

FACILITY MASTER PLAN REPORT PREPARED FOR

MILWAUKEE AREA TECHNICAL COLLEGE

SEPTEMBER 2013

FINAL REPORT



PREFACE

In the fall of 2011, Milwaukee Area Technical College (“MATC”) engaged Brailsford & Dunlavey (“B&D”) to prepare a Facility Master Plan (“the Plan”). The intention of the Plan was to evaluate all facilities on the Downtown campus and three Regional campuses: Mequon, Oak Creek, and West Allis. B&D, as prime consultant, completed the Plan together with the following sub-consultants: Fanning Howey Associates (“FHA”), Quorum Architects (“QA”), and Comprehensive Facilities Planning (“CFP”).

This report, prepared by B&D’s project team comprised of Greg Wachalski – Vice President and Kirsten Freiberger – Project Analyst, sets forth B&D’s findings and recommendations as part of the Plan. The findings contained herein represent the professional opinions of B&D personnel based on assumptions and conditions detailed in this report. B&D has conducted research using both primary and secondary information sources, which are deemed to be reliable but whose accuracy B&D cannot guarantee.

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EXECUTIVE SUMMARY

INTRODUCTION

In the fall of 2011, B&D was engaged by MATC to prepare a Facility Master Plan. Together with the sub-consultants, B&D performed the following tasks:

- 1) Review of MATC's strategic objectives to establish a vision-driven framework for the planning efforts;
- 2) Demographic review and an Environmental Scan to understand both macro- and micro-level trends that will shape the post-secondary education environment in MATC's service area;
- 3) Facility Condition Analysis to identify problem areas related to the physical plant on all MATC campuses; and
- 4) Academic Needs Assessment to define the gaps between the existing supply of space and the current and future needs based on the industry-accepted planning guidelines; and
- 5) Sustainability guidelines development to assist MATC in maintaining its commitments to "green" practices.

The master planning efforts resulted in outlining of specific needs in two areas: 1) deferred maintenance issues of all architectural and engineering building systems and 2) specific square footage space needs identifying shortages of both academic and non-academic space (office, student life, library, and food service).

FINDINGS

The master planning process was guided by the strategic objectives outlined by the College's senior administration at the beginning of the effort. These objectives are rooted in the MATC's Mission Statement:

As a public, two-year comprehensive technical college, MATC offers quality education and training opportunities and service to its diverse, metropolitan community by collaborating with partners to advance the lives of its students.

MATC’s Office of Institutional Research prepared 10-year enrollment projections suggesting that the student population will increase by about 3% during that timeframe. In addition, the Environmental Scan identified growth potential, based on the future job demand, for the following programs: nursing, dietetics, emergency medical services, fire, police (criminal justice), HVAC/sheet metal, auto/diesel, and media/arts. Specific growth assumptions, outlined in **Section 4** and **Appendix C** of this report, were applied to these programs on all campuses.

In addition to the review of the above enrollment increase assumptions, the space needs assessment included: space data collection and verification, development of space guidelines, review of the current space utilization, identification of space needs by campus, and reconciliation of the needs with the current supply of space. The current and potential future shortages of space at MATC fall into three categories:

- 1) Current shortages (based on the current enrollment) identified using contemporary space planning guidelines for community colleges;
- 2) Potential future shortages based on the 10-year projections of 3% student enrollment growth; and
- 3) Potential future shortages based on enrollment in specific academic programs driven by the future job demand.

The chart below summarizes the space needs by campus. Details of the space needs assessment can be found in **Section 4** and **Appendix C** of this report.

Campus	Current	New Need	Vacated	Total NSF	% Increase of NSF
Downtown	809,550	58,575	11,006	857,119	6%
Mequon	136,953	3,235	0	140,188	2%
Oak Creek	249,760	46,485	0	296,245	19%
West Allis	103,478	25,715	2,634	126,559	22%
Total:	1,299,741	134,010	13,640	1,420,111	9%

Table 1.1: Academic Space Needs Assessment Summary

The other key element of this Facility Master Plan was the analysis of the facilities’ physical conditions (facility audit). The assessment included inspections of exteriors, interiors, and code conditions. Exterior review included façade, egress doors, exterior windows, roof, parapet, and sealant. Interior assessment focused on doors, windows, walls, ceiling, flooring, and lighting. The engineering evaluation targeted the following systems: heating, ventilation, air conditioning, plumbing, fire protection, and electrical.

Generally speaking, the infrastructure needs at MATC are substantial and vary from campus to campus (most were identified on the Downtown Campus due to its age and size). While many building systems are currently functional, a large percentage of them have reached the end of their useful lives and may need replacement in the near future. These include key building components such as the mechanical and plumbing systems. Many deferred maintenance issues are being addressed on an on-going basis including window replacements, roof repairs, and building control system upgrades. A more comprehensive and well-funded program would allow MATC to address these problems more expeditiously. In addition, system-wide programs, covering all campuses, could be developed to capitalize on economies of scale. Those could include ADA compliance, temperature control system, or fire alarm system upgrades among others. All building infrastructure needs are documented in **Section 3** of this report.

During the strategic conversations with the MATC's senior administration, sustainability was identified as one of the key objectives for future facility development and operations. To assist the College in achieving this goal, the planning team developed preliminary sustainability guidelines. These include: setting increasing energy use intensity targets, setting annual goals for Energy Star ratings, establishing day lighting and recycling goals, increasing the use of energy dashboards, continuing to improve goals set for carbon footprint reduction, and increasing the reliance on renewable energy sources. The detailed sustainability discussion is included in **Section 5** of this report.

