2010 National Institutes of Health **Sustainability Report**

NATIONAL INSTITUTES OF HEALTH

NEMS

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A Word from the National Institutes of Health Division of Environmental Protection Director

The National Institutes of Health (NIH) strives to be responsible stewards of the environment as part of our mission to improve the health of the nation. In 2010, NIH continued to increase the sustainability of our organization and operations. I am therefore pleased to present the second annual NIH Sustainability Report, which highlights our exciting developments in environmental conservation and employee involvement.

As the premier biomedical research facility, many aspects of NIH operations impact the environment. We recognize that our research is resource-intensive. As a result, our choices can have direct and indirect impacts on human health, the environment, and our community. Through NIH's Environmental Management System (NEMS), we have been proactive in developing innovative strategies to reduce our overall environmental footprint in key Environmental Focus Areas including energy use, water conservation, sustainable building design, and much more.

Most importantly, NIH employees continue to play an integral role in managing and achieving our sustainability objectives. To empower our employees, we continued to educate and engage them through the NEMS Awareness Training, Green Team initiatives, and multifaceted outreach campaigns.

NIH also continued our influential role as a sustainability leader in the Federal government. Inspired by NIH's annual Federal Environmental Symposium, the White House held its inaugural GreenGov Symposium. The three-day event brought together more than 1,200 leaders from Federal, state, and local government, the private sector, academia, and non-profit organizations. It included more than 250 presenters to learn, share, and lead towards meeting the President's sustainability goals.

Moving forward, we will continue to maximize every opportunity to become an even more sustainable organization. We will not rest on our successes, but continue to be a leader in health and environmental stewardship. With the dedication and enthusiasm of the entire NIH community, I am confident that we can achieve even greater successes. I hope that this report not only leaves you informed, but inspired.

My sincere thanks to all of you who are working to green NIH, as it takes all of your support and commitment to achieve great results.

William "Kenny" Floyd

Director, NIH Division of Environmental Protection

EXECUTIVE SUMMARY

The National Institutes of Health's (NIH) commitment to sustainability is a natural extension of our mission to learn more about living systems in order to enhance health, lengthen life, and reduce the burdens of illness and disability.

NIH is at the forefront of sustainability in the Federal government. Our Environmental Policy serves as the foundation for our sustainability initiatives and aligns with the broader U.S. Department of Health and Human Services (HHS) Strategic Sustainability Performance Plan. We achieve our goals through our NIH Environmental Management System (NEMS), which requires each of our 27 Institutes and Centers (ICs) and every employee to contribute and enable us to reach our goals.

In 2010, NIH reduced our environmental impact and increased our sustainability through outreach and training, as well as through efforts in key environmental areas including:

- **Sustainability Outreach and Training:** Reduced our environmental impact by conducting many outreach events for our employees in 2010 including:
  - Saved 108,000 pages of paper during NIH Paper Free Day. NIH encouraged employees to continue paper reduction practices in their activities year-round.
  - Educated more than 800 employees and children on Take Your Child to Work Day during Earth Day 2010.
  - Reduced light use through the distribution of thousands of "Lights Out" light switch plate covers through our "Lights Out" Campaign.
  - Reduced waste and increased recycling through the first Building Recycling Competition, a competition among buildings on the Bethesda Campus to reduce waste and increase recycling.
- **Energy Use:** Conducted energy conservation activities and reduced our energy use per square foot by 21 percent since 2003.
- **Water:** Decreased our water consumption by 19 million gallons or 1.6 percent from 2009 to 2010 and continued to control and treat stormwater discharge.
- **The Natural Environment:** Improved local environmental quality through water efficient landscaping, no mow zones, increases in stream buffer canopy, and other land management practices.
- **Sustainable Building Design and Construction:** Required Leadership in Energy and Environmental Design (LEED) Certified for new construction. The NIH has five registered LEED buildings with 26 existing buildings under assessment for LEED standards.
- **Green Procurement:** Used Green Purchasing Program (GPP) to ensure use of recycled materials and low-energy equipment, and that new products meet EPA Electronic Product Environmental Assessment Tool (EPEAT) standards.
- **Pollution Prevention and Waste Minimization:**
  - Achieved a recycling rate of 60 percent (36 percent if construction debris is not included).
  - Recycled 5611 tons of construction debris.
  - Distributed 6,000 desk-side recycling bins to increase recycling among employees.
  - Recycled 40 percent of all hazardous waste saving $64,292.
  - Increased empty chemical bottle recycling to 5400 pounds per month.
- Transportation, Fleet, and Commuting: Reduced fleet gas consumption by 55 percent through the use of 248 alternative fuel vehicles.

Additionally, our IC Green Teams led our employees to take simple, effective steps to improve our sustainability including:

- Installing energy-efficient office equipment and enabling energy-saving features.
- Encouraging employees to turn off lights and office equipment when not in use.
- Increasing the number of recycling bins, both desk-side and in common areas.
- Promoting reduction in paper use.
- Educating our employees on greening activities through electronic newsletters, intranet sites, and public events.

INTRODUCTION AND BACKGROUND

The National Institutes of Health (NIH), a part of the U.S. Department of Health and Human Services (HHS), is the nation's biomedical research agency and the largest source of medical research funding in the world. At NIH, we make important medical discoveries that save lives. NIH also creates hundreds of thousands of high-quality jobs by funding thousands of scientists in universities and research institutions in every state across America and around the globe.

NIH's vast organization includes 27 Institutes and Centers (ICs), each with a specific research agenda, often focusing on particular diseases or body systems. The Office of the Director is the central office responsible for setting NIH policy and for planning, managing, and coordinating all NIH programs across the ICs.

At NIH, we are not only a leader in medical research, but we are also at the forefront of sustainability in the Federal government. Since many of today's significant health problems are now linked to environmental issues, we view environmental stewardship as an extension of our mission to promote public health. Moreover, NIH incorporates sustainability into our culture through an effective Environmental Management System (NEMS) that involves every NIH employee.

