

## Pulper and Recycling Program Helps University of Maine Reduce Water Use, Waste and Wastewater

ORONO, MAINE

The University of Maine in Orono installed a pulper when it renovated its Hilltop Commons dining facility and has quickly noticed the sustainability impact as a result. The pulper was initially installed to reduce the use of hot water, wastewater and solid waste, but the university immediately found it had a significant impact on its energy use and carbon emissions.



The pulper system separates food waste from the dishwater, allowing the water to be reused, while the food waste is turned into compost instead of being discarded down the drain with hot water. The university delivers the compost to an EPA-certified composting site where it is converted into rich soil.



The benefits from the pulper are vast. Since the water is able to be reused, the university saves 20,000 gallons of hot water each day. This means a saving both in the municipal water and in heating the water with No. 6 fuel oil. These results have also contributed to the university's overall water reduction of 26 percent. Additionally, the university saves more than half a ton of carbon emissions each day from the heat saving alone. By turning food scraps into compost instead of disposing them down the drain, the university has cut solid sewer waste output in half.

In the last year, more than 83 tons of compostable material have been diverted from the waste stream and turned into rich soil at the Hudson facility, near where the University of Maine's composting project is based. That is 10 more tons than university dining was able to divert during the previous year (a 14

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percent increase). Additionally, the composting program has been able to save half a tractor trailer load of garbage bags every year.

Installing the pulper in the dining facility saves the University of Maine more than \$34,000 a year in municipal water, water heating and sewage fees. The university has a continued cost of \$7,500 per year for compost collection. However, it expects to have a payback of 5.4 years (by 2012), assuming energy costs will not significantly rise over this time period. The University of Maine is planning on investing in additional pulpers so that more of its facilities can expand their composting operations.



Since the University of Maine cannot compost every piece of foodservice waste, it has made a strong commitment to offer alternative waste solutions such as encouraging students and staff to recycle. The kitchen staff collects paper, cardboard, tin cans, aluminum foil, glass and No. 2 plastic, which is picked up by the university's own UMaine Recycles staff and taken to an on-campus recycling depot for processing. Due to the state of Maine's bottle refund program, revenue is also generated by the collection of returnable bottles and cans. This revenue is used to fund future sustainability initiatives.



The University of Maine estimates that roughly 70 percent of waste materials can be either composted or recycled. The remaining waste is sent to the Penobscot Energy Recover Company (PERC)

in Orrington, Maine, where it is turned into biofuels in order to produce electricity. This composted or recycled waste eliminates the university's need for landfill space. Second, the facility is equipped with a magnetic system that enables it to remove all metals from the refuse prior to the energy creation process. This feature provides a safeguard for the university's sustainability efforts by ensuring all metal is recycled, even if it is not placed in the recycle bin at first.

Recently, the university chose to replace 10,508 gallons of No. 6 heating oil with natural gas to save energy and reduce carbon and sulfur emissions. Since making this change, the university has seen its carbon footprint drop by more than 10,000 tons, which has mostly been attributed to the fuel change.

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The university has also implemented campus-wide environmental purchasing procedures that encourage purchasing ENERGY STAR® rated equipment. In addition to increasing the use of energy-efficient equipment on campus, these new purchasing guidelines have prompted the use of environmentally friendly cleaning products in dining facilities, which has reduced the amount of hazardous waste being discarded.



One of the simplest, least visible and most effective initiatives that has been introduced by dining services and the university as a whole has been dedicated to reducing the amount of energy that is both used and wasted by lighting. Lighting timers and sensors have been installed in hallways and closets around the dining commons to reduce the number of lights that are left on when not needed. In addition, compact fluorescent light bulbs have also been installed throughout the dining halls to reduce energy consumption.

The university's future endeavors include expanding facility renovations. Wells Commons was fully renovated and reopened in June 2008 and is currently under review and expected to be classified as LEED Silver by the U.S. Green Building Council.