NEXT STEPS

In order to better understand how the infrastructure and space needs could be addressed, our planning team recommends the following next steps as a follow-up to this Facility Master Plan:

- 1) Comprehensive cost estimate development to quantify the magnitude of the building condition problems as well as understand the cost of building additions or reconfigurations to address space shortages; and
- 2) Prioritization of renovation, replacement, and expansion projects in the context of MATC's strategic goals and funding availability.

INTRODUCTION

PLANNING TEAM

Brailsford & Dunlavy organized a team of experts to complete the Facility Master Plan for MATC. The planning team's scope of work consisted of:

- ◆ Strategic objectives review;
- ◆ MATC administrator and stakeholder interviews;
- ◆ Building condition analysis (building envelopes and systems);
- ◆ Environmental scanning;
- ◆ Academic needs assessment; and
- ◆ Findings summary.

B&D, as a prime consultant, was responsible for the overall team coordination, strategic analysis, review and synthesis of the sub-consultants' works, and the final recommendations.

Fanning Howey Associates (FHA) performed the environmental scan and the analysis of the facility existing conditions with an emphasis on the engineering systems – mechanical, electrical, plumbing, and fire protection.

Quorum Architects (QA) conducted an analysis of the buildings' physical conditions focusing on the structure envelope and interiors.

Comprehensive Facilities Planning (CFP) prepared a quantitative space needs analysis based on the projected enrollment, classroom/laboratory utilization standards, and industry standards for academic space sizing.

MATC'S VISION & MISSION

MATC's vision and mission statements continue to guide the College in strategic planning projects such as this Facility Master Plan. It is important to keep these statements in mind throughout the process and to help inform the outcome. The statements are as follows:

VISION STATEMENT

MATC is a premier, comprehensive technical college that provides excellence in education to enrich, empower, and transform lives in our community.

MISSION STATEMENT

As a public, two-year comprehensive technical college, MATC offers quality educational and training opportunities and services to its diverse, metropolitan community by collaborating with partners to advance the lives of its students.

PLANNING GOALS

B&D initiated the planning process with a strategic visioning session with key stakeholders. The analysis consisted of a gap analysis identifying goals for facility planning at MATC. The three major objectives behind the review included:

- ◆ Facilitating the involvement of MATC's senior leadership in the planning process;
- ◆ Translating MATC's mission and vision into drivers for the Facility Master Plan; and
- ◆ Grounding the Facility Master Plan in permanent ideals to ensure implementation consistency.

At the conclusion of the strategic review, our team identified the following major objectives:

- ◆ Academic offerings have to be **responsive to the market**, with the ability to quickly add programs to meet student/employer needs within the fast-evolving marketplace;
- ◆ MATC will continue to meet the **diverse student needs** including technical/vocational offerings, general education coursework in preparation for transfers into four-year institutions, and remedial courses to address the needs of under-prepared students;
- ◆ **Graduation rate** and **alumni success** rates are critical – MATC will strive to facilitate increases in both;
- ◆ MATC students from **surrounding districts and Milwaukee metro** are the primary target markets. MATC will not actively recruit students from other locations which could require larger investments in facilities, such as housing;

- ◆ **Technology and facilities** are big drivers towards the development of the institutional profile and image. Improvements in those two categories are the primary desired outcomes of the Facility Master Plan;
- ◆ MATC must remain a good steward of the taxpayer dollars – **creation of value to taxpayers** is a key consideration in developing new programs that will ultimately drive the future physical plant needs; and
- ◆ **Sustainability** initiatives are very important to MATC. Sustainability goals will drive the renovation of existing structures, as well as potential new construction projects with the objective of environmental sensitivity both on the capital and the operating sides.

PLANNING PROCESS

The planning process sought to incorporate the vision, mission, and goals of the College into a tangible and comprehensive plan for the future. The outcomes of the environmental scan and the building condition analysis were combined with the academic needs results and placed into a broader strategic context. The following tasks were performed by the planning team members:

Strategic Analysis (performed by B&D):

- ◆ Review of the relevant strategic documents including MATC’s mission and vision statements;
- ◆ Interviews with senior MATC administrators;
- ◆ Strategic visioning session with the Project’s Plan Committee; and
- ◆ Translation of the major objectives into planning drivers.

Environmental Scan (performed by FHA with B&D’s participation in enrollment projection/academic offering coordination):

- ◆ Review of relevant documents;
- ◆ Detailed analysis of the demographic trends within the area identified as the primary recruitment/catchment area for MATC;
- ◆ Review of the employment trends and alignment of these trends with specific academic offerings at MATC; and

- ◆ Coordination of enrollment projections and academic offering projections as they relate to MATC's future growth objectives.

Building Condition Assessments (performed by FHA and QA):

- ◆ Review of relevant facility condition documents;
- ◆ Visual, non-invasive inspections of various building components including building envelopes, interiors, and building systems
- ◆ Interviews with MATC facility maintenance staff;
- ◆ Rating of various building components based on the agreed-upon rating system to facilitate future capital spending prioritization;
- ◆ Building intelligence system research and recommendations to organize the gathered information into an interactive database; and
- ◆ Development of the Facility Master Plan Sustainability Guidelines.

Academic Needs Assessment (performed by CFP):

- ◆ Verification of the space inventory data to develop a formula-based space needs model;
- ◆ Development/customization of appropriate space planning guidelines;
- ◆ Review/confirmation of the current and desired space utilization rates;
- ◆ Coordination with environmental scan to utilize appropriate enrollment projections in the planning model; and
- ◆ Modeling of the current and future space needs of each campus by major space type categories.