NIH's 2010 Sustainability Report highlights the innovative strides NIH has taken over the past year to continue our leadership in sustainability. The report is organized into three main sections:

1. **Introduction and Background**: Provides an overview of NIH's mission and the facilities critical to achieving our objectives. This section also introduces NIH's Environmental Policy, Environmental Management System, and sustainability goals, while demonstrating how NIH incorporates sustainability into our overall mission and culture.
2. **Environmental Focus Areas**: Details NIH's significant accomplishments spanning many sustainability sectors including energy use, water, the natural environment, sustainable building design and construction, green procurement, pollution prevention and waste minimization, and transportation and fleet.
3. **IC Environmental Initiatives and Accomplishments**: Shares the sustainability practices and outreach efforts that each IC implemented over the past year. Every employee is responsible for NIH's environmental management and the IC activities demonstrate how employee involvement is critical to reaching our sustainability goals.

The NIH Mission

NIH's mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce the burdens of illness and disability.

The goals of the agency are to:

- Foster fundamental creative discoveries, innovative research strategies, and their applications as a basis for ultimately protecting and improving health.
- Develop, maintain, and renew scientific human and physical resources that will ensure the Nation's capability to prevent disease.
- Expand the knowledge base in medical and associated sciences in order to enhance the Nation's economic well-being and ensure a continued high return on the public investment in research.

- Exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.

In realizing these goals, the NIH provides leadership and direction to programs designed to improve the health of the Nation by conducting and supporting research in the:

- Causes, diagnosis, prevention, and cure of human diseases.
- Processes of human growth and development.
- Biological effects of environmental contaminants.
- Understanding of mental, addictive, and physical disorders.
- Direction of programs for the collection, dissemination, and exchange of information in medicine and health, including the development and support of medical libraries and the training of medical librarians and other health information specialists.

The NIH Facility

NIH operates many administrative and research facilities to achieve our mission. We also manage the environmental impact of these facilities to meet our sustainability objectives. The following section provides an overview of some of our most influential facilities. Additionally, many of our sustainability accomplishments discussed in later sections refer back to these buildings.

Bethesda Headquarters

The NIH administrative and clinical research headquarters is located on the 310-acre Bethesda, Maryland campus. The campus consists of approximately 75 buildings and 12 million square feet of energy-intensive offices, laboratories, clinical center space, and parking garages.

The diverse campus includes NIH employees, visiting research fellows, intramural research trainees, and contractor personnel who provide cafeteria, bank, and janitorial services. The key activities include laboratory research, clinical center activities, office and administrative work, animal care, procurement, grants management, general research services, building operations, maintenance, construction, renovation, and demolition.

Our extensive Bethesda facilities consume significant resources and generate large amounts of waste, including:

- An annual energy use of 332,614 Megawatt hours (MWh), with accompanying fossil fuel consumption producing air and greenhouse gas (GHG) emissions.
- The weekly generation of approximately 95 tons of solid waste, 17 tons of medical waste, 0.5 tons of radioactive waste, and 6 tons of hazardous waste.
- Stormwater and wastewater into local waterways of the Chesapeake Bay Watershed.

In addition to the main NIH campus, NIH maintains key installations in:

- Rocky Mountain Laboratories in Hamilton, Montana.
- Poolesville, Baltimore, and Frederick, Maryland.
- Research Triangle Park, North Carolina.
- A variety of smaller facilities throughout the country.
- Leased space in over 30 locations in the Bethesda and Rockville area of Montgomery County, Maryland.

The section below highlights the Rocky Mountain Laboratories, Baltimore, Frederick, and Research Triangle Park facilities. Insight into these key facilities provides an understanding of NIH's impact, both in health and the environment.

Rocky Mountain Laboratories

Rocky Mountain Laboratories (RML) operates under the National Institute of Allergy and Infectious Diseases (NIAID) Division of Intramural Research (DIR). For more than 80 years RML has been devoted to researching infectious diseases and continues to contribute to national initiatives with high-impact pathogens. RML's mission is to lead the nation's efforts in the development of diagnostics, vaccines, and therapeutics to combat emerging and re-emerging infectious diseases.

The RML facility, with approximately 350 employees, is located near the downtown area of Hamilton in West-Central Montana. The facility consists of a campus that incorporates 40 buildings, making RML one of the largest features of Hamilton.

Baltimore Maryland

NIH operations in the Baltimore, Maryland area are concentrated at the Johns Hopkins Bayview Medical Center (JHBMC) and include staff of three ICs: the National Institute on Aging (NIA), the National Institute on Drug Abuse (NIDA), and the National Human Genome Research Institute (NHGRI).

The Bayview campus includes approximately 720 employees, contractors, and other researchers from NIA, about 460 employees from NIDA, and a limited number of office personnel supporting the NHGRI Inherited Disease Research Branch.

NCI-Frederick

The National Cancer Institute at Frederick (NCI-Frederick) is one of two NCI campuses. The NCI's Frederick campus is located within Fort Detrick, a U.S. Army base in Frederick, Maryland. NCI-Frederick researches the causes of cancer, AIDS, and related diseases. More than 100 scientists are investigating the genetic, molecular, environmental, and behavioral factors that contribute to human cancers, as well as identifying new targets for cancer diagnosis, treatment, and prevention. NCI-Frederick also provides core scientific expertise and advanced technology development to NCI, the National Institute for Allergy and Infectious Diseases (NIAID), other components of NIH via the Advanced Technology Program (ATP), and other programs.

The NCI-Frederick facility currently maintains 107 buildings on 70 acres, totaling 1.2 million square feet of gross floor space. The buildings were constructed from 1940-1990 and are used mainly for office-related activities, warehouse and distribution operations, storage, and laboratory operations. Although NCI-Frederick owns the 70 acres, certain services such as steam, electricity, potable water, sanitary sewer, solid waste disposal, and stormwater management, are provided to NCI-Frederick by the United States Army Garrison. Currently, NCI-Frederick employs 2,000 people, including contractors.

