

**INDIANA STATE UNIVERSITY
TASK FORCE ON AFFORDABILITY—FACILITIES SUBCOMMITTEE
RECOMMENDATIONS**

Overview

Indiana State has a long history of undertaking various cost reduction initiatives related to campus facilities and administrative functions since the early 1990's. These efforts have saved the University literally millions of dollars particularly in utility, operations and maintenance of physical plant costs. Some of these initiatives include:

- Implementation of a campus recycling program to reduce or eliminate trips to the landfill and cost of dumping fees.
- Participation in the mid 1990's in a Green Lights program offered by Duke Energy (then Public Service of Indiana) to replace existing lighting with more energy efficient systems.
- Construction of a new natural gas fired steam plant in 2001 and the purchase of long-term natural gas hedge contracts to control heating costs.
- Installation of a condensing heat exchanger at the Central Heating Plant to preheat combustion air and capture condensate returned to the boilers to improve boiler efficiency and reduce natural gas cost.
- Outsourcing in 2009 of the motor pool rental fleet to Enterprise.
- Installation of deep wells throughout campus to provide water for irrigation thus reducing the cost of water purchased from Indiana American.

In addition to the above there are many other initiatives that have also reduced the total greenhouse emissions of the University from electricity, on-campus stationary sources, and solid waste in CO₂ equivalents from 137,820 in 1990 to 72,403 in 2009, according to the most recent carbon footprint analysis.

The Facilities Subcommittee was charged to explore ideas to further reduce the cost of utilities and operation and maintenance of the physical plant as well as other administrative cost saving initiatives including how best to optimize the utilization of campus space. Recommendations are divided into three categories; those recommended for immediate implementation, those of a long-term nature, and finally recommendations needing further exploration.

Utility Utilization and Cost

The cost of utilities not only includes the rates charged by utility providers but just as importantly is based on the utilization of these resources by the campus community. Other factors impacting cost include weather and utility rate setting structures, neither of which the University can exert any control. The addition of new or

renovated facilities, such as the Student Recreation Center, also adds to the energy load and the overall cost of campus utilities.

Items recommended for immediate implementation include:

- Reactivation of the “Be Energy Aware” campaign recommended in 2006 to educate faculty/staff and students on ways to reduce energy utilization, particularly electrical consumption.
- Move smaller buildings not connected to the Central Heating Plant from Rate 220 to Rate 225 resulting in savings of \$40,000 to \$50,000 per year.
- Continue insulation of steam pipes and valves in utility tunnels.
- Ensure all new purchased equipment is Energy Star rated.
- Encourage faculty and staff to turn off all personal computers, printers, and copiers at night, weekends, and during holiday breaks.
 - According to the US Department of Energy electronic devices are the second largest users of electricity in an office next to lighting.
 - The US Department Of Energy offers the following Guidelines:
 - Personnel Computers systems should be completely powered off any time they are not going to be used for more than 2 hours.
 - Monitors should be programmed to revert to the sleep mode after 10-15 minutes of inactivity. We recommend 5 minutes to obtain the maximum electrical consumption reduction.
 - Printers (especially Laser printers) should be programmed to revert to the sleep mode after 30 minutes.
 - Office copiers should be programmed to revert to the sleep mode after 30 minutes.
 - It should be noted however, that any electronic equipment consumes some electricity even in the power off mode. The only way to completely stop electrical consumption is to un-plug the device.
 - Example of savings on PC electrical operating costs.
 - Average cost to run a PC and Monitor is \$91.98 annually if a PC’s is running continuously 24/7/365. (based on the average electrical cost of \$.0619 per KWH)
 - Allowing the monitor to revert to the sleep mode after 5 minutes and turning off during off hours (nights/weekends/holidays) will reduce that annual cost to \$65.95; a 29% reduction.
 - Turning off the PC during off hours will further reduce the annual operating cost down to \$11.51; a total reduction of 87.5%.
- Installation of UV-C lights on fan coils and drain pans to keep coils cleaner thereby improving efficiency.

- Use of air filters with a higher MERV (Minimum Efficiency Reporting Value).
- Continue lighting conservation efforts to include CFL and LED installations and encourage the use of task lighting, where appropriate.

Recommended long-term initiatives to reduce utility consumption and contain cost include:

- Utilization of motion sensors in all new building construction and major renovation design to be installed in offices, restrooms, and corridors where funding permits.
 - At current electric rates the calculated payback period to install motion sensors in classrooms and offices is 6.2 to 8.5 years with maintenance costs included.
 - Manual lighting control could be accomplished in existing classrooms by simply posting the classroom schedule and making it the responsibility of the instructor or professor to turn out lights after the last class of the day.
- Implement a campus-wide self-audit of departmental lighting to reduce/eliminate unnecessary or excessive lighting.
- Conduct an internal/external audit of all laboratory bio-safety cabinets to ensure efficient filtration and energy conservation measures are in place.
- Meter campus buildings to determine benchmarks and track effectiveness of energy saving projects. Average cost to install is approximately \$36,000 per building.