Facility Master Plan Recommendation (performed by B&D):

- ◆ Periodic reports to the MATC Planning Committee, senior administration, and the Board of Directors;
- ◆ Coordination/organization of various Facility Master Plan components; and

- ◆ Formulation of the final recommendations with respect to both the infrastructure and academic needs.

Details and outcomes of all performed analyses are included in the subsequent sections of this Facility Master Plan document.

EXISTING CONDITIONS SUMMARY

INTRODUCTION

B&D engaged several firms as sub-consultants to conduct different aspects of the Facility Master Plan. With respect to the physical conditions surveys, Quorum Architects completed the Building Condition Assessment – Architectural (full report can be found in **Appendix A**) while Fanning Howey performed the Building Condition Assessment – Engineering (full report can be found in **Appendix B**). The following is a summary of these reports submitted by the respective firm.

BUILDING CONDITION ASSESSMENT - ARCHITECTURAL

As part of the Milwaukee Area Technical College's (MATC) Facility Master Plan process Quorum Architects, Inc. was tasked with conducting the architectural building assessments for properties owned by MATC. This process included a visual inspection of all spaces and notation of the conditions. This information was shared with the rest of the team for data and informational purposes.

The assessment included the inspection of exterior, interior, and code conditions. The code conditions focused mainly on the life safety and accessibility features of each space. Exterior conditions assessments included the façade, egress doors, exterior windows, roof, parapet, and sealants. Interior conditions assessments included the doors, windows, walls, ceiling, flooring, and lighting. Each feature was evaluated and ranked by a scoring system based on their conditions. All data was compiled into spreadsheets and expressed in exterior narratives to relay the information to the rest of the team. The scoring system used was:

- ◆ 1 = End of Useful Life
- ◆ 2 = In Need of Repair/Replacement
- ◆ 3 = Condition is Satisfactory
- ◆ 4 = Recently Replaced

The building assessments were conducted from December 2011 to April 2012 and the campuses were evaluated in the following order: Mequon, Oak Creek, West Allis, and Downtown. Comments from these assessments will only reflect the condition of the spaces from that time period. It is understood that building improvement projects have taken place since April 2012 and that some of the commentary may not represent the buildings' current condition.

MEQUON CAMPUS PROPERTIES

The Mequon Campus consists of three buildings: the Main Building and two outlying buildings known as the Barn and the Shed. The Main building was found to be, for the most part, in Satisfactory Condition (3). Areas of improvement include the roof, parapet, flashing, exterior sealants, and ceilings. The Barn is used only for storage and in need of repair or replacement of the roof and foundation. A structural assessment could be conducted to address other areas for repair or replacement. The Shed is in dilapidated condition with several areas in need of repair or replacement.

OAK CREEK CAMPUS PROPERTIES

The Oak Creek Campus consists of the Main Building and the Aviation Center. The Main building can be broken out into two areas for purposes of this assessment. There is a distinct difference between the Center for Energy Conservation and Advanced Manufacturing (ECAM) area of the Main Building and the rest of the spaces. As the newest addition to Oak Creek, ECAM was found to be in Satisfactory Condition (3). The Main Building's areas of improvement include the roof, parapets, flashing, exterior sealants, ceilings, secondary egress doors, and some exterior windows.

The Aviation Center is separate from the rest of the Oak Creek Campus and located on College Avenue at the General Mitchell International Airport. The visual assessment found that most of the building is in Satisfactory Condition (3). Areas of improvement include parapets, flashing, sealants, and the foundation.

WEST ALLIS CAMPUS PROPERTIES

The West Allis Campus consists of three separate buildings. These buildings are the Main Building, the Children's Center, and the A Building. Aside from some additions to the Main Building, the Children's Center was most recently constructed and required the least amount of repair or replacement. Areas of the Children's Center that could use some improvements include the parapets, flashing, sealants, and foundation.

The Main Building is comprised of a base building with several additions that have been constructed over time. Areas of the Main Building that need repair or replacement include the roof, parapets, flashing, sealants, ceilings, secondary egress doors, and some exterior windows.

The A building appeared to be in need of the most work. The building itself has no windows and the roof showed evidence of water damage and leaking at the interior. Areas in need of repair or

replacement included the roof, parapets, flashing, sealants, foundation, overhead doors, walls, and ceiling.

DOWNTOWN CAMPUS PROPERTIES

The Downtown Campus is the largest with 14 properties that we reviewed as part of the campus assessments. The majority of the buildings are located in Milwaukee's downtown area between 6th and 8th Streets. The exceptions are: the Milwaukee Public Television (MPTV) Auction Building and the Blue Hole/Transmitter Building are located outside of Milwaukee, and the Milwaukee Enterprise Center-South (MEC-South) is located on National Avenue south of the downtown campus buildings. A summary of the each building's condition is listed below with areas in need of repair or replacement:

- ◆ **A Building:** roof, flooring, and lighting
- ◆ **Blue Hole/Transmitter:** facade
- ◆ **C Building:** roof, parapet, flashing, sealants, doors, ceiling, floors
- ◆ **F Building:** all elements in need of some repair/replacement
- ◆ **Foundation Hall:** walls, ceiling, flooring, lighting, windows
- ◆ **H Building:** parapet, flashing, sealant
- ◆ **Main Building:** roof, parapet, flashing, sealant
- ◆ **MEC-South:** exterior/interior doors, windows, flooring, lighting
- ◆ **S Building:** roof, parapet, flashing, sealants, façade, ceiling
- ◆ **Storage Building:** roof, interior doors, walls, lighting, windows
- ◆ **Student Annex Bookstore (8th & State):** all areas in satisfactory condition (3)
- ◆ **T Building:** roof, parapet, flashing, sealants, interior doors, flooring, lighting, ceiling
- ◆ **Union 212 Building:** roof
- ◆ **Auction Building:** windows, lighting/electrical, façade, exterior doors, sealants

