



**MEMORANDUM OF UNDERSTANDING**  
**Between**  
**THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**And**  
**MONTCLAIR STATE UNIVERSITY**

**I. Purpose**

The purpose of this Memorandum of Understanding (MOU) is to formally create a mutually beneficial working relationship between the United States Environmental Protection Agency (EPA) and Montclair State University (MSU)

**II. Background**

In the October 20, 2006 issue of *The Chronicle of Higher Education*, the cover story was about creating sustainable universities. The subtitle was: With great fanfare, universities are trumpeting their efforts to make society more equitable and environmentally healthy. Will they succeed?

Institutions of higher education are increasingly being viewed not only as locations where students are educated, future teachers are prepared, and research is conducted; they are also being viewed as locations that provide examples of how society can move toward sustainability. They are becoming locations where demonstration projects that contribute to sustainability are developed and evaluated. These efforts extend to facilities, purchasing, academics, and student life.

The mission of the Environmental Protection Agency (EPA) is to protect human health and the environment. EPA works to develop and enforce regulations that implement environmental laws enacted by Congress. In recent years, between 40 and 50 percent of EPA's enacted budgets have provided direct support through grants to State environmental programs. At laboratories located throughout the nation, the Agency works to assess environmental conditions and to identify, understand, and solve current and future environmental problems; integrate the work of scientific partners such as nations, private sector organizations, academia and other agencies; and provide leadership in addressing emerging environmental issues and in advancing the science and technology of risk assessment and risk management. The Agency works through its headquarters and regional offices partnering with over 10,000 industries, businesses, non-profit organizations, and state and local governments, on over 40 voluntary pollution

prevention programs and energy conservation efforts. EPA advances educational efforts to develop an environmentally conscious and responsible public, and to inspire personal responsibility in caring for the environment.

Montclair State University is committed to serving the educational needs of New Jersey with programs characterized by academic rigor and currency in the development of knowledge and its applications. The University serves as a center for the creation of new knowledge and for the development of innovative applications of existing knowledge and as a center for pedagogical and artistic excellence and creativity. The University will play a role beyond the campus community, partnering and collaborating at the local, state, national and international levels to make positive contributions to addressing issues of importance to society, to enable students to experience their ability to use knowledge in constructive ways in the world, and to share the rich array of intellectual and cultural resources of the University with the people of New Jersey and beyond.

The EPA and MSU will, through this MOU, work together to further progress in sustainable development.

### **III. Memorandum of Understanding (MOU) Commitments**

The Parties recognize the importance of collaboration to serve the needs of society through proper design, construction, and management of the nation's post-secondary institutions. Consequently, the Parties are hereby establishing a working relationship, and undertaking certain commitments with respect to campus infrastructure and operations as they relate to environmental issues, including, but not limited to the following specific undertakings related to university facilities and academic programming of Montclair State University.

#### **A. University Facilities and Green Operations**

##### **Environmental Management Systems (EMS)**

Montclair State University received a matching grant from Triumvirate Environmental to purchase EMS WebWare™ from the University of Massachusetts-Lowell. EMS WebWare™ is a web-based software application that assists in the development and management of an EMS or an International Standards Organization (ISO) 14001 Program. An EMS will provide the framework to ensure that green activities and sustainability will be integrated into MSU's entire facility operations.

##### **Municipal Solid Waste (MSW) Recycling and Re-use**

###### *WasteWise Program.*

MSU will join EPA's WasteWise program, which provides technical assistance to members for auditing MSW generation rates and developing MSW reduction and recycling plans. Members also set their own recycling goals. The University will also

utilize the WebWare software discussed above to measure the effectiveness of its recycling efforts. Listed below are some of the ongoing MSW recycling activities being conducted at MSU.

#### *Organics/Food Waste Composting.*

Food scraps are collected from two kitchens on campus, one in University Hall, which primarily serves the conference center, and one in the Student Center, which primarily serves both the student and faculty dining rooms. The scraps are collected daily in either 5- or 10-gallon buckets. Three times per week the buckets are collected and weighed. The scraps are then processed in an in-vessel aerobic digester after being mixed with wood chips, which serve as a bulking agent and carbon source for the bacteria that biologically decompose the food scraps. Since the first day of classes in the autumn 2007 semester, over 25,000 pounds of food scraps have been turned into high-quality compost in a process that takes just 3 days. The compost is being used for campus landscaping projects. Approximately 13 metric tons of CO<sub>2</sub> emissions have been avoided as a result of this project. Plans are underway to expand this project to service the entire campus so that MSU will eliminate food scraps from its waste stream. These plans also include eliminating the serviceware currently being used in favor of compostable serviceware, which will further reduce the amount of waste generated on campus and the energy required to wash serviceware that is not disposable.