Other initiatives worthy of further review and consideration include:

- Institute a ten year plan to phase all University owned vehicles to alternative fuel sources where feasible to reduce energy consumption by half in 2021.
- Creation of a “Building Dashboard Web Site” where students and staff can track energy consumption with real time data on energy used for electricity, heating and cooling in an effort to create an eco-minded campus community.
- Retrofit of heating and air controls in campus buildings to effectively utilize energy and improve indoor air quality.

Another initiative recommended that does not necessarily reduce utility cost but creates a more sustainable campus is to remove all campus rooftop drainage from the current combination sewer system and utilize “green methods” such as rain gardens.

Operations and Maintenance of Physical Plant

From 1989-90 to 2011-12 total staffing levels in Facilities Management decreased by 38 percent from 243 employees to 150, a loss of 93 positions. During this same time period custodians responsible for the cleaning of 43 buildings have decreased by 47 percent. The current 63 custodians are charged with cleaning 35,861 square feet on a daily basis or the equivalent of 20 typical residences. Reductions in Facilities Management staff have impacted service quality resulting in longer response times,

dirtier academic/administrative buildings, and unkempt planting beds and lawn areas. The operations and maintenance budget for Facilities Management has increased only 11.5 percent from 2001-02 to 2010-11 while during this same time period the fiscal year CPI has increased 24.1 percent. In 2011-12 the operations and maintenance budget decreased an additional 3.3 percent. Clearly there are few, if any, further staff reductions that can be undertaken without eroding an already reduced level of service and cleanliness.

However, the subcommittee did evaluate initiatives that may result in cost containment without further eroding service levels. Recommendations for review and consideration include:

- Expand use of student employment in grounds and custodial areas, where feasible. This past fall Facilities initiated a pilot project employing four students as custodians. The pilot was successful and it is recommended to be expanded into the grounds maintenance area.
- Existing maintenance contracts with outside vendors are reviewed annually. It is recommended this practice be continued and changes made wherever cost savings may exist.
- Evaluate the use of alternative fuel sources for grounds maintenance equipment, particularly mowers. For example, Bowling Green State University recently converted mowers to run on filtered vegetable oil. Funding for the project was provided by the Ohio Department of Natural Resources.
- Investigate external funding opportunities to fund conversion of maintenance equipment to alternative sources of power.

Space Utilization

Indiana State has long experienced an abundance of space to provide storage, offices for emeriti faculty, graduate assistants, adjunct faculty and others. With the repurpose of University Hall to house the Bayh College of Education, the conversion of Erikson Hall to student housing, and the planned demolition of Statesman Towers, space is now at a premium. The addition of new academic programs has also added to space demands.

Items recommended for immediate implementation include:

- Development of guidelines for assignment of space to emeriti, adjunct faculty, and graduate assistants.

Long-term initiatives include the evaluation of classroom utilization to ensure the most effective use of general classroom space.

Administrative Cost Savings

Increasing concern nationwide about the growth of administration relative to faculty has challenged universities to evaluate how administrative staff is deployed. According to the Chronicle of Higher Education in a August 2010 article, the number of administrators for every 100 college students increased by 39 percent from 1993 to 2007, while the number of professors and researchers rose by 18 percent during that same period. Some of the reasons for this growth relate to increased use of technology on college campuses, regulatory mandates, and reliance on professional academic advisors or other positions whose tasks may formerly have been handled by faculty. Expenditures of supplies, equipment, and reinvestment in infrastructure have also contributed to administrative costs.

As with utility utilization and cost, Indiana State has undertaken initiatives to outsource functions formerly provided by ISU employees starting with the operation of the campus bookstore and food service. Both were transferred to Barnes & Noble and Sodexo in 1989 and 1990, respectively. Since that time other functions have also been evaluated and where appropriate transferred to a private provider. Most recently in 2010 the delivery of student health services was transferred to UAP Clinic resulting in a savings in excess of \$600,000 annually. Likewise, administration of workers compensation is now managed by JWF where previously two University employees staffed this function.

The Facilities Subcommittee discussed various methods to evaluate administrative costs at Indiana State, similar to a review of academic programs undertaken in previous years. During the 2007-08 year both the divisions of Student Affairs and Business Affairs evaluated all or a portion of the departments within each respective area. We recommend for further study a review of best practices at other universities to determine an appropriate process to evaluate operational departmental efficiencies. As a starting point for this study the following may be referenced to provide a framework for this discussion:

- Delta Cost Project: www.deltacostproject.org
- Center for College Affordability: <http://centerforcollegeaffordability.org/blog>
- Other readings include:
 - The Innovative University
 - Saving Higher Education

Cost saving measures under evaluation by the Office of Information Technology that may result in operational savings include:

- Exploring collaborative arrangements with other Indiana higher education institutions to share computing resources.
- Expanding the imaging project to improve usage of space and create operational efficiencies.

Because of the limited timeframe to explore potential administrative cost reduction efforts for this report, the subcommittee cannot recommend specific administrative reductions at this time. However, it is important to note that in many cases the University is required by state or federal mandates to have certain administrative functions in place. While some of these could perhaps be outsourced it may result in little if any cost savings to do so.

Conclusion

The subcommittee identified several cost saving initiatives, particularly dealing with energy consumption and related cost that should be undertaken immediately. There are also other initiatives recommended for further exploration and review. This report is respectively submitted to President Bradley and the Task Force on Affordability by the following Facilities Subcommittee members.

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