BUILDING CONDITION ASSESSMENT - ENGINEERING

The Engineering Assessment, performed by Fanning Howey, targeted the conditions of the heating, ventilating, and air conditioning (HVAC), plumbing, fire protection, and electrical systems in all facilities owned by the Milwaukee Area Technical College (MATC) including the

Downtown, Mequon, Oak Creek, and West Allis campuses. The conditions of the equipment and controls were evaluated using the following scoring system:

- ◆ 1 = End of Useful Life
- ◆ 2 = In Need of Repair / Replacement
- ◆ 3 = Condition is Satisfactory
- ◆ 4 = New / Recently Repaired

Final evaluations were then entered into a spreadsheet format that allows for a detailed understanding of the conditions and needs of engineering systems for planning by MATC leadership. The goal is to establish a 10-year plan to address engineering system needs in all facilities along with a funding plan for future action.

HEATING, VENTILATING, AND AIR CONDITION (HVAC) SYSTEMS

For the most part, the HVAC systems are operational and well maintained in the facilities on all campuses. However, most air systems are being operated past the normal life cycle of the equipment being used (“normal life cycle” should be established at 25-30 years for most air systems). Being beyond the normal life cycle impacts the space comfort for the students and faculty and therefore impacts learning. Being beyond the normal life cycle also impacts the energy use of each facility and the ability to manage the use of energy. Being beyond the normal life cycle has an impact on the annual maintenance budget requiring additional budget funding needed to fix or repair outdated systems to keep them operational for another year.

The central heating and cooling plants are largely in good operating condition. System upgrades and replacements have occurred recently resulting in improved life cycle for those systems. However, several system components are in excess of the expected 20-25 year life and should be placed into a schedule for future upgrades and potential replacement.

A component to both the central heating and the cooling plants is the pump and piping distribution systems. The assessment has found both piping and pumps to be beyond an expected life cycle with recommendations for repair/replacement for most of those components. It is important to note that complete replacement of the piping system may not be necessary and may be more dependent upon changes in downstream heating/cooling terminal devices or change over from steam to heating water. Therefore, it is important to place pumps and accessories to the pumps into a schedule for future upgrades and replacement.

Air handling units and related air distribution on all campuses was found to be beyond a realistic life cycle of 20-25 years. The facilities department has been addressing the repair and/or replacement of systems as funding comes available, but most systems remain in need of change. Therefore, it is important that all air systems be placed into a schedule for future replacement.

The building exhaust systems for toilet and storage space throughout each campus were found to be beyond a useful life cycle of 25-30 years. Exhaust requirements for science and kitchen spaces are being addressed as spaces are being upgraded, which must continue. There have been some isolated replacements for general exhaust addressed through the facilities department in recent years, but overall general exhaust should be placed into a schedule for future upgrade or replacement.

Temperature controls throughout the facilities at each campus were found generally to need upgrading and replacement. The assessment found a mixture of electronic direct digital controls along with a good amount of pneumatic controls. To be in a position to manage energy and maintain quality space control for a better learning environment, consideration must be given to a change over throughout to a complete direct digital control (DDC) system that includes centralized monitoring and control. Consideration may want to be given to a performance contract approach to establish a long range upgrade and replacement for all facilities at each campus.

PLUMBING SYSTEMS

In general, the plumbing systems throughout facilities at each campus are functional and well maintained. However, many plumbing systems are being operated beyond the normal life cycle for the systems being used (“normal life cycle” should be established at 30-40 years for most plumbing systems). Beyond the normal life cycle impacts, the water usage for plumbing fixtures less than 5 years old are considered “low flow” fixtures and, therefore, lowers utility costs for each campus. Being beyond the normal life cycle has an impact on the annual maintenance budget, requiring additional funds to fix or repair outdated systems to keep them operational for another year.

Domestic cold and hot water piping was found to be a mix of copper and galvanized. The use of copper or plastic piping material has largely become the standard for facility plumbing systems. Galvanized piping material for the same systems is usually not considered for replacement because galvanized piping has poor longevity, clogging tendencies, and incompatibility with

copper or brass fittings/valves. Replacement of outdated galvanized piping systems should be placed in a schedule for future replacement.

For the most part, facility waste and vent systems have a fairly long life cycle (beyond 50 years). The assessment for facilities at MATC follow the extended life cycle and are acceptable as is and well into the future.

Central water heating systems were typically found to be beyond the expected life cycle and should be considered for future replacement in a long range schedule.

Toilet room fixtures are original with the design in many of the facilities across each campus. The detail of the assessment will show recommendations for replacement of a number of fixtures as a part of a master repair/replacement schedule at each campus.

FIRE SPRINKLER SYSTEMS

Automatic fire sprinkler systems were present in only a portion of the facilities throughout all campuses. Those systems installed were usually in fairly good condition and therefore not in need of replacement. The long term safety of facilities that house a number students and faculty on a daily basis would point to planning for the design and installation of fire sprinkler systems in all facilities. Consideration should be given to placing sprinkler upgrades/installation in a long-term schedule for design/installation.

