**Northern Michigan University**

**OUTCOMES ASSESSMENT PLAN/REPORT FORM**

**Administrative or Educational Support Unit**

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| Name of Department or Unit | **Facilities** |
| This document is the | 🞎 PLAN or 🗹 REPORT for July 1, 2011 to June 30, 2012 | Date Revisions Submitted: | October 21, 2012 |
| Submitted by (Unit Representative) | **Kathy Richards, Associate V.P. of Engineering & Planning/Facilities** |

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| **Department or Unit Mission Statement: Was this mission statement revised this year? Yes X No** |
| Provide for the development, service, and stewardship of the university's physical assets to sustain a functional, safe, and attractive teaching, learning, and working environment. |

**Functions within the University:**

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| In addition to being part of NMU’s continuous improvement process, outcomes assessment plays a direct role with the AQIP Systems Portfolio (100-page document submitted every four years). To increase awareness and help gather Portfolio information, **please type “X” for all AQIP categories directly related to your unit’s core mission**. Some functions appear in more than one category. This is a first round collection of this information so do the best you can with the selection; if you want help, ask S. Poindexter. (Note: this section of the form is short-term; it will be deleted once functions have been mapped between units and the Systems Portfolio.) **🞎** AQIP Category 1: Helping Students Learn documents the curricular and co-curricular processes and student learning support.**🞎** AQIP Category 2: Accomplishing Other Distinctive Objectives documents the key non-curricular functions by which NMU serves the region, e.g. community engagement initiatives of students and employees, and department outreach.**🞎** AQIP Category 3: Understanding Students’ and Other Stakeholders’ Needs documents how NMU builds relationships with students, alumni and employers and identifies, targets and meets their needs.**🞎** AQIP Category 4: Valuing People documents NMU personnel recruitment, training, satisfaction, services and programs. **🞎** AQIP Category 5: Leading and Communicating documents processes that guide NMU in setting directions, making decisions, seeking future opportunities, and communicating decisions and actions. **X** AQIP Category 6: Supporting Institutional Operations documents student and administrative support services, safety, and facilities.**🞎** AQIP Category 7: Measuring Effectiveness documents IT systems and institutional research NMU employs to collect, analyze, and distribute, and how departments use them to manage improvement, e.g. use of charts, “cubes,” dashboards.**🞎** AQIP Category 8: Planning Continuous Improvement documents NMU’s strategic and administrative planning processes.**X** AQIP Category 9: Building Collaborative Relationships documents how NMU works with external organizations from which we receive students (school systems) or goods and services (vendors and utilities), send our graduates (schools and employers), and support or regulate our programs (agencies).(A full description of the Portfolio’s categories and its detailed topics are available at [www.nmu.edu/aqip](http://www.nmu.edu/aqip) under the Current Document tab.) |

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|  **Administrative Objective #1** *(State an ongoing goal by which the unit gauges its overall performance in a key role year after year, i.e. your “bottom line” measure.)* |  | **Means/Evidence of Assessment for Objective** *(Describe the statistic or criteria that measures success in achieving this goal. What is the desired and/or minimum target you expect*? *What method is used to collect the data for the statistic*?) |
| Energy consumption has significant cost implications on the university's budget and is a reflection of the efficient operation and maintenance of building systems and effective space utilization. The Facilities Department strives to annually reduce the universities' energy consumption on a net square footage basis.Objective: Develop a more representative energy consumption baseline.Reduce energy consumption for this year by 5% overall on a net square footage basis as compared to the previous fiscal year. |  | Electricity and water consumption is metered and recorded monthly for each building on campus. Gas consumption is metered at the heating plant monthly and then allocated on building a cubic footage for those buildings that are supplied steam from the heating plant; the remaining buildings (mainly apartments) have their own gas meter. For a more accurate gas usage allocation on the buildings supplied with steam from the heating plant, steam meters will be installed on each building. Means of achieving more representative energy consumption baseline:1. Install steam meters in twelve buildings as part of performance contract phase II by July, 2012.

Means of achieving 5% energy consumption reduction:1. Complete facility improvement measures in twelve buildings as part of performance contract phase II by June, 2012.
2. Modify building lighting and equipment schedules to meet revised summer work schedule through August 19, 2011.
3. Measure and verify resultant energy savings due to revised summer work schedule by November, 2011.
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| **Summary of Data Collected** *(Provide trend data and summarize)* |  | **Describe how results were used to improve services** |
| There were two parts to the objective. The first was to create a more accurate energy consumption baseline which is the reason for installing the steam meters. See first paragraph. Data now needs to be collected for a year to establish the new baseline. The second part of the objective was to reduce energy consumption by 5% which is what is shown in item d above based on previous baseline data.Means of achieving more representative energy consumption baseline:1. Steam meters were installed in twelve buildings as part of performance contract phase II by July, 2012 and are recording data within the facilities management system.