Research Triangle Park

NIH's Research Triangle Park (RTP) facility is home to the National Institute of Environmental Health Sciences (NIEHS), which includes the National Toxicology Program (NTP), the nation's premier program for the testing and evaluation of environmental agents. The mission of the NIEHS is to reduce the burden of human illness and disability by understanding how the environment influences the development and progression of human disease.

The NIEHS site includes more than 1,500 people and two campuses in RTP, comprised of 1.1 million square feet of laboratory and office space on nearly 400 acres of land.

The NIH Environmental Policy

NIH is committed to the protection of the environment and the responsible use of natural resources as part of our pursuit to promote health. The NIH community embraces pollution prevention and sustainable development while continually seeking to reduce resource consumption. Specifically, NIH is committed to:

- Complying with all Federal, state, and local environmental laws and regulations, as well as Executive Orders.
- Preventing pollution by minimizing the generation of waste where possible, reducing and recycling materials, and, where necessary, disposing of wastes in an environmentally responsible manner.
- Integrating environmental and health considerations into decision-making processes through the implementation of the NIH Enviromental Management System (NEMS).
- Continual improvement of the NEMS to better our environmental performance by setting sustainability goals, measuring progress, taking corrective action when necessary, and communicating the results to the NIH management and staff.

All employees of NIH are responsible for being aware of the environmental and health impacts of their jobs and for continually striving to minimize those impacts as set forth in this policy.

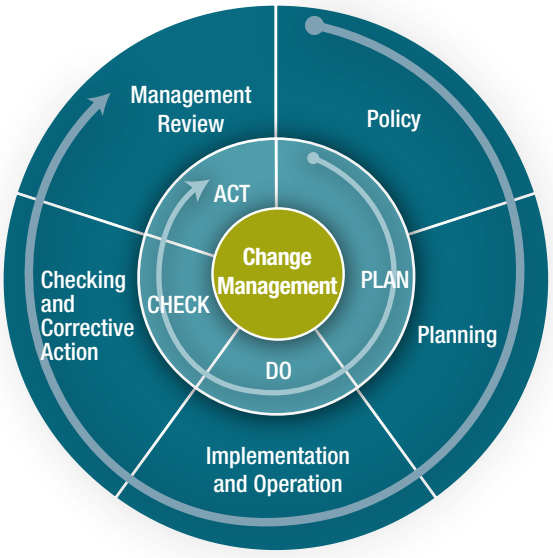
The NIH Environmental Management System (NEMS)

The NEMS is our vehicle for managing and achieving our sustainability goals. An Environmental Management System (EMS) is a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency. The NEMS framework conforms to the International Organization for Standardization (ISO) 14001 for environmental management and consists of four phases: planning, doing, checking, and acting (or improving). This framework is often referred to as a Plan-Do-Check-Act cycle. The cycle takes place annually to ensure there is a continuous evaluation and improvement process.

The NEMS covers all activities at the NIH Bethesda campus, the NIH Animal Center in Poolesville, Maryland, and in Rockville, Maryland. Other NIH sites are developing their own EMSs, including NIH's Rocky Mountain Laboratories in Hamilton, Montana, the NIEHS Facility in Research Triangle Park, North Carolina, the NIH facility in Baltimore, Maryland, and the National Cancer Institute in Frederick, Maryland.

The structure of the NEMS includes the Division of Environmental Protection (DEP) in the Office of Research Facilities, the Sustainability Management Team (SMT), IC Green Teams, the NIH Green Team Leads Council (GTLC), the Sustainable Lab Practices Working Group (SLPWG), and other working groups.

- The NEMS is facilitated by DEP. This Division is also responsible for ensuring that NIH is compliant with appropriate environmental laws and regulations.
- The SMT oversees the NEMS and consists of senior managers from across NIH. Their leadership ensures that sustainability efforts are successfully deployed throughout the organization.
- Playing an integral role in the NEMS is each IC's Green Team. These Green Teams identify the most pressing environmental issues for their individual ICs, set goals to address those issues, make changes in how activities are conducted, and track the resulting improvements.
- IC Green Team Leads form the GTLC. This group meets once a month to discuss ideas, collaborate on common objectives and initiatives, and share best practices.
- The SLPWG leads the effort to green NIH laboratories and convenes staff from DEP and the NIH research and clinical communities. The SLPWG examines laboratory practices, sets objectives, and develops realistic and reliable sustainable procedures for greening NIH laboratories.
- The working groups address activities particular to a functional area and work to identify ways to improve how those activities are conducted.



Sustainability and Executive Order 13514

NIH's Environmental Policy and NEMS align with all relevant environmental Executive Orders. On October 5, 2009, President Barack Obama signed Executive Order (EO) 13514, *Federal Leadership in Environmental, Energy, and Economic Performance,* committing the Federal government to take a leadership role in promoting sustainability and responding to climate change. In part, EO 13514 required each agency to develop a Strategic Sustainability Performance Plan with sustainability goals and targets, including greenhouse gas reduction targets.

HHS released its first Strategic Sustainability Performance Plan on June 2, 2010. Recognizing that sustainability is integral to the HHS mission, HHS assumed a leadership role in promoting sustainability initiatives related to health and well-being. The objectives of the plan not only address sustainability goals such as reduction in energy and water use, but also focus on improving health by researching and developing new technologies.

The main goals of the HHS Strategic Sustainability Performance Plan are to:

- Reduce greenhouse gas emissions through technological, programmatic, and behavioral change.
- Conserve resources by increasing energy and water efficiency, and through sustainable purchasing, operations, and waste management.
- Protect and promote human and environmental health through sustainable facility management and community design.
- Maximize return on investment by integrating the health, environmental, and economic aspects of green healthcare institutions.
- Lead and engage stakeholders to promote health for our employees, patients, and community at large.

NIH's goals align with the HHS sustainability goals and EO 13514, while also reinforcing our mission and the existing NIH Environmental Policy. Specifically, NIH established goals to:

- Improve energy efficiency and management.
- Reduce greenhouse gas emissions.
- Build and maintain high-performance, sustainable buildings.
- Incorporate advanced local and regional integrated planning.
- Improve water use efficiency and management.
- Prevent pollution and minimize waste.
- Purchase sustainable products and services.
- Maximize electronics stewardship.
- Pursue cost-effective and innovative strategies to improve our sustainability as an agency.