ELECTRICAL SYSTEMS

The electrical systems including power and lighting throughout the facilities on each campus were found to be in fairly good condition, well maintained, and certainly within an acceptable life cycle. The assessment will show a number of electrical system components scored as satisfactory or in need of repair, but not in need of replacement.

Overall, electrical service entrance systems including transformers, incoming service conductors, and switchgear can be maintained. As power requirements for facilities changes due to added air conditioning, technology, etc.; distribution panels and related branch circuiting should be considered for placement into a long-term schedule for improvement.

The facilities department has already begun a schedule for lighting system replacement to address outdated and high-energy lighting fixtures. A detailed plan for eventual updating/replacement of all fixtures should be developed as a part of the overall campus master plan. Inclusive in the plan should be the installation of lighting controls associated with

occupancy control to assist with an overall reduction in electrical energy for lighting. Emergency and exit lighting would be included in the scheduling of the work.

Site lighting was found to be in fair condition at all campuses, but future energy and maintenance considerations would point to the eventual design/installation of LED lamping for exception lighting and longevity of the systems.

The assessment pointed to emergency power systems in limited use. Consideration should be given to update systems at all campuses.

Voice/data/video systems throughout facilities at all campuses were present most of the time. It is often difficult to keep so many facilities on the cutting edge of this ever changing technology. Nevertheless, a continual program for updating and replacement is necessary to effectively support the teaching environment needed for the students and faculty at MATC.

Fire alarm systems through facilities at all campuses are operational and in most cases in line with code expectations. Again, it is often difficult to keep up with the technology and code requirements that follow the need for fire alarms systems. The assessment notes needs in terms of repair and updating that should be placed in a schedule for work to be completed in the master plan.

Recent concerns with security for young people on campuses, such as MATC, require a complete review of current security and access applications to assure safety at all times for students and faculty. Most facilities have some type of security plan in place, but through current technology and space planning, improvements can and should be made. Scheduling further assessment and the development of new action plans should be foremost in future planning efforts.

SUMMARY

MATC's physical infrastructure needs are significant and vary from campus to campus and from building to building. The largest needs were documented on the Downtown Campus due to the overall square footage of the facilities and their age. Many of the needs throughout MATC are being addressed on an on-going basis through annual project funding. This approach, however, is insufficient. It appears that a large capital funding mechanism would have to be established instead to provide meaningful solutions. While our planning team was not charged with cost estimates, some of the issues, especially related to the engineering infrastructure will require comprehensive solution and, therefore, cannot be resolved through the limited annual funding strategy. We recommend two steps as a follow-up to the infrastructure needs assessment:

- 1) Comprehensive cost estimate development to quantify the magnitude of the building condition problems; and
- 2) Prioritization of renovation/replacement projects based upon the urgency of issues (often related to their expiring life cycles) in the context of the availability of comprehensive capital funding.

ACADEMIC NEEDS SUMMARY

INTRODUCTION

B&D engaged several firms as sub-consultants to conduct different aspects of the Facility Master Plan. With respect to the academic space use and needs, Comprehensive Facilities Planning (CFP) completed the Academic Needs Assessment (full report can be found in Appendix D). The following is a summary of the report submitted by the firm.

OVERVIEW

The study included an assessment of the academic and support space for the Milwaukee Area Technical College Downtown Campus and the three Regional Campuses to provide data and information for the development of the Facility Master Plan. The basis for this report is from information collected from the following sources:

- ◆ Quorum Architects developed a detailed room space inventory for the four campuses that provides the base space data for the space analysis;
- ◆ The schedule of classes, course offerings, college personnel, student enrollment, and student credit hours of instruction for Fall 2011 was provided by the College;
- ◆ College data provided the basic input to determine current utilization rates, efficiency of current space use and space deficits and surpluses; and
- ◆ Long term space needs were based on enrollment projections derived from the Spring 2012 Environmental Scan conducted by Fanning Howey and Brailsford & Dunlavy.

SPACE ASSESSMENT PROCESS

Using the information collected CFP began the process of assessing the academic space needs on all four campuses.

- ◆ Gathered, verified, and integrated basic data (space inventory, enrollment, personnel, class schedule) provided by the College;
- ◆ Developed space guidelines used in the calculation of the space needs;
- ◆ Reviewed/confirmed the classroom and lab space utilization;

- ◆ Documented the current and future space needs for each campus location by major room type category;
- ◆ Analyzed existing facilities to determine space deficiencies and surpluses by room type category; and
- ◆ Coordinated the space analysis with the environmental scan to make appropriate enrollment projections.

BASIC DATA

The following table summarizes the base enrollment, space and personnel data used in this analysis.

Campus	2011 Enrollment		Space	2011 Personnel			
	Headcount	FTE	ASF	Full Time Instructors	Part Time Instructors (FTE)	Administrative and Staff	Total Personnel FTE
Downtown	28,128	7,757	1,283,568	365	288	600	1,253
Oak Creek	12,506	2,976	318,668	86	109	59	254
West Allis	10,654	2,289	187,479	52	38	40	130
Mequon	6,331	1,354	136,815	55	49	48	152
Totals	57,619	14,376	1,926,530	558	484	747	1,789

Table 4.1: Basic Data

ENROLLMENT GROWTH ASSUMPTIONS

The student enrollment projects were derived from the Environmental Scan conducted in the spring of 2012 by Fanning Howey, which aligned the MATC program offerings with the future workforce needs.