Means of achieving 5% energy consumption reduction:1. Facility improvement measures in twelve buildings as part of performance contract phase II were completed by September 28, 2012. Work included the installation of a new and/or expanded facilities management system in each building.
2. Building lighting and equipment schedules to meet revised summer work schedule were modified through August 19, 2011.
3. Resultant energy savings due to revised summer work schedule was approximately $90,000.
4. Comparison of the annual utility reports for 2010-11 and 2011-12: total reduction in electricity and natural gas consumption is 9.58% which comprises 84% of the university's energy budget. 53% of natural gas reductions were due to energy efficiency efforts with the remaining 47% due to a milder winter in 2011-12. Water consumption increased 9.54% which represents 16% of the university's energy budget.
 |  | Means of achieving more representative energy consumption baseline:1. Metered data from the new steam meters is being collected and will be compared to allocated steam usage to determine discrepancies and develop a new energy consumption baseline for each of the twelve buildings.

b. Facilities staff will utilize the facilities management system to measure and verify predicted utility reductions are achieved from facility improvement measures implemented in twelve buildings as part of performance contract phase II. Reports will also be generated by energy service company and reviewed by Facilities staff to verify reductions.Means of achieving 5% energy consumption reduction:1. Facilities staff will continually monitor and adjust buildings equipment operating schedules and/or equipment operation utilizing the facilities management system to optimize reductions in energy consumption.
2. The annual utility reports are shared with the Vice President of Finance and Administration and key members of his staff along with the Senior Associate Vice President of Administration, Director of Housing & Residence Life, Associate Director of Facilities-Intercollegiate Athletics/Recreation Sports, Director of Auxiliary Services, and Facilities personnel who are involved in HVAC and heating plant operations.
3. The monthly utility consumption on campus is provided on NMU's Sustainability webpage at <http://www.nmu.edu/sustainability/node/39>. The annual utility consumption is displayed on NMU's webpage at <http://www.nmu.edu/sustainability/> node/28.
4. Facilities staff will thoroughly analyze the annual utility consumption comparison to determine which buildings have additional energy reduction opportunities by December of each year to plan for projects the following summer.
5. Each December the Facilities Department participates in a Facilities Performance Index survey conducted by the Association of Physical Plant Administrators (APPA) in which this energy consumption data will be entered and compared to other universities and community colleges across the country.
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| **Administrative Objective #2** *(State a 1-2 year objective intended to improve a unit process, service, or output.)* |  | **Means/Evidence of Assessment for Objective**  |

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| *Objective*: Improve learning environment on campus through the consolidation of academic departments to the core of campus, creation of flexible, high-tech classrooms, reassignment of underutilized instructional space, and enhancement of informal learning spaces.*Rationale (Why you are setting this objective; mark with “X”)*:X Effectiveness/quality action Efficiency/cost action  Compliance issue Satisfaction measure Create baseline  Other (explain): *Does this objective relate to a Road Map goal? (Refer to last page for the Road Map goals). If yes, type the related Road Map codes here*: CA-1 |  | *Describe timetable plans to achieve objective*.Completion of Jamrich Hall Modernization project:1. Meet with academic departments to determine facility needs by September, 2011.
2. Review past classroom utilization and determine the size, quantity, and layout of future classrooms by September, 2011.
3. Develop conceptual floor plans and associated construction cost by October, 2011.
4. Develop and submit project program statement to State for construction approval by November 4, 2011.
5. Pending State approval, construction is planned to begin in May, 2012 with completion by August, 2013.

*Beyond completing the above steps, how will you judge whether the objective was a success?[[1]](#endnote-1) Examples: If the rationale was Efficiency/cost, what is the desired and/or minimum target criteria for savings in time or cost? If the rationale was Satisfaction, what is the measure and what increase is desired*?For this stage of the project, a measure of success will be university-approved floor plans that reflect right-sized classrooms that meet the new learning environment needs, inclusion of academic department offices that are currently in Gries Hall, and additional informal learning spaces within Jamrich Hall. The targeted overall campus space reduction is approximately 20,000 square feet. |
| **Summary of Data Collected** (*Summarize the evidence)* |  | **Use of Results to Improve Unit Services** |
| Stated objectives to improve the campus learning environment, consolidate academic departments, create flexible/high-tech classrooms, and enhance informal learning spaces were met. 1. Regular programming meetings were conducted between June 2011 and July 2012 with the academic departments who will occupy the new building. During the programming meetings, department staff were interviewed to determine office needs; existing office suites was inventoried; and space requests were documented.

