

**MEMORANDUM OF UNDERSTANDING (MOU)  
BETWEEN  
THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA)  
AND  
MONMOUTH UNIVERSITY**

**Purpose**

The purpose of this Memorandum of Understanding (MOU) is to document Monmouth University's (hereinafter also referred to as 'Monmouth' or 'University') commitment as an environmental steward that pledges to reduce its carbon footprint and generally contribute to a better environment by partnering with the United States Environmental Protection Agency (EPA). This MOU is intended to be a living document

Monmouth's commitment for continuous improvement involves: using EPA's environmental stewardship programs to develop policies, practices, and specifications for environmental efficiency standards; increasing stewardship awareness; remaining current with EPA regulations and guidelines; increasing involvement and recognition of Monmouth's stakeholders in environmental sustainability programs; partnering with local government on environmental initiatives; and addressing environmental concerns swiftly. Monmouth recognizes EPA's program requirements for outreach and involvement, data collecting and reporting, and will strive to become a recognized leader and a candidate for EPA environmental stewardship awards.

Under this MOU Monmouth will participate in the following voluntary EPA environmental stewardship programs:

- GreenPower Partnership
- ENERGY STAR<sup>®</sup> Building & Plant Partnership
- GreenScapes Partnership
- WasteWise Partnership
- Coal Combustion Products Partnership
- National Clean Diesel Campaign & Clean Construction USA
- WaterSense Products

The sections below briefly describe the voluntary EPA environmental stewardship programs as they apply to Monmouth. The text also highlights some important sustainability initiatives Monmouth has already begun, or is currently planning.

***GreenPower Partnership***

Under this MOU, Monmouth will become an EPA GreenPower Partner. Monmouth has been ***producing*** its own green power since 2005, when it financed and installed a 454 kilowatt solar photovoltaic system on four campus buildings: Bey Hall, Boylan Gymnasium, the Rebecca Stafford Student Center, and the Facilities Management Building. The system was the largest installation at an institution of higher education east of the Mississippi River when it began producing electricity in September of 2005. The system produces approximately 500 megawatt-

hours of electricity each year, and is projected to save the University at least \$2.7 million over 25 years. In addition, the system's solar-generated electricity to date has reduced emissions of carbon dioxide by over 376 tons. This emissions reduction is equivalent to planting nearly 106 acres of trees, or removing 75 cars from the road for a year, or not driving 940,561 miles. The system has also resulted in 1,407 pounds of avoided Nitrogen Oxides and 2,188 pounds of avoided Sulfur Oxides in the atmosphere.

The project was funded in part by a grant from the Clean Energy Program of the New Jersey Board of Public Utilities. The project earned Monmouth University the 2006 New Jersey Clean Energy School of the Year award.

The University is in the process of identifying additional renewable energy opportunities on campus utilizing solar photovoltaic (PV), solar-thermal, geothermal, wind, and the use of alternative fuels where feasible. Potential solar PV projects include; expansion of the existing PV systems; new PV systems on other buildings; and pole mounted or canopy systems in University parking lot areas. External sources of funding are needed to implement future renewable energy projects and the availability and applicability of such funding sources are being evaluated.

The University has also purchased 1000 megawatt hours per year of green power through NewWind Energy. The University is currently evaluating its options for renewing this purchase contract or purchasing other green power under the EPA GreenPower partnership.

### ***ENERGY STAR Building & Plant Partnership***

Under this MOU, Monmouth will become an EPA ENERGY STAR Partner. Monmouth will utilize EPA's program offering within ENERGY STAR Building & Plants entitled "Menu of ENERGY STAR Offerings for Higher Education" (the Menu) as the structure for continuous improvement and to meet or exceed the goal of 10% energy reduction under the program.

Monmouth has implemented many specific energy conservation measures (ECMs) based on energy audits of the major buildings and systems on campus. Domestic water heater temperature in all campus buildings has been reduced, and reflective window film installed in two buildings on campus. All renovated residence halls have been retrofitted with reflective cooled roofs. Mechanical equipment needing replacement or upgrading is done using more energy efficient mechanical equipment as the need arises. In Wilson Hall, burners were upgraded to dual fuel capability enabling the University to heat the building by oil or gas. 2" air filters have been replaced with more efficient filters, saving energy and reducing labor costs because they need to be changed less frequently.

Many lighting upgrade and retrofit projects designed to save energy while maintaining or even improving lighting comfort have been undertaken at Monmouth. Occupancy sensors have been installed in a large number of classrooms to control lighting while rooms are unused. Additional occupancy sensors have been ordered for installation in other buildings. The lighting in Boylan Gymnasium has been upgraded, and lighting upgrades are contemplated in Anacon Hall. Energy saving light bulbs have been installed throughout Wilson Hall; and 25 watt fluorescent bulbs instead of the standard 32 watt fluorescent bulb have been installed in various locations on the

2nd floor of the Student Center. All Exit sign lighting has been replaced with LED signs, and the University is researching the use of LED lighting technology in other areas.