In addition a 3% contingency/growth factor over the 10-year planning period was applied to Fall 2011 term student enrollments based on the projected enrollment increases determined by the MATC Office of Institutional Research. Based on the results of the environmental scan and/or new program initiatives, the following programs are expected to grow:

DOWNTOWN MILWAUKEE CAMPUS

- ◆ School of Health: + 20%
- ◆ School of Media and Arts
 - ◆ Animation: + 10% includes new program growth
 - ◆ Music: + 10% includes new program growth

- ◆ Visual Communication: + 10% includes new program growth
- ◆ School of Business
 - ◆ Barber/Cosmetology: + 10%
- ◆ School of Technology & Applied Sciences
 - ◆ Police (Criminal Justice): + 10%

OAK CREEK REGIONAL CAMPUS

- ◆ EMS: + 10% includes new initiatives
- ◆ Fire: + 10%
- ◆ HVAC/Sheet Metal: + 15%
- ◆ Nursing: + 20%
- ◆ Police (Criminal Justice): + 10%
- ◆ Truck Driving School and Diesel Mechanic Program new initiatives: + 10%
- ◆ Auto/Diesel: Wait List + 10%

MEQUON REGIONAL CAMPUS

- ◆ Nursing: + 20%

WEST ALLIS REGIONAL CAMPUS

- ◆ Dietetics: + 15%
- ◆ Nursing: + 20%

SUMMARY OF FINDINGS

DOWNTOWN MILWAUKEE CAMPUS

Classrooms and Computer Classrooms:

- ◆ The existing classrooms are sufficient to support an enrollment increase of 25%. If scheduling efficiency can be improved the number of classrooms required could be reduced (up to 18 rooms).
- ◆ Computer Classrooms: If spreading time of classes into non-prime hours is not possible, two classrooms should be converted to computer classrooms.

Class Labs and Shops:

- ◆ *Technology:* Labs have sufficient enrollment capacity. However, there are quality and image issues.
 - While Police (Criminal Justice) is expected to grow by 10%, the program has sufficient space (1,816 ASF) to handle the growth with existing facilities.
- ◆ *Health Sciences:*
 - Medical Assistant is at capacity and will need an additional 600 ASF.
 - Nursing is at capacity and will need an additional 8,400 ASF.
 - Respiratory Therapy is at capacity and will need an additional 1,250 ASF.
 - Surgical Technology is at capacity and will need an additional 1,800 ASF.
 - OPSCI should be located in a more accessible area.
- ◆ *Business:*
 - Baking is at capacity and will need an additional 2,100 ASF.
 - Barber/Cosmetology is at capacity and will need an additional 3,050 ASF.
 - The Entrepreneur program is new and will need a computer lab at 1,000 ASF.
- ◆ *Media & Creative Arts:*
 - Animation is at capacity and will need an additional 1,000 ASF.
 - Music is at capacity and will need an additional 1,850 ASF.
 - Visual Communications is at capacity and will need an additional 600 ASF.
 - New program initiatives included in future needs are:
 - Studio space for audio production,
 - Computer gaming space for VICOM (mobile web app degree), and

- Advertising Design (COMART) has adequate space for the enrollment growth.
- ◆ *Liberal Arts:* All labs have sufficient enrollment capacity.
- ◆ *Pre-College:* Science labs are at capacity. Assessment space is physically removed from other Pre-College space. Similar type space is needed at the regional campuses.

Offices:

- ◆ Current office space is adequate. Future office space will need 6,800 ASF.

Library:

- ◆ Future space needs are 5,570 ASF.

Campus Wide Space:

- ◆ Student lounge space will need an additional 4,655 ASF.
- ◆ Gym/recreation space will need an additional 17,000 ASF.
- ◆ Foodservice space will need an additional 2,900 ASF.

OAK CREEK REGIONAL CAMPUS

Classrooms and Computer Classrooms:

- ◆ Future enrollment growth can be met by increasing the use of non-primetime hours (8 AM, 9 AM, and after 2 PM) *OR*
- ◆ Adding 3 classrooms (30 to 35 seats each for a total of 1,980 ASF) and 1 computer classroom (1,000 ASF) if primetime utilization cannot be improved.

Labs and Shops:

- ◆ Automotive programs are near the enrollment capacity and have a long wait list. To accommodate the demand, an additional shop with 20 bays totaling 4,400 ASF would be required.
- ◆ The Truck Driving School and Diesel Mechanic new program initiatives can be accommodated in the current Diesel shop spaces.
- ◆ Assuming Electric/Electronic and Power Plant Engineering can share space, the space needs have been combined to be accommodated in the current labs.
- ◆ Nursing requires an additional 1,200 ASF of space.
- ◆ Welding is above current enrollment capacity and requires an additional 2,800 ASF of space.
- ◆ EMS/Fire/Police programs are at enrollment capacity and require an additional 12,700 ASF.
- ◆ The new paramedic program needs can be accommodated in the current space and by sharing the expanded Nursing space.
- ◆ The proposed Public Safety Building would provide space for the Police, EMS, and Fire programs. A building of about 32,900 ASF feet would be required to house these programs, including a firing range. If these programs are housed in the new building, 20,010 ASF could be repurposed in the current buildings to meet other needs.
- ◆ Food and Beverage Manufacturing new programs requiring labs are 1,500 ASF.
- ◆ The Industrial Maintenance and Culinary Arts spaces need can be met in the existing space.

Offices:

- ◆ An additional 7,600 ASF is needed currently and an additional 700 ASF to accommodate the 3% enrollment growth for a total of 8,300 ASF to accommodate the future office need.
- ◆ The faculty innovation center requires 1,000 ASF.