National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA) established Federal policies for protecting the environment. The goal of NEPA is:

> "To declare national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation..."

NEPA requires Federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions.

The NIH Division of Environmental Protection's (DEP) Environmental Quality Branch (EQB) has reviewed and made decisions on 64 projects in the past two years. EQB has also started Environmental Assessments (EA) for 18 American Recovery and Reinvestment Act (ARRA) funded grants. Six of the 18 have had Finding of No Significant Impacts (FONSI) signed and are now complete. During the EA process EQB monitors the progress and provides comments on all draft and final reports. EQB also contacts appropriate state and Federal agencies during the EA writing process to determine any local or state historical property issues, as well as any Federally or state-listed endangered species.

The remaining proposed actions that do not require an EA are either Categorically Excluded (CatEx) or are addressed within another environmental document. All CatEx's are provided with memos with the appropriate signatures and allowed to proceed with the planned action. All actions are still moving forward as planned and have not been delayed by the NEPA process.

Outreach and Training

In the same way that NIH recognizes that successful biomedical research depends on the talent and dedication of our scientific workforce, we know that successful environmental management depends on employee involvement. Each NIH employee is

responsible for NIH's sustainability goals. Therefore NIH educates our employees on their role in our sustainability initiatives.

NIH Outreach

The NEMS website, nems.nih.gov, serves as the hub of information for NIH's environmental strategy, the NEMS, programs and initiatives, and team progress updates.

Additionally, NIH's environmental outreach efforts involve many tools, such as:

- Posters, fliers, and fact sheets that raise awareness of NIH's environmental impacts and promote sustainable behaviors.
- NIH newsletters, including the NIH Record, The Catalyst, and NEMS News, that inform employees of current greening efforts and how to get more involved.
- NIH GREENSERVE, an active listserv that allows employee to share ideas, successes, and concerns, as well as publicize environmental events.

Training Opportunities

NIH requires employees to take the NEMS Awareness Training program annually. This training reviews the NIH Environmental Policy, describes how the NEMS works, and discusses ways for an individual to reduce impacts on the environment. A web-based version of the NEMS Awareness Training is available for public review on the NEMS website and may be accessed through the HHS Learning Portal for employees.

NIH also requires various job-specific trainings for employees that carry out tasks with significant environmental implications. These trainings may not focus primarily on the environment, but include how a job should be performed to be protective of the environment.

IC Initiatives

NIH offers outreach tools to support IC sustainability goals including:

- *Greening Your NIH Institute or Center: A How-To Guide* that provides a step-by-step workbook that IC Green Teams use to guide them through the greening process. IC Green Teams are encouraged to use this systematic approach to examine activities and processes occurring within their IC, identify objectives to improve those processes, prioritize their objectives, and develop tools to green those activities.
- Go Greener Challenges that enable ICs to baseline the sustainability of current operations and then identify opportunities for improvement. The Challenges provide metrics and evaluation tools to track progress towards sustainability objectives. ICs then use this data to analyze their current environmental impact and prioritize future goals.

The *IC Initiatives and Accomplishments* section highlights numerous outreach and training initiatives implemented throughout the ICs.

Event Outreach

NIH also hosts many events, some of which are available to the larger Federal community and the public. The following is a selection of the events that took place in 2010:

- **Earth Day Celebration:** NIH continued this annual April event that features nature and stream walks, green roof demonstrations, and an interactive stormwater demonstration. ICs host tables to educate participants on environmental protection issues including alternative transportation options, recycling, radiation and chemical safety, laboratory greening, and waste reduction. The event itself is a zero-waste event. Over 800 adults and children participate in this event every year. NIH celebrates Earth Day in conjunction with Take Your Child to Work Day. At the Earth Day celebration, children participate in activities such as an environmental quiz, a solar oven pizza contest, and planting activities.
- **America Recycles Day:** NIH continued our participation in this national day of recycling, held in November, with a comprehensive recycling drive. ICs set up locations to collect batteries, sneakers, eyeglasses, cell phones, VHS tapes, CDs, and more.
- **NIH Paper Free Day:** The NIH GTLC sets common goals each year that all 27 ICs work jointly to accomplish through the NEMS. GTLC set goals for 2010 that included reducing paper use at NIH and implementing a plan to achieve this behavior change. The result was the NIH Paper Free campaign that included the first NIH Paper Free Day on May 25, 2010. NIH posted extensive information on the NEMS website including FAQs and fact sheets

to reduce printing. NIH also held events at 14 separate NIH locations throughout Maryland on NIH Paper Free Day. All NIH employees were challenged to, "Think before you print." The Council estimated that employees may print between 6,500-9,000 sheets a year depending on job functions. The Council estimates that if just 1 in 5 employees participated, NIH saved 108,000 sheets in one day. This translates into financial savings as well as environmental savings by reducing greenhouse gas emissions, energy use, air and water pollution, and deforestation associated with paper generation and printing. NIH archived the campaign and its tools on the NEMS website so that the event can be easily adapted by other agencies for their own efforts.

- **"Lights Out" Campaign and Energy Conservation Month:** The GTLC established The "Lights Out" Campaign as another joint goal for the ICs. The ORS Green Team developed "Lights Out" stickers for light switch covers to remind employees to turn off the lights when leaving an area. NIH distributed several thousand to all IC Green Teams through the GTLC and ICs affixed the stickers to light switches throughout campus. In October, NIH educated employees on energy use and reduction through fact-filled posters, newsletters, and web updates.
- **Inaugural GreenGov Symposium:** NIH participated in this three-day event inspired by NIH's Federal Environmental Symposium. Held at the George Washington University, the event brought together more than 1,200 leaders from Federal, state, and local government, the private sector, academia, and non-profit organizations. It included more than 250 presenters, to learn, share, and lead towards meeting the President's sustainability goals.