#### *Mixed Fiber (Paper) and Bottles/Cans Recycling*

The University has a contract in place that provides for the recycling of paper, cardboard, and co-mingled cans and bottles. This activity continues to be successful in that the volume and percentage of paper, bottles/cans being recycled are consistently increasing each year.

All facilities must be adaptable to the University's recycling program and provide collection containers in an aesthetically pleasing display. The units are easy to access by housekeeping personnel when discarding items. Any hazardous wastes managed within the facility are appropriately contained and provisions are made for their proper disposal.

#### *Environmentally Preferable (Green) Products.*

Montclair State University has been committed to green cleaning before former Governor Codey signed Executive Order #76 in 2006, which mandates all State Facilities to use less hazardous cleaning products now and in the near future. Currently, 80% of all cleaning products used on campus are green, including glass cleaner, all-purpose cleaner, neutral disinfectant floor cleaner, and degreaser. With MSU's new cleaning supplies contract, which is imminent, MSU has added green floor stripper, floor wax, and carpet shampoo.

One hundred percent of office paper purchased by the University contains recycled fibers. The roll paper hand towels and toilet paper are made of recycled materials and the

recycling centers throughout campus are made of recycled milk cartons.

*Participation in EPA's RecycleMania Yearly Contest.*

MSU will continue to participate in the RecycleMania event sponsored by EPA. To date, MSU has participated for two years and has documented 94,662 lbs of MSW recycled as part of the contest.

*Using Food Waste Composted On-site under the MSU Reforestation Program.*

Consistent with New Jersey's No Net Loss Reforestation Act, NJSA 13:1L-14.1 et. seq, Montclair State University is required to plant 190 trees during the 2008 calendar year. Compost generated in an aerobic in-vessel digester from food scraps collected from two of the kitchens on campus will be mixed in a 1:4 ratio and used in landscaping projects on campus thereby reducing the amount of top soil that must be transported to campus. The compost will also be used as an under layer for areas where mulch is applied, thereby further reducing the need to water the plants or trees.

*Electronics Waste (E-Waste) Recycling.*

Computer components/CRTs contain hazardous substances, which can harm the environment if they are simply put out with the trash. These items and similar ones contribute most to the lead and mercury, which make their way into landfills or incinerators, and require substantial cost and effort to assure that these hazardous substances are not released into the air or water.

The Office of Information Technology has established a computer life cycle replacement program. The computer life cycle replacement program was created approximately 4 years ago in an effort to keep all computers for faculty and staff and those in public and teaching computer laboratories up-to-date. In collaboration with representatives from each of the academic and administrative units, an inventory was compiled and a replacement project plan was created. The initial goal of the program was to replace the computers in the public and teaching laboratories and provide all full time faculty and staff members with one primary computer. The program was later expanded to include a small pool of computers for adjuncts, part time employees, student and graduate assistants. To date, the Office of Information Technology has successfully replaced well over 2,000 computers campus wide! The first replacement of the leased computer equipment was successfully completed this past summer in MSU's teaching and public computing laboratories. MSU's next project is to replace the 800 leased computers that are currently assigned to faculty and staff over the next few months.

The University has contracted with a computer and electronics recycling firm to properly handle the retirement of all E-Waste that is not leased or returned to the supplier at the end of its life cycle.

## **B. Energy Management**

### **Green Power, Energy Conservation and Reduction of the MSU Carbon Footprint**

#### *Energy Usage and Carbon Footprint Reduction*

Future energy assessment and reduction plans include:

- MSU joining the Energy Star Program as a Partner, including benchmarking energy consumption for new and existing buildings, reducing energy usage by 10% and educating students and employees on energy conservation techniques.
- Conducting and providing an energy and utility conservation audit of the facilities
  - Development of the historical load profile and present energy use.
  - Development of the trend analysis of energy costs.
  - Projecting the future energy use.
  - Deriving an energy efficiency index for every building.
  - Developing energy efficiency indices and performance benchmarks.
- Conducting and providing an audit of the critical energy and utilities infrastructure to ensure that business continuity best practices are developed to assist in the event of an emergency or threat.
- Conducting and providing an audit of the Building Automation System and SCADA system.
- Conducting and providing an audit of the campus wide underground utilities.
- Conducting a feasibility study around installing digital energy monitors, electric sub-meters where current gas, water, and steam meters are all integrated.
- Researching the feasibility of renewable energy sources such as wind power, fuel cells, and photovoltaic technology at Montclair State University.
- Developing best practices to take advantage of grants through the New Jersey Board of Public Utilities (BPU) Office of Clean Energy, NJ SmartStart programs, EnergyStar rebates, use of Energy Star labeled appliances and equipment, and additional opportunities.
- Conducting and providing an audit of the electric metering and load usage management.
- This information will be used by MSU's consultant to develop an overall energy management plan.