Utilizing Portfolio Manager, EPA's interactive energy management tool, Monmouth will track and assess the energy and water consumption of all major buildings on campus. Monmouth will also determine the energy performance rating of all major buildings on campus. Based on the rating results, Monmouth will establish energy use reduction goals.

### ***GreenScapes Partnership***

Under this MOU, Monmouth will become an EPA GreenScapes Partner. Monmouth will utilize EPA's GreenScapes program to reduce the need to replace landscaping materials and high maintenance plants, work towards reusing landscape materials where possible, recycle organic materials and make decisions to specify and purchase products that are environmentally preferable. Monmouth is also interested in composting and turf management and has visited and will continue to study composting systems similar to that of EPA's MOU Partner, Montclair State University.

Monmouth has instituted a web-based irrigation system at the Larchwood Entrance to adjust irrigation schedules based on need instead of time. In addition, Monmouth is committed to using drought resistant plantings for all future landscaping activities where possible.

Monmouth has incorporated porous pavers and stormwater retention swales into campus projects totaling an estimated 38,000 square feet and is committed to continue to use such methods where applicable in the future. In addition, Monmouth plans to design and construct a rain garden on campus to improve stormwater recharge and stormwater quality.

Monmouth makes the commitment to utilize EPA's GreenScapes Tip Sheets and Re-buy Checklist to develop its own written GreenScapes program by the end of 2009. Monmouth's GreenScapes Program document will be used for continuous improvement and Monmouth will keep records of waste, energy, fertilizers, pesticides and climate change activities related to its grounds keeping efforts.

### ***WasteWise Partnership and Solid Waste Recycling***

Under this MOU, Monmouth will become an EPA WasteWise Partner. The University encourages and enforces recycling programs. Materials recycled include glass, aluminum and bi-metal containers, paper, and cardboard. In addition, an electronic devices recycling program is in place. The University will continue to participate in the RecycleMania event sponsored by EPA.

High efficiency hand dryers have been installed in several locations on campus. In addition to promoting better hygiene, the hand dryers allow the University to decrease its waste stream of paper towels. Installation of these devices in other locations is being evaluated. 100% recycled paper products are used in all restrooms.

The University also strongly encourages its on-site vendors to adopt environmentally sustainable practices. Monmouth's food service vendor uses 100% biodegradable disposable service ware

and certain serving containers; instituted "tray less" service in one of the cafeterias, saving 3 cups of water for every tray, or 260 gallons of water per week; purchases all of their bread, dairy (including ice cream) and produce from local vendors; and recycles aluminum cans and bottles, cardboard and paper.

Under the MOU, Monmouth will work with our vendors to consider the (1) the use of EPA's Food Waste Calculator and (2) composting campus food waste on-site or send it to an off-site composting facility.

### ***Re-Use of Industrial Materials***

Re-use, and re-buy are also a part of Monmouth's planning process for new construction and renovation projects. When possible Monmouth will specify the use of construction materials with recycled material content, materials manufactured locally within a 500 mile radius, and materials with low volatile organic compounds (VOC) off-gassing. In addition, Monmouth will engage construction and demolition debris haulers/recyclers to recycle waste that is generated from new construction and renovation projects. Monmouth University will report on the amount of material re-used or recycled under this MOU for projects initiated after 2011.

The University utilizes the services of a waste management consultant to aid in identifying additional waste management activities.

Under this MOU, Monmouth will work to incorporate many of EPA's tools and targeted initiatives within WasteWise, including the Waste Reduction Model (WARM) to estimate greenhouse gas reductions from its recycling practices; Electronics Challenge to recycle and avoid hazardous materials from entering landfills; Building Challenge to recycle, reuse and reduce construction and demolition materials; and Comprehensive Procurement Guidelines to specify and purchase standard materials containing recycled content. Achievements in this area will be reported under this MOU.

### ***Coal Combustion Products Partnership***

Under this MOU, Monmouth is committing to utilize coal combustion products in all appropriate future construction projects, and will consider joining EPA's Coal Combustion Products Partnership (C2P2). Under the MOU, Monmouth University will report on the amount of coal combustion products used on campus.

### ***National Clean Diesel Campaign & Clean Construction USA***

Under this MOU, Monmouth will join EPA's Clean Construction USA Program to cooperatively promote and implement measures to effectively reduce emissions from vehicles and other internal combustion engines used in construction and operation of its facilities, with a focus on diesel engine emission reductions.