Laboratory Greening

Laboratory activities are central to NIH's mission and sustainability goals. NIH strives to conduct laboratory activities with the least amount of impact to human health and the environment. In 2010, the SLPWG took great steps to increase the awareness and participation of the scientific community in greening laboratory activities.

The SLPWG was a special exhibitor at the 2010 NIH Research Festival. This annual fall event includes the display of hundreds of research posters and 3-4 sessions on 24 broad research categories. DEP, the GTLC, and the SLPWG highlighted the role of the NEMS in greening NIH and shared updates on sustainability initiatives.

Additionally, the SLPWG spearheaded a pilot program of Green Lab Fairs, in collaboration with DEP and the GTLC. The National Institute of Neurological Disorders and Stroke (NINDS), the National Institute of Human Genome Research Institute (NHGRI), and the National Institute on Deafness and Other Communicative Disorders (NIDCD) hosted the first Green Lab Fairs to promote initiatives such as green procurement, toxic chemical reduction, recycling in the laboratory, and energy conservation. The highly successful fairs brought together the NIH scientific community, internal divisions, such as DEP and the Division of Occupational Health and Safety, and outside vendors leading the way in green chemistry supplies and products. The fairs prompted laboratories to share green ideas and helped them understand the overall NEMS framework, including the role of the SLPWG and IC GTLC. Due to considerable interest, the Green Lab Fairs pilot program will be widely expanded in 2011 across the NIH Bethesda campus and other locations in Montgomery County and become an annual NIH event.

NIH also made tremendous progress in reducing the use of toxic materials and the generation of laboratory wastes as shown in the *Pollution Prevention and Waste Minimization* section.

ENVIRONMENTAL FOCUS AREAS

As part of our Environmental Policy and the NEMS, NIH identified environmental focus areas that are instrumental to achieving NIH's sustainability goals. This section of the report highlights 2010 developments in these key sectors.

Energy Use

Effective energy management is a high priority for NIH, due to substantial energy requirements needed to fulfill our research mission. We have conducted energy conservation activities for many years and reduced our energy use per square foot by 21 percent. We are on solid ground to reach the 2015 reduction goal of 30 percent, as required by EO13514.

Year	kBTUs*/sq ft
2003 (baseline)	470.4
2010	371.02

*Thousand British Thermal units

Energy Conservation

NIH performed all energy and water conservation work using performance contracts. The two main contracts include the U.S. Department of Energy Super Energy Savings Performance Contracts (ESPC) and the Bethesda area Utility Energy Services Contracts (UESC) provided by Pepco power company and Washington Gas.

The NIH Bethesda campus has two UESC's recently underway including an initial phase of retro-commissioning and a second phase of a building controls project. In fiscal year 2010 (FY 10) a new ESPC was developed for Frederick. The previous Basic Ordering Agreement with Constellation Energy and Allegheny Power expired, so a new ESPC is required to look for more savings. This ESPC is expected to be signed in FY 11.

Each year, we comprehensively examine our buildings and equipment for all potential retrofits to create water, electricity, and/or steam savings. In 2010 we installed or began construction on the following retrofits and capital improvements:

- Air handling control.
- Lighting systems, including new technologies like light-emitting diodes (LED).
- Heating, ventilation, and air conditioning system control valves.
- Variable frequency drives.
- Digital control systems.
- Building retro-commissioning.

Data Analysis

To measure the success of our energy conservation efforts, NIH instituted the Office of Management Dashboard, a software system to monitor energy consumption and energy costs by month. Designed to give management visibility into consumption, the system enables NIH to compare actual data to original projections.

Over time, NIH plans to increase and enhance this type of analysis by including similar data for each building. Existing building utility meters for electricity, steam, chilled water, and domestic water will be leveraged and analyzed in a similar fashion to the campus as a whole. To achieve this, the analysis will view projected energy use and cost and compare that with real time actual energy use and computed costs.

Additionally, NIH plans to use this data within our current Global Information System (GIS) efforts on campus. The energy data mentioned above discerned from each building will be fed into a geo-spacial campus map. This map will be color coded for energy use and energy intensity by using colors to differentiate low, medium, and high energy use.

To support data management, NIH began development on an Access-based, geo-spatially referenced data management tool (DMT) that will automate the calculations in the 2010 Technical Support Document (TSD) for EO 13514 implementation. The DMT supports several of our goals and sub-goals by providing query-

NIH Sustainability Goals

- Reduce energy intensity 30% from 2003 baseline by 2015.

driven sustainability metrics for ease of monitoring and efficient reporting, while ensuring data consistency and accuracy, as well as transparency of the data collection, calculation, and reporting process. The DMT is flexible enough to accommodate a variety of reporting requirements on both a fiscal year and calendar year basis. NIH will complete the design phase and launch the DMT officially by mid-September 2011. The DMT will be the foundation of NIH's FY 11 reporting for EO 13514 implementation and compliance and mandatory reporting for the Environmental Protection Agency (EPA) GHG Reporting Rule. Underlying the FY 10 emissions numbers will be a verifiable audit trail of raw activity data, normalized and validated for accuracy, for each emissions source at NIH.

