II---Renovate and Reconfigure MSLB Laboratory Space and its 18 Classrooms (Capital Outlay Funding Requested, Priority #1); and Explore Feasibility of MSLB Expansion or Replacement

Background

Since opening in 1988, the Murchie Science Laboratory Building (MSLB) has provided excellent space for the laboratory science programs at UM-Flint. Approximately one-half the building features wet labs, approximately 90,000 sqft. Our laboratory science programs are flourishing, with excellent accomplishments by our faculty and students. MSB, however, was designed for much smaller scientific programs than we have today and for a different generation of scientific equipment. The condition and design of the current laboratories impedes critical goals of the University. Specifically, the University of Michigan-Flint has made expansion of its programs to train future scientists and science educators a top priority. Further, the University is committed to working with K-12 students and educators throughout our region to meet State of Michigan goals to increase the supply of citizens in STEM careers. The University is expanding its offering of science and math camps and other STEM promotion activities. The University is also the lead higher education partner with the Genesee Intermediate School District in planning an early/middle health professions college, supported by a planning grant from the Michigan Department of Education. Our programs in Biology and Chemistry are experiencing a substantial increase in demand, spurred by the needs of employers. The increased demand and the concomitant increased utilization of the laboratories has created an academic bottleneck for students in the sciences and related health fields. We need to reconfigure space to add several additional instructional labs for chemistry and biology plus attendant equipment storage space. Our Chemistry Department cannot admit additional students in organic chemistry because of the lack of laboratory space. The Biology Department, which has recently added a Master of Science program, requires an additional 24-student lab to accommodate student demand at the undergraduate and graduate levels

As the University of Michigan Flint campus continues to plan for the future, in addition to providing state-of-the-art classrooms, we envision a state-of-the-art environmentally "green" designed science laboratory building (enlarged or new). Interim Chancellor Jack Kay has indicated that "such a state-of-the-art science/education building would create ideal space for future science teachers to learn how to teach science, would provide aspiring undergraduate students the facilities they will find in industry and in research universities, would provide our scientists research labs in which to involve undergraduate and graduate students, and would enable us to bring thousands of K-12 students from throughout the region to experience the thrill of science with hands-on activities on Super Science Fridays and at Summer Science camps." In short, a science laboratory building that will enable UM-Flint to help better prepare K-12 science teachers, excite younger students about becoming scientists and teachers of science, and better prepare our students for Science/Technology/Engineering/Mathematics (STEM) careers. Such a building will be particularly important as we grow the early health professions college, a partnership with the Genesee Intermediate School District and, as we collaborate with Ann Arbor in developing cooperative programs in engineering.

Priority #1 – Renovate and Reconfigure MSLB Science Laboratory Space and 18 MSLB Classrooms ---
(FY2010 Capital Outlay funding Requested)

(Estimated Cost: \$21.84 million)

The University is also investigating the feasibility of adding additional square footage to the existing MSLB's footprint or, possible construction of a new "green" state of the art science laboratory building north of the river.

(Estimated Cost: TBD)

Phase III – Complete FH's Classroom for the Future Project, 4th and 5th Floor

Additional capital outlay funding is required to complete FH's classrooms for the future renovation project, which includes floors 4 and 5, as well as associated deferred maintenance and infrastructure upgrades.

(Estimated cost: \$6.2 million)

2. Student Housing

Student housing successfully opened its door to 310 new students, primarily freshman, August 24, 2008.

Brief housing overview:

Housing and Residential Life at the University of Michigan-Flint is fully dedicated to the creation of a learning-centered community where inclusiveness, academic excellence, personal growth, and the free exchange of divergent ideas are highly valued. Student residents are encouraged to actively shape their community and are expected to balance individual and collective needs with civility and honesty. Our foundation is built upon a presumption of goodwill and the belief that mutual respect is a fundamental right of every human being.

Additional information pertaining to student housing is available by clicking: <http://www.umflint.edu/housing/>

3. University Student Center Renovation (No capital outlay funding is requested)

The University Center was opened in 1979 and has many of the traditional facility elements required to serve the needs of a small 1980's commuter campus population. Today, the University of Michigan Flint is aggressively pursuing enrollment growth to 8,000 students and will be opening student housing in Fall 2008, which will shift campus student life from a strictly commuter focus to a commuter-residential focus.

With such a shift, identifying a *campus center or cultural Mecca* becomes that much more important. To paraphrase former University of Pennsylvania president Judith Rodin---A true campus center should be one that embodies the University's goals for the new millennium---a seamless integration of students' academic pursuits, extracurricular activities, and their day to day lives. Such a project might incorporate a cafeteria, student run coffee shop, bookstore, student government offices, student service offices, student organization offices, faculty offices, seminar rooms, and recreation, fitness, activity and social spaces.

By jointly planning the Recreation Center (see narrative below) and University Student Center projects, it will be possible to achieve economies of scale in planning and renovation, while at the same time, provide an opportunity to integrated programming and operational linkages.