Library:

- ◆ There is inadequate quiet /group study space, an additional 1,550 ASF is needed.

Campus Wide Space:

- ◆ Dedicated student lounge space is lacking, 4,190 ASF is needed
- ◆ No recreation space is provided, 4,190 ASF is needed.
- ◆ Bookstore /merchandising should be expanded by 2,675 ASF.
- ◆ The Foodservice space is sufficient.

Space Category	Space Type	Current Space	Unmet Current Need	Contingency Growth Need (3%)	Program Growth Sq. Ft.	Program Growth %	Total New Need	Vacated Space	Total Space
Academic - Classroom	Classrooms / Computer Classrooms	25,079					0		25,079
Academic - Labs		46,160					0		46,160
Non-Academic	Offices	17,510			500		500		18,010
	Library	5,561					0		5,561
	Special Use (greenhouse, testing, academic support)	12,324					0		12,324
	Child Care	4,548					0		4,548
	Student Lounge	0	1,550	50			1,600		1,600
	Food Service	6,510					0		6,510
	Recreation	465	1,085	50			1,135		1,600
	Bookstore/Merchandising	1,997					0		1,997
	Meeting Rooms	1,041					0		1,041
	Support Facilities	15,758					0		15,758
Total Academic (NSF)		71,239	0	0	0	-	0	0	71,239
Total Non-Academic (NSF)		65,714	2,635	100	500	-	3,235	0	68,949
Total NSF		136,953	2,635	100	500	-	3,235	0	140,188

Table 4.3: Oak Creek Campus Summary of Additional Needs

MEQUON REGIONAL CAMPUS

Classrooms and Computer Classrooms:

- ◆ Existing classrooms and computer classrooms are sufficient to support the enrollment increases of 10% to 20%. If scheduling efficiency can be improved the number of required classrooms could be reduced.

Labs and Shops:

- ◆ All labs have sufficient capacity to handle projected enrollment growth.
- ◆ A new structure for the new Welding program is being planned for the campus.

Offices:

- ◆ Current office space is adequate. The existing faculty innovation center should be increased in size by 500 ASF.

Library:

- ◆ The current space is sufficient.

Campus Wide Space:

- ◆ The campus has no dedicated student lounge space. An additional 1,600 ASF is required.
- ◆ A fitness center requires 1,135 ASF.
- ◆ Foodservice and Bookstore space is adequate.

Space Category	Space Type	Current			Unmet			Contingency			Program			Total		
		Space	Current Need	Space	Current Need	Contingency Need (3%)	Growth	Sq. Ft.	%	Growth	Total New Need	Vacated Space	Total Space			
Academic - Classroom	Classrooms	27,274	0	800	1,180	4.5%	1,980	29,254								
	Computer Classrooms	7,722	0	400	600	4.5%	1,000	8,722								
	Total Classrooms	34,996	0	1,200	1,780		2,980	37,976								
Academic - Labs	EMS	2,367	400	100	300	10%	800	3,167								
	Fire	4,866	3,000	200	800	10%	4,000	8,866								
	Auto/Diesel (Wait list plus new program)	45,642	3,960	440	0	0%	4,400	50,042								
	Police	3,480	6,600	300	1,000	10%	7,900	11,380								
	Nursing	2,414	500	100	600	20%	1,200	3,614								
	Welding	5,750	2,500	300	0	0%	2,800	8,550								
	Food & Beverage (new programs)		0		1,500		1,500	1,500								
	Other Labs	92,984						92,984								
	Total Labs	157,503	16,960	1,440	4,200		22,600	180,103								
	Non-Academic	Offices	20,233	7,600	700			8,300	28,533							
Library		8,738	1,350	200			1,550	10,288								
Special Use (Telepresence, Academic Support)		3,743						3,743								
Food Services		11,521						11,521								
Child Care		4,802						4,802								
Student Lounge Space		0	4,075	115			4,190	4,190								
Recreation		0	4,075	115			4,190	4,190								
Bookstore/Merchandising		1,507	2,550	125			2,675	4,182								
Support Facilities		6,717						6,717								
Total Academic (NSF)		192,499	16,960	2,640	5,980		25,580	218,079								
Total Non-Academic (NSF)	57,261	19,650	1,255	0		20,905	78,166									
Total NSF	249,760	36,610	3,895	5,980	-	46,485	296,245									

Table 4.4: Mequon Campus Summary of Additional Needs

WEST ALLIS REGIONAL CAMPUS

Classrooms and Computer Classrooms:

- ◆ Limited enrollment growth capacity during primetime hours (10% -15% growth capacity).
- ◆ Evening enrollment is near capacity and will need another 2 classrooms (1,500 ASF) for evening demand.
- ◆ Computer Classrooms have sufficient capacity.

Labs and Shops:

- ◆ ESL is at capacity and will need another 600 ASF.
- ◆ Natural Science labs are at capacity and will need an additional 1,200 ASF.
- ◆ Nursing lab is at capacity could justify an increase of 1,000 ASF.
- ◆ Other program expansions: Interior Design, Dietetics, and Early Childhood Education. All have adequate space to meet future need.
- ◆ Welding will add a Robotics program. The Welding program will expand into the Bricklaying/Masonry space which is moving to the MEC-South building.
- ◆ Metallurgical programs and the Foundry are moving from the Downtown Campus (Rooms T 239, T237B, T139, and T 146) to expand and consolidate these programs at the West Allis campus.

Offices:

- ◆ The office space is at capacity and will need 400 ASF for future office needs.
- ◆ The faculty innovation center requires 1,000 ASF.