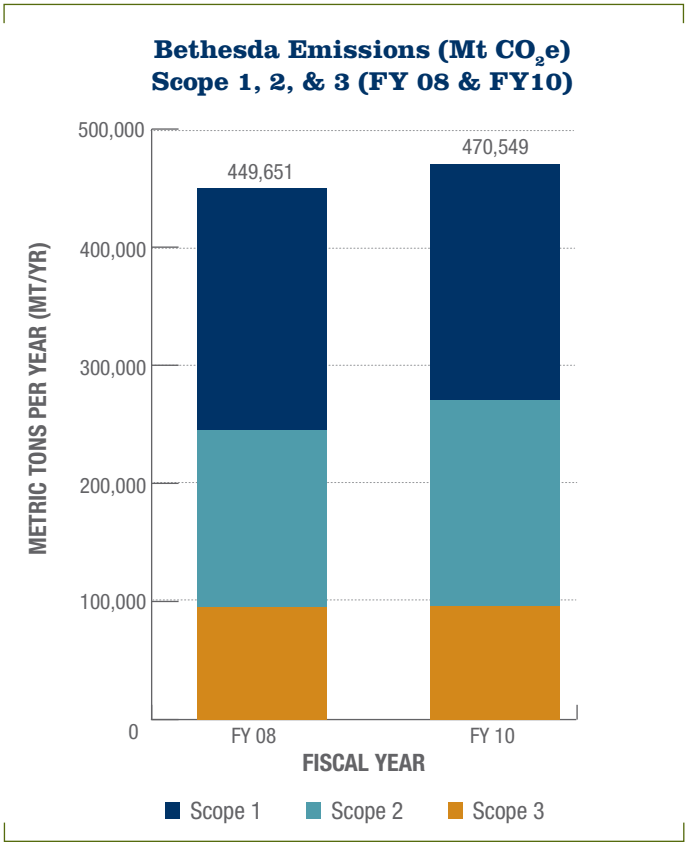
GHGs

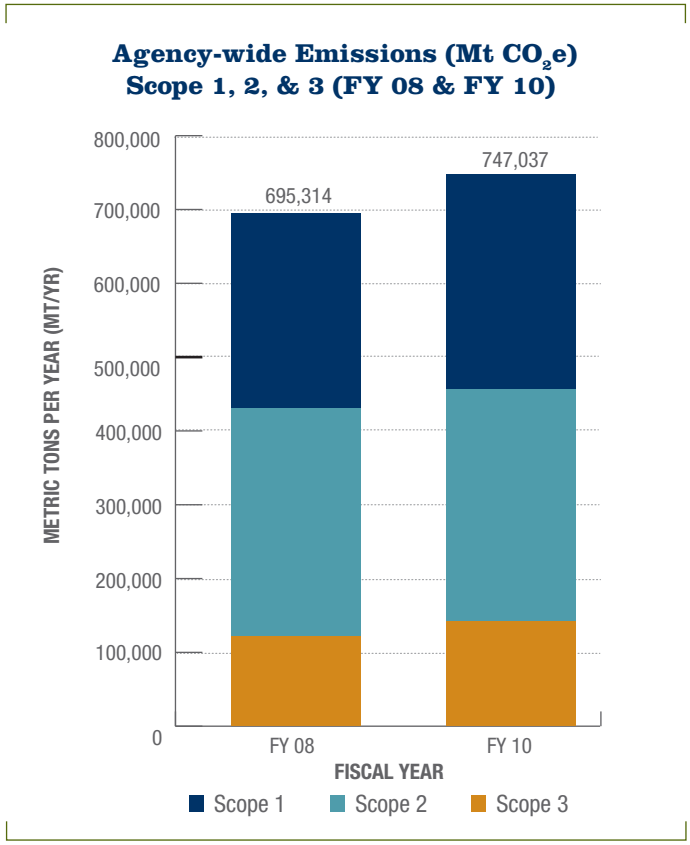
This year, NIH advanced our GHG accounting efforts significantly by establishing a more complete, accurate, and transparent accounting of absolute and relative GHG emissions. Our estimated FY 08 Base Year and audited FY 10 inventory now includes the main Bethesda campus, all six NIH field stations, and leased facilities.

The graphic at below illustrates the breakdown of Scope 1, 2, and 3 emissions for the FY 08 Base Year and FY 10 inventory for the Bethesda campus. Scope 1 emissions are those emissions that occur directly from activities at NIH. For example, scope 1 emissions occur when we run our boiler plant and operate our fleet vehicles. Scope 2 emissions are those emissions that occur during the production of the large quantity of electricity that NIH procures each day. Scope 3 emissions encompass all other emissions that are indirectly associated with our work activities. Some examples of these emissions include those generated during the production of goods we purchase, contract vehicle use, employee travel, product use, and waste disposal.

The results of the FY 08 Base Year analysis, based on the Federal Energy Management Program (FEMP) version 1.6 emissions calculation formulas, indicate that the Bethesda campus produced 449,651 metric tons (Mt) of carbon dioxide-equivalents (CO_2e). The results of the FY 10 inventory for Bethesda indicate that the campus produced 470,549 Mt CO_2e.

The results for our NIH agency-wide FY 08 Base Year analysis and FY 10 inventory indicate that the agency produced 695,314 Mt CO_2e emissions in FY 08 and 747,037 Mt CO_2e in FY 10. The graphic below illustrates the breakdown of Scope 1, 2, and 3 emissions for all of NIH, including our main campus, six field stations, and all leased properties. This emissions based on outputs from the FEMP





Workbook, Version 1.6, confirms the urgency of meeting energy intensity, renewable energy investment, and energy conservation targets as fundamental to reducing NIH's absolute GHG emissions and slowing down our current annual rate of emissions growth.

In addition to energy conservation efforts, our cogeneration plant continued to be a significant source of self-generated energy on campus that resulted in a significant reduction in both overall emissions and GHG emissions. The thermal portion of a combined heat and power system is a renewable source. The cogeneration system operates at base load to generate 21.3 net megawatts of electricity and 105,000 pounds per hour of steam, and has the capability of generating 180,000 pounds per hour of steam using auxiliary firing. Cogeneration base load production supplies approximately 150 million kilowatt hours (kWh), and 820 million pounds of steam, representing approximately 35 percent of campus' electricity and steam load current average. Cogeneration energy savings are 640 billion British Thermal Units (BTUs) per year (the equivalent of the energy used in approximately 5,000 homes in a year). Going forward, our cogeneration system will also reduce our overall emissions by approximately 600 tons per year, when compared to the separate steam generation in a new boiler and generation of electricity by typical existing regulated utility equipment. The cogeneration unit also reduces CO_2 emissions, a GHG, by approximately 100,000 tons per year.

Looking ahead, another major renewable initiative will be studied at Rocky Mountain Labs (RML). NIH will study a biomass boiler for the RML central plant. NIH aims to complete this study in FY 11-12 time frame.

Water

NIH Sustainability Goals

- Reduce water intensity 20% from 2007 baseline by 2015.