#### *Solar Energy*

Finley Hall's Photovoltaic Array has been installed and is generating a small amount of electric power for Finley Hall. This array represents an absolute savings to MSU because it was installed in May 2002 at no cost to the University. As of March 10, 2005 through March 2006, the array had contributed 3,450 Kilowatt Hours of electricity to the MSU grid with no pollution and at no cost.

### *Energy Cogenerator*

At MSU, the Cogen Plant produces thermal energy (steam) and electricity. Steam expended in the generation of electricity is cycled to MSU's campus buildings for heating in the winter and cooling in the summer.

The Cogen Plant provides much of the electricity and all of the steam requirements to light, heat and cool the buildings on campus. Backup and maintenance electrical power are purchased from Public Service Electric and Gas (PSE&G) and account for a portion of the campus energy needs. Natural gas is purchased from PSE&G under the existing market gas tariff.

The Cogen Plant operates 24 hours a day, 7 days per week. Excess electrical power produced is sold back to PSE&G (approximately 8% of the electricity produced is sold back). Total steam production from the co-generator is over 160 million pounds per year.

Cogeneration plays an important role in the mission of the institution by providing energy to the campus in a manner that is both economically efficient and environmentally friendly. It produces electricity and steam to keep the lights on throughout the year, the buildings warm in the winter and cool in the summer. It does so, in part, by re-cycling its own waste exhaust and turning it back into useful energy.

In today's world we should all recycle; the Cogeneration Plant certainly does its part.

### *Energy Conservation and Emergency Generators*

Emergency Generators might not be allowed to operate for normal testing/maintenance on a certain day, depending on New Jersey's Air Quality for that day. The air quality is based on the National Air Quality Index System.

### *Integrated Pest Control*

The pest control company with which Montclair State University contracts uses integrated pest management. Although universities are not required to use this method, as in K-12 school systems, MSU does anyway.

### *Promoting the Use of Alternative Fuel Vehicles and Low Sulfur Diesel Fuel*

Discounted parking permits, 50% for drivers of hybrid vehicles and 100% for drivers of clean fuel vehicles are offered. Discounts for carpoolers are also offered to encourage high occupancy vehicle use.

Campus shuttle buses use low-sulfur clean diesel fuel. Upon request, Parking Services provides information to the MSU community about car- and vanpooling as well as mass transit that connects with the University. Bicycle racks are provided for free. A free shuttle system, to discourage single occupant vehicle travel is also offered.

In addition to numerous electric vehicles utilized as service vehicles by the Trade shops, the Mail-room is using a clean energy vehicle called a NEV (Neighborhood Electric Vehicle). Dining Services has ordered two NEV's.

*Incorporating Green Technologies in New and Renovated Buildings and Leadership in Energy and Environmental Design (LEED)*

All facilities will be constructed to provide minimum energy consumption, maximum maintenance efficiency, consistent with LEED Silver certified levels along with sustainability. Consideration shall be given to active solar design elements for domestic hot water and/or electric and geothermal for HVAC.

The new 78,315 sq. ft. Student Recreation Center achieved LEED Level NC 2.1. LEED Areas: Civil (Erosion & Control) Electrical (Local Energy), Landscape (Storm Water Management), Plumbing (Water Conservation), Lighting (efficiency), Commissioning, Indoor air quality, Architectural (recycled materials), Smart Start Program.

The 52,000 sq. ft. Cali Building will achieve LEED Level NC 2.2. LEED Areas: Civil (Erosion & Control) Electrical (Local Energy), Landscape (Storm Water Management), Lighting (efficiency), Commissioning, Indoor air quality, Architectural (recycled materials), Smart Start Program.

*Landscaping and Stormwater Conservation Programs*

Landscaping for all projects will be provided with the general nature of plantings approved by the University. All plant material should be drought resistant and native to the northern New Jersey area.

Irrigation systems when utilized shall be installed with moisture and rainfall sensors and will operate during the most optimum watering times taking into consideration time of day, humidity, temperature, weather and evapotranspiration.

MSU will consult with and consider joining EPA's Greenscapes Program that offers assistance for sustainable landscaping, water conservation and stormwater management programs.

*Water Conservation*

MSU will attempt to utilize WaterSense products, where appropriate, in the renovation or upgrade of existing buildings as well as in new buildings planned for MSU. The use of WaterSense approved products ensures that MSU will be conserving its precious drinking water sources.

### *Using Coal Combustion Products*

In order to reduce CO2 emissions and save landfill space and energy, MSU intends to use coal combustion products, such as fly ash, in place of portland cement for any new appropriate construction projects. The amount and mixture concentrations of coal combustion products used will be determined at the time of construction.

### **Proper Management of Hazardous and Universal Waste**

#### *Toner and Ink Recycling*

MSU recently launched a laser toner cartridge recycling program through the Central Stores Department. International Laser is called to pick up the cartridges and have them recycled. In 2007, MSU also launched a recycling program in collaboration with Charitable Emporium.com Inc. to recycle all brand name ink toner cartridges. To date several pallets of cartridges have been recycled.