The classroom study only addressed classroom needs not faculty or administrative office space requirements. The information gathering meetings noted above were conducted with department faculty and staff (English, Sociology, Math and Criminal Justice) to determine quantity of staff, required offices and preferred suite layouts. This information was used to develop office suite drawings for each academic department moving into the new building. Meeting minutes were taken and distributed to the attendees.  1. Building programming for the new academic building included a university-wide analysis of classroom use. The 2011NMU Classroom Study Report developed by *Comprehensive Facilities Planning, Inc*. evaluated course offerings (quantity, course hours, and enrollments) compared to NMU’s classroom inventory and classroom seat utilization (submitted file: NMU Classroom Study Report 09142011.pdf). The results noted an average classroom utilization rate of 25 weekly room hours (WRHs) and that 77% of current on-campus courses have an enrollment of 40 students or less; yet 72% of the classrooms had a capacity of 40 or more. The national standard for classroom utilization is 28.5 to 31.5 WRHs This indicated NMU’s classroom stock exceeded its demand and suggested an opportunity, through improved course scheduling, to reduce the number of on-campus classrooms.
2. During the preliminary design phase, two scenarios were developed for the new academic building; renovation of the existing Jamrich Hall and the construction of the completely new facility. Because of structural limitations with the existing building, the design team determined that it was more efficient to construct a new facility than to renovate the existing facility.
3. During the month of October, 2011, NMU worked with the architects to prepare the program statement for submission to the State of Michigan (submitted file: NMU JXJ DMB Program & SD Phase 200 Submission 2012.01.16.pdf). This submission included a project summary, schematic floor plans, building elevations, furnishings and equipment list, and construction estimate
 |  | 1. **Academic Department Needs**

Based on the input from the programming meetings, preliminary department suite layouts were developed and included with the November 4, 2011 submission to the State of Michigan. 1. **Review past Classroom Utilization**

NMU adopted 28.5 WRHs as the new utilization standard. This will facilitate a reduction of seven (7) campus classrooms.Quantity and size of new classrooms will match demand current demand and improve efficiency. 1. **Develop Conceptual Floor Plans/Construction Estimate**

New offices and department suites were designed in accordance with NMU’s space standards and incorporated space efficiencies such as eliminating excess building storage space; creating graduate assistant (GA) suites with a four-person occupancy in lieu of the current standard of two; and purposing interior suite corridors for administrative use. These coupled with the reduction of seven classrooms provided a reduction of 36,000 square feet; 16,000 square feet more than originally planned. Based on the programming and preliminary plans a construction estimate of $25.2 million was established for the new building.1. ***Develop and Submit project program statement***;

The program statement for the new academic building was submitted to the State of Michigan on November 4, 2011 and was approved for final design and construction on June 25, 2012.To help disseminate progress on the building project, a number of presentations/workshops have been conducted in addition to regular work sessions of the Jamrich Hall Advisory Committee. 1. 02/15/2012 – Dean and Department Heads meeting
2. 12/07/2011 – Dean and Department Heads meeting
3. 10/11/2011 – Campus Master Plan Committee
4. 09/20/2011 – Academic Senate
5. 09/12/2011 – Educational Policy Committee
6. 7/20/2011 – Active Learning Workshop; open to faculty, department heads and deans.