NIH continued to evaluate water consumption and identify strategies to reduce our water use. We use significant amounts of water resources in our daily operations and discharge treated wastewater into the sewer system each day. In 2010, NIH decreased our water consumption by 1.6 percent to 1189 million gallons from 1208 million gallons in 2009. However, when 2010 is compared to the 2007 baseline year, overall water has increased by 10.5 percent. When considering water consumption by gallons per square foot, it has increased to a lesser degree from 66.5 percent to 71.0 percent, an increase of 5.8 percent. NIH continues to identify the causes of the increase in consumption and seeks additional opportunities to conserve water.

Water Conservation Projects

NIH incorporated water conservation measures into energy conservation projects to reduce overall consumption. In 2010 NIH:

- Replaced toilets with low-consumption toilets and valves, urinals with waterless or low gallons per flush (GPF) units and valves, and sinks with low-flow faucets.
- Implemented water conserving technologies in medical process systems such as autoclaves, sterilizers, film processors, and lasers.
- Completed study on water conservation systems including heat exchangers and reverse osmosis and set groundwork for project initiation in FY 11.

Additionally, NIH continued to implement strict measures to ensure NIH facility wastewater discharge does not contain chemical residues from research activities.

The Natural Environment

NIH views restoring and protecting the health and beauty of our land, water, plants, and wildlife as a fundamental responsibility. Across our various locations, NIH has over 900 acres of developed land, urban forest, lawn, pastures, no-mow (natural) areas, and ponds. NIH property supports diverse animal populations and provides a natural oasis from the heavily developed environment around the NIH facility.

Our 2010 natural environment accomplishments include:

- Identified and inventoried Bethesda campus no-mow zones and inputted data into our GIS system to update existing data.
- Conducted weekly stream and headwall monitoring, totally approximately 50 inspections conducted on a weekly basis.
- Maintained formal contractor responsibilities, signed transfer of Authorizations, and included Formal contractor responsibilities on all SSEC drawings.
- DEP staff conducted Maryland Erosion and Sediment Control Inspections on NIH construction sites.
- Initiated Revision of NIH Institutional Stormwater Management Plan (ISWMP), while keeping banking credits current.
- Began to remedy several fuel storage tanks deficiencies found during a late 2009 inspection at both the Bethesda and Poolesville campuses, with the goal of full compliance by the required inspections in 2012.
- Continued to increase the stream buffer canopy and forest floor duff layer.
- Enhanced wildlife habitat and species biodiversity, with no net loss of trees, and established a 20 percent (62 acres) forest

NIH Sustainability Goals

- By 2020, improve local environmental quality through water efficient landscaping and land management practices that reduce erosion concerns and releases at all NIH sites.

canopy. The Bethesda campus alone has over 7,000 trees and 140 tree species.

- Installed over 60 bird and bat houses on campus with 20-40 foot tree snags left in place for wildlife habitat.
- Continued to employ an Integrated Pest Management Plan which eliminates of the use of harmful herbicides, pesticides, and fertilizers.
- Maintained landscaping practices to include primarily native plants, since native plants have adapted to the local conditions and therefore do not require the irrigation and chemical use of many non-native species.
- Montgomery County initiated the construction of an above-ground South Pond with an anticipated 2012 completion date. This pond, along with previous stream improvements and North Pond construction, form the backbone of the ISWMP.

Stormwater

As one of Montgomery County's largest facilities, NIH must manage the quantity and quality of the water running off our property and entering the local streams and rivers, particularly into the Chesapeake Bay.

As rainwater runs across streets and lawns, it picks up oils, fertilizers, and other pollutants. Polluted rainwater then pours into the storm drains. These storm drains empty into our streams, then Rock Creek, then the Potomac River, and eventually into the Chesapeake Bay. The ISWMP provides the basic means for stormwater management. Forests and no-mow zones along stream banks improve stormwater quality by filtering out contaminants that would otherwise find their way to the Bay.

NIH continually evaluates and increases no-mow areas. Additionally, NIH ensures that we do not allow trash, chemicals, or oils to be washed down the storm drains. NIH conducts routine inspections of our construction sites to ensure they meet Maryland Department of the Environment requirements for stormwater management and erosion and sediment control.

NIH inspects stream and adjacent headwalls on a weekly basis to ensure all discharges into the stream meet criteria set by the NIH National Pollutant Discharge Elimination System permit. When discovered, NIH traces non-complying discharges to their source and repairs them as necessary. The stream is also checked in the event of a "spill" on the NIH campus which could reach the storm drain system. The inspection includes a visual survey of the stream and outfall conditions to ensure water and environmental quality along the stream. NIH monitors the stream under different conditions to be able to make accurate estimations of what might be affecting the stream at that time. Major storage areas on NIH's campus are also inspected to ensure that all stockpiles are protected from weather and no run-off condition exists that poses a threat to stormwater quality.

In the future ISWMP will include green roofs, filters, and the disconnection of roof drains in all new development. For example, the Porter Neuroscience Research Center (PNRC) Phase II project will have a green roof, pervious pavers, and roof drain disconnection to address its stormwater management requirement.

Sustainable Building Design and Construction

NIH Sustainability Goals

- Leadership in Energy and Environmental Design (LEED) Platinum standard or better by 2020 for all new construction and renovation.

NIH established a sustainable building program across all of our campuses to implement sustainable practices in the management of building design, construction, renovation, procurement, landscape, energy and water use, waste, emissions, transportation, human health, and productivity.

NIH incorporated sustainable features into our existing natural landscape and buildings. NIH established a standard to only plant vegetation that has low water and pesticide needs and generates minimum plant trimmings. No irrigation systems are used for our campus landscape plantings. Additionally, we continued to select only sustainable construction materials and products by evaluating several characteristics, such as reused and recycled content, zero or low-emitters of harmful air emissions, zero or low toxicity, sustainably harvested materials, high recyclability, durability, longevity, and local production. These products promote resource conservation and efficiency and divert waste from landfills.

NIH implemented a policy that NIH certifies all new buildings through

a third party sustainability rating system such as Leadership in Energy and Environmental Design (LEED). Additionally, NIH began evaluating all of our buildings to identify possible modifications to make existing structures meet LEED certification criteria. Currently, NIH has started construction on five new, LEED-registered buildings.