#### *Proper Chemical Management*

MSU was one of the first universities in the country to participate in the USEPA Voluntary Self Audit Program. MSU hired Foster Wheeler to conduct an inspection at MSU and at SOC in 2001/2002. MSU completed its EPA audit and received a "Notice of Determination" August 21, 2003.

MSU has been using the Desktop version of *ChemSW* for several years now to keep track of hazardous materials on campus. The academic labs use the database like a Shoprite Inventory system to manage chemicals for Right-to-Know and Hazcom. MSU recently updated from the Desktop to a Client/Server version (linking the files via Archibus and AutoCAD) with the hope of eventually sharing the inventory as an ArcInfo Geodatabase with University Police and Fire Safety online.

### **C. Status Reporting**

MSU will submit a status report to EPA twice per year starting six months after the official signing of the MOU. The report will include an update on the various activities identified in the agreement. EPA will use this data to determine the environmental benefits associated with MSU's "green" activities.

### **IV. Terms and Conditions**

This MOU is not a contractual or a financial obligation instrument. Nothing in this MOU shall obligate EPA or MSU to expend appropriations or to enter into any contract or other obligations or be cited as the basis for the promise or transfers of funds. Collaboration under this MOU shall be in accordance with applicable statutes and regulations.

This MOU does not restrict EPA or MSU from participating in similar activities or arrangements with other entities or Federal agencies.

Either Party may unilaterally withdraw at any time from this MOU by transmitting a signed writing to that effect to the other Party. By mutual agreement, which may be either formal or informal, the Parties may modify the list of intended activities set forth in Paragraph III, above, and/or determine the practical manner by which the goals, purposes and activities of this MOU will be accomplished. Modification to other written parts of this MOU must be made in writing and signed by both Parties or their designees.

Nothing in this MOU shall be construed to authorize or permit any violation of any Federal, State or local law, including, but not limited to, any environmental law administered and/or enforced by EPA.

MSU agrees that it does not expect, nor will it ever seek to compel from EPA in any judicial forum, the payment of money, services or other thing of value from EPA based upon the terms of this MOU. The foregoing provision does not in any way affect any legal rights accruing to MSU by virtue of any other law, contract and/or assistance agreement.

MSU understands and acknowledges that, as an institution of the Federal Government, EPA has a duty to refrain from providing any commercial entity an exclusive privilege without receiving payment therefore and, as a consequence, that EPA's relationship with MSU in no way affects, alters or otherwise constrains EPA's right to provide similar (or identical) services to, or establish similar (or identical) relationships with, any other entity

MSU understands that EPA's participation in this MOU does not constitute an endorsement, express or implied of (a) any policy advocated by MSU or (b) any goods or services purchased, offered or sold by MSU or any member.

MSU shall maintain full right, title and interest in any intellectual property right, including a copyright, in any work product developed solely by MSU in furtherance of the objectives of this MOU. Any intellectual property developed collaboratively by the Parties will be governed by the Federal Copyright Statute at Title 17 of the United States Code or by the Federal Patent Statute at Title 35 of the United States Code.

The EPA enters into this MOU under the authority of Section 103 of the Clean Air Act, 42 U.S.C. §7403, Section 104 of the Clean Water Act, 33 U.S.C. §1254, and Section 8001 of the Solid Waste Disposal Act, 42 U.S.C. §6981, Section 6604 of the Pollution Prevention Act, and Section 324A of the Energy Policy and Conservation Act, which provide EPA with authority to undertake cooperative efforts with private organizations to promote the coordination and acceleration of research, studies, training, and other efforts to prevent, reduce and eliminate pollution.

This MOU does not create any right or benefit, substantive or procedural, enforceable by law or equity against MSU or EPA, their officers or employees, or any other person. This

MOU does not direct or apply to any person outside of EPA and MSU.

**V. Effective Date and Administration**

This MOU will become effective upon signature by the Regional Administrator of EPA Region 2 and the Provost of Montclair State University or their designees. It may be modified or amended by written agreement between both parties. This MOU will terminate at the end of five (5) years from the date of signature unless revised or extended at that time by written agreement of the parties. It may be terminated at any time by either party upon the issuance of a written notice to the other party. The Parties will review annually the provisions of this MOU and its implementation.

Signed:

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ALAN J. STEINBERG  
Regional Administrator  
U.S. EPA Region 2

\_\_\_\_\_  
RICHARD A. LYNDE  
Provost  
Montclair State University

Date: \_\_\_\_\_

Date: \_\_\_\_\_

JOANN BRENNAN-MCKEE  
Deputy Division Director  
U.S. EPA Region 2

Date: \_\_\_\_\_