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|  |  | **Means/Evidence of Assessment for Objective** |
| *Objective*: Reduce the utility costs associated with the operation of the heating plant by approximately $1.5 million per year.*Rationale (Why you are setting this objective? Mark with “X”)*: Effectiveness/quality action X Efficiency/cost action  Compliance issue Satisfaction measure Create baseline  Other (explain): *Does this objective relate to a Road Map goal? (Refer to last page for the Road Map goals). If yes, type the related Road Map codes here*: CA-1, CA-2, CA-4 |  | Describe timetable plans to achieve objective. Construction of the Ripley Heating Plant Combined Heat and Power Renewable Energy Project which includes a new 42,000 lb/hr solid fuel boiler with 735 kW steam turbine/generator as an addition to the existing Ripley Heating Plant.a. Complete site and demolition construction by November, 2011.b. Order boiler and turbine by November, 2011.c. Complete construction documents by February, 2012.d. Begin building construction by May, 2012.e. Complete construction by April, 2013.*Beyond completing the above steps, how will you judge whether the objective was a success*?1 Once the project has been completed in April 2013, the overall operating costs for the heating plant will be reduced by balancing the generation of steam and fuel pricing to produce the most cost effective solution for heating, cooling, and electrical needs. The gas fired system will be used when gas prices are low and the wood fired system when wood prices are more competitive. Success will be measured by achieving targeted utility cost avoidance of $1.5 million per year. |
| **Summary of Data Collected (**Summarize the evidence) |  | **Use of Results to Improve Unit Services** |
| a. Site and demolition construction were completed by November, 2011.b. Boiler and turbine were ordered by November, 2011.c. Construction documents were completed for architectural and structural by February, 2012 and mechanical, electrical, and plumbing by April, 2012.d. Building construction began in April, 2012. e. Bids came within established project budget of $16.4 million.  |  | Project is still ongoing; first test burn is scheduled for February, 2013 with project completion by June, 2013.Site visit was conducted in November 2011 by the Associate V.P. of Engineering & Planning and Associate Director of Facilities/Heating Plant with key personnel from energy service company of a private college in Vermont and public hospital in Massachusetts with a wood fired boiler operation similar to that being constructed at NMU. The team was able to view each operation and ask questions of the management and operators which helped with resolving design issues on NMU's project and will be useful to the team when planning personnel and operational needs of the new plant addition. Progress reports were given to the Vice President of Finance and Administration on a monthly basis; the Finance Committee of the Board of Trustees and President's Council at each of their respective meetings.  |

 Many service units already use an evaluative measure and this approach is now more common in assessment theory– not everything we try works out the way as hoped and creating a target and/or success/bail out threshold is appropriate. In cases where this is a new approach for a unit, in the 2011-12 Plan consider how you *might* measure the added value of an objective; however, it is not yet a requirement. The OA committee will provide suggestions in its feedback for this year. During the year, dialogues, additional resources, one-on-one meetings and/or seminars will be held to evolve our OA process.

**Road Map Codes to Tie to Unit Objectives**

Some unit objectives may address specific operational issues. Other unit objectives are strategic initiatives that align with goals in the University strategic plan - Road Map to 2015. These latter unit objectives are potential AQIP Action Projects – giving a little more recognition to unit efforts. Listed below are Road Map categories and goals, preceded with a code. Use these codes when describing Objectives #2 and #3. (Note: Even if your objective is not an exactly itemized as a Road Map priority, still use the code if it applies to that goal.) The full Road Map is at [www.nmu.edu/roadmap2015](http://www.nmu.edu/roadmap2015).

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| ***Road Map to 2015 Goals*** |
| ***Code*** | ***Innovation Goals*** |
| **I-1** | Balance successful programs with new offerings |
| **I-2** | Professional development program that rewards innovation and collaboration |
| **I-3** | A growing portfolio of corporate collaborations that exploit NMU’s technical expertise, enhance academic programs and facilitate global engagement for students and faculty both on campus and abroad |
| **I-4** | Develop the financial resources to support innovation and student success |
|  | ***Meaningful Lives Goals*** |
| **ML-1** | A Liberal Studies Program that provides students with the abilities and knowledge necessary for lifelong learning and effective citizenship in a challenging and rapidly changing world |
| **ML-2** | Develop a new academic advising system that integrates the advising assets of academic departments and student services to contribute to a new, effective retention management network—similar to our enrollment management network |
| **ML-3** | Integrate the highest possible level of information technology skills and competencies throughout the university |
|  | ***Campus Attributes Goals*** |
| **CA-1** | Utilize the Campus Master Plan and related initiatives to continue to build and develop a greener and more learner-centered campus |
| **CA-2** | Enhance processes throughout campus operations to guide the use of resources and inform resource allocation |
| **CA-3** | Enhance the portfolio of academic programs, research and other activities that leverage the university’s location  |
| **CA-4** | Be a model community for sustainable education and practices |
|  | ***Community Engagement Goals*** |
| **CE-1** | Include all units of the campus in the process of community engagement for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity.  |
| **CE-2** | Increase faculty, staff and student involvement in the Superior Edge program, academic service learning and other community engagement and leadership development initiatives.  |
| **CE-3** | Put into action a commitment to be an inclusive community where differences are recognized as assets of the institution, respected attributes of the person and a valuable part of the university experience |
| **CE-4** | Increase collaboration with local communities, schools, governments, development groups and other partners to enhance community and economic development in the Upper Peninsula.  |

1. [↑](#endnote-ref-1)