(Estimated cost TBD)

4. Recreation Center (No capital outlay funding is requested)

As the University anticipates enrollment growth to 8,000 students and the addition of student housing, continuous improvements to the Recreation Center will be required. According to the UM-Flint Campus Master Plan published by Sasaki in August 2003, the Recreation Center will reach maximum capacity with the addition of only 500 students (page 16, UM-Flint Campus Master Plan). With this in mind, TMP Architects also prepared floor plans with additional square footage to accommodate weight and fitness equipment and programs, as well as a new pool. The existing pool is located in the University Center (access gained via the Recreation Center) and will be in need of major repair and renovation in the near future. Replacing it with a smaller pool in closer proximity to the Recreation Center may be a more practical option.

The condition and appearance of the Recreation Center has deteriorated significantly over the past 23 years because of inadequate funding for capital improvements and repairs. In addition, renovations and upgrades necessary to accommodate changes in fitness industry trends and research have not been possible. Facility needs include **repairs** to stop water intrusion from the roof, windows and expansion joints; upgrade of electrical and lighting systems for better visibility and to prevent power outages; replacement of worn out and outdated carpeting; repairs to walls, floors and other surfaces throughout the facility, including paint; and upgrade of security systems including cameras and exit alarms.

In addition, major facility **renovations** are needed to meet current consumer demands for health, fitness and recreation including making the facility accessible for those with physical disabilities; reconfiguring facility entrance to improve appearance, customer service and membership sales; resurfacing indoor track; expanding free weight and cardio areas; installing air conditioning; adding areas designed to better accommodate children; converting one racquetball court to a squash court; and developing areas for expanded retail sales and refreshments.

Required minimum Recreation Center renovation total **\$4,094,000**, and include:

- Add Welcome Center Entrance
- Reconfigure and expand existing office suite
- Reconfigure and expand existing reception area
- Add new office for membership sales
- Add new storage area under stairs
- Add air conditioning to Multi-purpose room (aerobics room)
- Add air conditioning to Fitness/Courts area (Cybex area)
- Upgrade lower level corridor as “Main Street”
- Renovate custodial area
- Renovate Multi-purpose and wellness rooms (Room 11 & 15)
- Upgrade locker rooms (Rec locker rooms)
- Air condition locker rooms (Rec locker rooms)
- Replace glass curtain wall (pool area/UCEN Lobby)
- This would also include an upgrade to general lighting and finishes on all three levels of the Recreation Center

(Cost estimate: \$22.8 million)

5. Music Performance space (No capital outlay funding is requested)

In order for the University of Michigan—Flint to provide the highest quality instruction in music and music education, it is necessary that we construct a facility that will provide an acoustically sound performance space seating 400-600, state-of-the-art classrooms, adequate student practice space, and appropriate faculty offices. An added benefit of the performance space is its availability to the community, including the Flint Institute of Music, or as an alternative venue for The Whiting, the city’s premier, and practically only, performance auditorium. Existing spaces are cramped, acoustically questionable, and not in compliance with specifications set by music’s accrediting body, the National Association of Schools of Music. In order to enhance enrollment and student learning, a new facility is necessary.

(Estimated cost TBD)

6. Campus Parking Expansion (No capital outlay funding is requested)

As enrollment grows to 8,000 students additional parking may be required for students, faculty, staff and visitors. As a result, the University is working on a comprehensive five-year parking plan.

(Estimated cost TBD)

7. Kearsley Corridor Campus Link (No capital outlay funding is requested)

In 2003, the University’s Sasaki Campus Master Plan introduced the Kearsley Corridor Campus Link concept, whereby Kearsley Street would be open to traffic between Wallenberg and Mill Street. Currently, there is a pedestrian campus walkway at this location. This link will provide for the creation of a University-Cultural Corridor through the

city and would link Kettering University, downtown Flint, University of Michigan Flint and the Flint Cultural Center. This University-Cultural corridor is a key ingredient in the Flint downtown revitalization plan.

This project is nearing completion and is expected to wrap-up in December 2008

(Estimated cost \$ 1.9 million)

8. Northbank Center (NBC) Complex Renovations (No capital outlay funding is requested)

The 162,210 square foot Northbank Center building complex was acquired in February 1999 with a \$450,000 gift-grant from the C. S. Mott Foundation. In addition to the buildings, a 265 space parking ramp was included and is attached to the building complex via a skywalk. To assist the University in determining how best to utilize a \$3 million grant from the State of Michigan, a thorough facility architectural and engineering (A&E) study was commissioned. The purpose of the study was to determine how to maximize the Northbank Center's assets to the fullest possible extent and to prioritize needed renovations. Requirements of life, safety and code compliance were the primary drivers of the analysis. The 1999 the Harley Ellington's architectural and engineering study determined that a minimum of \$9.85 million (excluding elevators), or \$60.53 per square foot, was required to make all three buildings useful to the University. The \$3 million grant from the State provided for sprinkling all 12 floors of the building, installing a new emergency fire pump and fire control center, and adding a new exit stairwell. An elevator review was conducted separately from the A&E study.