Library:

- ◆ Space needs total 1,930 ASF.

Campus Wide Space:

- ◆ The campus has no dedicated student lounge space and will need 2,000 ASF.

- ◆ A gym/recreation/fitness center space will require 2,160 ASF.
- ◆ The Bookstore should be expanded by 2,475 ASF.
- ◆ Foodservice space is at capacity and requires 650 ASF.

MILWAUKEE ENTERPRISE CENTER - SOUTH

Programs being relocated to the MEC-South building:

- ◆ From Downtown Campus
 - ◆ Appliance Serving: 3,600 ASF
 - ◆ Plumbing: 2,500 ASF
- ◆ From West Allis Campus
 - ◆ Bricklaying and Masonry: 2,000 ASF
 - ◆ Upholstery and Sewing: 2,800 ASF
 - ◆ Office of Workforce Development

Space Category	Space Type	Current Space	Unmet Current Need	Contingency Growth Need (3%)	Program Growth Sq. Ft.	Program Growth %	Total New Need	Vacated Space	Total Space
Academic - Classroom	Classrooms / Computer Classrooms	24,433	750	750	0	3%	1,500		25,933
Academic - Labs	ESL	3,036	600				600		3,636
	Natural Science Lab	5,175	1,200				1,200		6,375
	Nursing	1,137	550	50	400	20%	1,000		2,137
	Metallurgy Lab (Move from Downtown - T239/&237B)		1,300				1,300		1,300
	Foundry (move from Downtown)		2,500				2,500		2,500
	Welding (Robotics - New)		0		7,000		7,000		7,000
	Vacate Masonry/Bricklaying	2,634						2,634	0
	Other Labs	23,479							23,479
	Total Labs	35,461	6,150	50	7,400		13,600	2,634	46,427
	Non-Academic	Offices (+ faculty innovation ce	18,823	1,000	400			1,400	
Library		5,467	1,750	180			1,930		7,397
Special Use (testing/academic support)		3,796							3,796
Student Lounge Space		1,188	2,000				2,000		3,188
Recreation		1,139	2,060	100			2,160		3,299
Child Care		6,256							6,256
Bookstore/Merchandising		825	2,375	100			2,475		3,300
Food Service		3,498	500	150			650		4,148
Support Facilities		2,592							2,592
Total Academic (NSF)			59,894	6,900	800	7,400	-	15,100	2,634
Total Non-Academic (NSF)		43,584	9,685	930	0	-	10,615	0	54,199
Total NSF		103,478	16,585	1,730	7,400	-	25,715	2,634	126,559

Table 4.5: West Allis Campus Summary of Additional Needs

SUSTAINABILITY GUIDELINES

INTRODUCTION

Fanning Howey met with Mr. Richard Dries, Director of Sustainability Services for Milwaukee Area Technical College (MATC). The goal of the discussion was to develop a better understanding of past and current strategies for addressing facility sustainability targets, future considerations, and expectations for sustainability as it impacts facilities on all campuses. The ultimate outcome is to have established energy/sustainability goals as a component to the Facility Master Plan.

FINDINGS

The President of MATC, Dr. Michael L. Burke, signed the American College and University Presidents' Climate Commitment (ACUPCC) in 2010, which commits MATC to addressing greenhouse gas emissions with campus-wide evaluations and programs. It also addresses the need to add sustainable curriculum that raises the sustainable component to the campus educational experience.

MATC currently has two facilities that are registered for LEED certification with final certification yet to be achieved.

The campus is familiar with Energy Star and the Portfolio Manager program that can assist in an on-line approach to tracking energy use for each facility, but is not currently using that resource for energy management. Energy usage and cost for most buildings is being tracked and evaluated through the Office of Sustainability Services.

The carbon footprint for all campuses that includes vehicular use, solid waste management, and student programs is being developed on a continuous basis.

MATC is currently contracted with Johnson Controls, Inc. for the continued development of an energy dashboard system that can be used by energy management to evaluate real time energy usage at component levels determined through submetering of the energy. The program has led to the design and installation of limited submetering components throughout the campuses.

Renewable energy systems have and are being considered for long-term life cycle and energy benefit. Currently a photovoltaic (PV) farm is in place at the Mequon Campus with limited

success. Interest in geothermal considerations and ice thermal storage applications would be a component to future building system modifications or new building designs.

SUSTAINABILITY GOALS FOR CONSIDERATION

- ◆ Set increasing energy use intensity (EUI) targets for the 10-year Facility Master Plan in terms of kBtUs/sq. ft./year as a combined institutional goal and as targets specific to each building.
- ◆ Set annual goals for Energy Star ratings as the campus' facilities are renovated and energy use improved. Reach out to the EPA and the Portfolio Manager to establish current ratings and means to meet Energy Star expectations.
- ◆ Set daylighting goals that would impact future projects for window replacement, lighting updates, and lighting/daylight harvesting techniques and controls.
- ◆ Set recycling goals supported by programs that reaches out to each campus' faculty, students, and staff. Friendly competition between groups on campus or between campuses can lead to increased participation and common goals.
- ◆ Increase the use of the energy dashboard both in terms of energy management and by students for a better understanding of campus facility energy use and to effectively manage real time energy use on all campuses.
- ◆ Continue to improve goals set for reducing the carbon footprint as needed to meet requirements of the ACUPCC.
- ◆ Set goals that ultimately increase the reliance on renewable energy and the means for meeting those goals in a sensible/cost-effective way.
- ◆ Determine electrical demand limiting and ventilation control strategies for each facility and how/when to implement those strategies.