These activities will lead to a measurable decrease in diesel emissions through the following strategies:

#### Campus Operations Vehicles

The University currently utilizes 3 hybrid police vehicles and a solar powered golf cart. In addition, all golf cart replacements will be battery operated instead of gas powered. When older, larger vehicles require replacement, electric and more fuel efficient work vehicles will be utilized.

#### Clean Construction Equipment and Clean Fuel Use

Clean construction equipment reduces pollution from conventional diesel fuel-powered construction vehicles and equipment by requiring the use of Ultra-Low Sulfur Diesel (ULSD) fuel and best available pollution control retrofit technologies. Monmouth will include the use of clean construction equipment and clean fuel use in its specifications for contractors working on future facility construction projects. Clean construction equipment includes retrofit technologies for construction vehicles such as Diesel Particulate Filters (DPFs). In combination with the use of cleaner ULSD fuel, this practice will greatly reduce construction vehicle emissions during construction.

#### Enhanced Idling Reduction

Enhanced idling reduction measures reduce fuel consumption and pollution by setting a reasonable time limit for idling and actively encouraging that this limit be followed. Monmouth will implement idling reduction measures in its own fleet, and encourage its service vendors, contractors, students, faculty and staff to do the same.

#### ***WaterSense Products***

Both Monmouth and EPA recognize the importance of using water efficiently. Water-efficient behaviors and the use of quality products that minimize water use can result in less water drawn from New Jersey resources; reduced energy use and CO<sub>2</sub> emissions related to water treatment and pumping; and reduced water utility costs.

Monmouth has installed water conserving fixtures, shower heads and lavatories throughout campus. A web based irrigation system is in use at the Larchwood Entrance to adjust irrigation schedules based on need instead of time. All future landscaping will utilize drought resistant plantings where possible.

Under this MOU, Monmouth will utilize WaterSense Products, where appropriate. Monmouth also commits to following the WaterSense Guidelines in order to encourage students, faculty, staff and administrators to conserve water; provide EPA with annual water consumption data; and feature WaterSense products on Monmouth's sustainability web page.

#### ***Sustainable Design, Construction and Operations Practices***

Monmouth is committed to incorporating the principles of the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) green building rating system in new and renovated buildings. Two projects whose design was completed several years ago are undergoing evaluation regarding the possibility of achieving LEED certification. They are

the 150,000 square foot Multi-Purpose Activity Center, currently nearing completion, and a planned 45,000 square foot residence hall. If certification cannot be achieved due to previous design constraints and construction schedules, a significant number of LEED principles have been and will be incorporated into each facility.

Green cleaning products are used in several campus facilities. Green cleaning products include glass cleaner, all-purpose cleaner, and floor cleaner. The University intends to consult the EPA's Environmentally Preferable Products list and expand its green cleaning program to cover additional facilities and to include additional cleaning products.

### ***Campus and Community Involvement***

Monmouth takes the environmental and sustainable message to its academic community, the regional neighborhood and national ocean policy community. Its proximity to the Atlantic Ocean and its place in a vibrant coastal tourism region with expanding development gives it unique insights and special responsibilities when it comes to the environment.

Monmouth is committed to community and national service in the ocean policy arena by its top administrators. The UCI Director and the University President serve on the NJ Marine Science Consortium Board. The University President has been a Member of the US Ocean Policy Commission, the Ocean Studies Board and is currently Vice Chair of the national Ocean Research and Resources Advisory Panel and is involved in various security studies related to climate change. The Director is a member of NOAA's Oceans and Human Health National Advisory Committee, has served on a National Research Council panel on Marine Debris and participated with other national coastal and ocean policy experts for the Presidential Transition Team briefing on ocean matters.

In 2005, Monmouth created the Urban Coast Institute (UCI) to analyze and foster debate on ocean and coastal policy issues, particularly along developing coastal lines and watersheds, and highly developed communities and urban coastal areas. It also carries out sponsored grant and foundation funded field studies and research, and seeks opportunities to collaborate with University faculty, students and classroom programs. The Institute, led by the former Executive Director of the national Coastal States Organization, has carried out its policy and *in situ* research missions with funding from philanthropic sources and grants including the Fairleigh S. Dickinson, Jr. Foundation, the US EPA and the National Oceanic and Atmospheric Administration. Additionally, project support has been provided by N.J. Department of Environmental Protection and undertaken in collaboration with municipalities, county and State agencies, the Barnegat Bay Estuary Program and many other partners.