In addition to the renovations recommended in the 1999 study, fiber connectivity was recommended and we were able to collaborate with Comcast Cable to complete this project in 2003. Any cost associated with private tenant access to the Internet will be borne by the tenants themselves.

The A & E Study concluded that there were two major benefits from the University's acquisition of the Northbank Center Complex. The first is the availability of essential new space (cited by the 1990 NCA report as a necessity), whether utilized as office or instructional space and the use of the parking ramp. The second benefit is the receipt of rent payments from non-University tenants, many of who are private businesses, to help offset building operating expenses. Since the State of Michigan ceased providing universities with new facility operating funds years ago, universities have been required to seek innovative and creative approaches to fund basic operations within their existing resources.

During 2004/2005 NBC provided over \$150,000 in rent-free office and storage space to the University. NBC's occupancy rate was 49%, comprised of 31% non-University tenants, 18% University programs and 4.4% storage. The University's long-term goal is to have a 60%/40% mix of non-University tenants and University programs, respectively and generate sufficient non-University tenant revenues to cover building operating cost, including those spaces occupied by University programming.

In Winter 2006 because of additional space needs, the Office of the Vice Chancellor for Institutional Advancement, which consist of the University Outreach (Center for Applied Environmental Research, Center for Civic Engagement, Center for Entrepreneurship, American Democracy Project, Amaizing U program), Development Unit, Corporate and Foundation Relations, and Special Events Office, relocated to the NBC. Academic programs located at Northbank include the College of Arts and Sciences' Dance program and Communication and Visual Arts programs.

In 2006/2007, two other University departments moved into the Northbank Center--Information Technology Services and University Relations. Tenant occupancy for Fall 2008 is 28.29% Non-University, 32.33% University, 17.36% finished vacant space and 22% vacant unfinished space. General fund support along with the rental income generated from non-University tenants will essentially offset NBC's operating expenses. A funding source for growing deferred maintenance list still needs to be obtained.

(Estimated cost: \$10.3 million)

9. Campus Utility and Critical Deferred Maintenance Infrastructure Project (No capital outlay funding is requested)
As described within the document, the campus requires critical deferred maintenance and infrastructure replacement/upgrades to central energy plant; outdoor campus lighting including parking deck and lot lighting; and roof replacements. **(Estimated Cost: \$15 million)**

Status of State Building Authority Projects in Progress

The university's current state funded French Hall *Classrooms for the Future* capital outlay project is on-time and on-budget with an anticipated completion date of late 2008. Level 2 enhancements included a student lounge on the south end of the building, state-of-the art classrooms and seminar space, reconfigured computer lab, new theater lab space for set design and make-up, and office space for faculty. All elevators have been overhauled as part of this renovation. Level 1 renovation work included classroom and Music Department performance space improvements, as well as ADA stage access for music performances. DSA is the architectural firm assisting with this project.

Alternatives to Construction of New Infrastructures

Distance Learning-Video Conferencing-Fiber Optic Network within Genesee County

Earlier in this document, we described the dramatic growth in online enrollment at the University of Michigan-Flint during the past seven years, from 157 students in Winter 2000 to 3,792 online course enrollments and 1,949 mixed mode enrollments in fall 2008. [Please refer to Section II. --- Instructional Programming for a more detailed discussion.]

In 2007-08, UM-Flint increased its use of IP-based video conferenced courses with course delivery between the Ann Arbor and Flint campus, Lansing Community College and the Flint campus, and St. Clair County Community College and the Flint campus, reducing both faculty and student travel.

Plans are to create another fully connected classroom before winter 2009 semester (January 2009) for IP-based course delivery.

In 2007-08, the university again offered several cable-based classes to high schools connected to the Genesee Intermediate School District (GENNet).

August 2003 Campus Master Plan:

The University of Michigan-Flint retained the services of Sasaki and Associates to update its 1998-1999 campus master plan. Funding for this project was provided by the C.S. Mott Foundation and was prepared in concert with the Uptown Development, Kettering University and Flint Cultural Center area master plans.

A key element of the master plan was Sasaki's finding that the University of Michigan-Flint can, based upon its 74 acre campus and location on both sides of the river increase student enrollment to 8,000 -10,000 students with additional investment in facilities and, an addition acquisition of 7-9 acres for a parking deck. A copy of the University of Michigan-Flint campus master plan was provided with our FY2006 submission, and is also available by clicking on

<http://www.umflint.edu/resources/offices/chancellor/speeches.php>

It is anticipated that within the next year or so the university will update the campus master plan with regard to parking and facility-building utilization.

Wcw: FY2010CapitalOutlayPlan 12/04/08 FINAL tlb