The UCI is a participant in a multi-university Center for Maritime Security Center of Excellence funded by the US Department of Homeland Security and in the Mid- Atlantic Regional Coastal and Ocean Observing System with funding provided by NOAA. The Institute has held state and regional symposia on issues from sustainable coasts and coastal hazards, to climate-induced sea level rise, to beach replenishment and Mid-Atlantic regional governance and ecosystem management. This general theme of vital and sustainable coastal communities in balance with healthy ecosystems is a major thrust that unites Federal and regional/local interests. The Institute

sponsors an annual Ocean Futures Symposium and “Champion of the Ocean” Awards luncheon, which honors leading national, state and community leaders in oceanography and ocean policy for their achievements.

The Institute operates a network of eight (8) near real time coastal and estuarine water sensors to monitor water quality parameters along New Jersey’s central coast. The network integrated into the regional ocean observing system and with NJ DEP’s coastal monitoring network. The data is made available through the websites of the NJ DEP, Monmouth University and Stevens Institute of Technology.

Beginning four years ago, Monmouth offers a major in Marine and Environmental Biology and Policy, which relies on inter-departmental strengths in marine biology, environmental science, business, economics and real estate, public policy, and social sciences. The focus of this rather unique major is to create a foundation of scientific skill on which policy-oriented courses are provided to prepare graduates to enter the regulatory, NGO or commercial development fields. An environmental health course is offered to health studies majors and other interested students. Each winter an environmental studies course is offered in Eleuthera, Bahamas.

Internally, the University created the Energy Resource Management Committee (ERMC) comprised of faculty, students, staff and administrators to promote environmental awareness and identify energy conservation and sustainability practices that could be implemented on campus. Its effectiveness is evident in the many energy efficiency and sustainability projects completed by the University. The ERMC has evolved into a Sustainability Advisory Council (SAC). The SAC will also include Faculty, Administrators, Staff, Students, and on-site service providers, and will propose, research and recommend energy and sustainability policy for operations.

The Monmouth campus has an active student body with over 60 organizations. Students participate in SAC (referenced in paragraph above) and contribute to sustainability efforts through Waterwatch, various beach and estuary clean-up projects, Habitat for Humanity and the Outdoor Clubs. In addition, students have organized for the past nine years a community service day called “The Big Event”, where over 400 students participate in more than 30 worksites which include beach and stream cleanups. Monmouth University students also actively promote and participate in the nationally recognized “Recycle Mania” and “Earth Day” events. Since 2001, Monmouth has held an annual global Understanding Convention with featured guest speakers and programs related to the international environmental matters (e.g. climate matters).

The University intends to develop a sustainability website which will provide the campus and the local community with information on the actions being taken by the University, and will be a resource for available educational programs on energy and environmental sustainability.

### **MOU Status Reporting**

Monmouth will submit an MOU 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 this MOU, and will include the reporting items associated with EPA Partnership Programs. EPA will use this data to determine the environmental benefits associated with Monmouth’s “green” activities and will communicate its findings to Monmouth in a prompt matter.

## **Terms and Conditions**

This MOU is not a contractual or a financial obligation instrument. Nothing in this MOU shall obligate EPA or Monmouth 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 Monmouth 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, each party may modify the list of its intended activities set forth above, and/or determine the practical manner by which its goals, purposes and activities set forth in this MOU will be accomplished. Modification to other written parts of this MOU must be made in writing and signed by both Parties.

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. Access to all documents generated pursuant to the activities set forth in this MOU that constitute agency records for purposes of the Freedom of Information Act (“FOIA”), 5 U.S.C. §552, shall be governed by the provisions of the FOIA.” .

Monmouth 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 Monmouth 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.

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

The parties agree that any copyrightable subject matter, including, but not limited to journal articles, training, educational or informational material or software, created jointly by the parties, from the activities conducted under the MOU may be copyrighted by Monmouth. Monmouth hereby grants to the Government a royalty-free nonexclusive, irrevocable right to reproduce, make derivative works, and publish said copyrightable subject matter arising from 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 and/or by the Federal Patent Statute at Title 35 of the United States Code. Monmouth shall maintain full right, title and interest in any intellectual property right, including a copyright, in any work product developed solely by Monmouth in furtherance of the objectives of this MOU.

This MOU does not authorize Monmouth to use any EPA logo, trademark or other intellectual property without prior approval of EPA. This MOU does not authorize EPA to use any

Monmouth logo, trademark or other intellectual property without the prior approval of Monmouth.

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 Monmouth or EPA, their officers or employees, or any other person. This MOU does not direct or apply to any person outside of EPA and Monmouth.

**Effective Date and Administration**

This MOU will become effective upon signature by the Regional Administrator of EPA Region 2 and the President of Monmouth University. It may be modified or amended by written agreement signed by both parties. Unless otherwise terminated by one of the 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. This MOU 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.

AGREED AND ACCEPTED  
UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY

By:

\_\_\_\_\_

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

AGREED AND ACCEPTED  
MONMOUTH UNIVERSITY

By:

\_\_\_\_\_

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