A great example of NIH's commitment to sustainability is the new PNRC II, located on the NIH Bethesda, Maryland, campus. NIH designed the LEED certified facility to achieve significant water and energy savings. Some of the innovative features designed for this building include:

- High-efficiency lighting systems with advanced lighting controls, including motion sensors tied to dimmable lighting controls, and innovative and efficient laboratory lighting design.
- Light Emitting Diodes (LEDs) in exterior lighting and task lighting, which reduces general overhead light levels.
- Photovoltaic cells.
- Energy-efficient heat and cooling system and thermally efficient building shell.
- High efficiency chilled beam systems, in lieu of double ducted air system, to deliver an estimated 20 percent energy efficiency improvement.
- Low-flow plumbing fixtures such as toilets, urinals, and faucets.
- Green roofing, which will reduce rainwater runoff and reduce cooling loads for the building.
- Light colors for roofing and wall finish materials.
- High R-value wall and ceiling insulation.
- Minimal glass on east and west exposures.
- Ground source heat pump system that will provide approximately 60 tons of free cooling to the building using the lower temperature ground water from drilled wells in lieu of chilled water.
- Recycling of at least 75 percent of construction waste.

Throughout this construction, NIH maintains a solid record of responsible compliance with environmental and safety regulations and a proven effective system of environmental management accountability.

While a reduction in funding levels limited some recent construction and sustainability efforts, NIH continues to plan for green design opportunities in the future. With insertion of American Recovery and Reinvestment Act funds, NIH initiated projects such as the PNRC Phase II and incorporated sustainable features. Additionally, NIH is currently working with HHS on sustainability features for leased space. Furthermore, NIH's construction strategies and design techniques will serve as guide to other Federal agencies and the public in the future.

Green Procurement

Green procurement is the purchase of products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This includes identifying and procuring recycled-content products, ENERGY STAR® and energy-efficient products, water-efficient products, alternative fuel vehicles and alternative fuels, bio based products, and products made with no or low chemicals.

NIH Sustainability Goals

- Review and revise contracts to meet sustainable acquisition regulations: 90 percent of contracts in FY 10 and 95 percent of contracts in FY 11.
- Ensure 95 percent of new contract actions for products and services are energy-efficient.
- Ensure procurement preference for EPEAT-registered electronic products.

HHS's Affirmative Procurement Plan (APP) provides the foundation for NIH to consider and integrate environmentally friendly or green products and services into their daily activities. The goal of HHS's APP is to reduce the adverse environmental impact of our purchasing decisions by buying products and services from manufacturers and vendors who share a commitment to protect human health and the environment. By including environmental considerations into purchasing decisions, along with the traditional focus on price, quality, performance, and availability, HHS and its Operating Divisions remain fiscally responsible while promoting practices that improve public health and reduce adverse environmental impacts.

NIH's Green Purchasing Program (GPP) builds upon HHS's APP and Executive Order (EO) 13423 and 13514 requirements. As part of NIH's efforts to integrate green procurement into daily operations and meet Agency and EO goals and objectives, our green procurement activities are actively taking place across the ICs. NIH's ICs purchase 100 percent post-consumer recycled-content paper from the NIH Self Service Store and post-consumer recycled-content office supplies from the NIH Supply Catalog. In addition, NIH ICs are procuring ENERGY STAR® and EPEAT Silver/Gold rated computers and printers and configuring the power saving features to decrease energy use.

NIH Sustainability Goals

- Improve recycling and green procurement to achieve zero waste by 2020 (zero waste is defined as diverting > 90% of the solid wastes generated from landfill and incineration).
- Reduce toxic chemical use by 50% at all NIH facilities by 2020, developing and employing less toxic alternatives for standard research protocols.

Awareness and outreach is an important component of green procurement. In 2010, several ICs held training and refresher courses to educate those with purchasing authority the benefits of buying green and the resources available that make the process simpler. In addition, Green Lab Fairs were held to promote initiatives such as green procurement, toxic chemical reduction, recycling in the laboratory, and energy conservation.

Pollution Prevention and Waste Minimization

NIH generates large amounts of trash, hazardous waste, radioactive waste, medical waste, and construction debris through our research activities and many employees. However, NIH achieved extraordinary success in minimizing our waste streams both in quantity and toxicity. In 2010 alone, NIH recycled over 60 percent of our nonhazardous solid waste including construction debris and 36 percent not including construction debris, recycling more than a total of 8,000 tons. Additionally, NIH recycled over 40 percent of our hazardous waste.

Over the past year, NIH continued our waste management strategy to first minimize waste, through pollution prevention initiatives, and then to maximize waste reuse before for recycling. For chemical wastes, NIH also continued to focus on reducing waste toxicity.

NIH continued to promote our waste management strategy to all staff and encouraged them to participate in pollution prevention and recycling efforts. The NIH Waste Disposal Guide, published in May 2009, remained an important outreach tool that provided guidance on proper waste minimization techniques and waste management procedures. The guide includes web links and access to information on recycling, green purchasing, waste minimization and priority chemical reduction.

The following sections address NIH's sustainability programs and accomplishments specific to each of the significant waste streams, as well as opportunities for additional minimization efforts.

Nonhazardous Solid Waste

NIH distributed more than 900 central recycling containers throughout the Bethesda campus and 40 containers in outdoor spaces. Each floor has one or more common-area recycling containers with an instructional poster on proper recycling techniques. With the assistance of Green Teams, NIH also provided more than 6,000 blue desk-side bins for mixed paper and commingled materials. Green Teams then educated their staff on how to use the bins.

In February 2010, NIH instituted waste management education into employee orientation. NIH invited a Waste and Resource Recovery Branch representative to attend sessions and distributed a desk-side recycling guide to each new employee. This new format reached 25 orientation sessions containing approximately 20 employees each.

Recycling, Construction Debris, and Solid Waste Tonnage 2008–2010

NIH hosted our inaugural Building Recycling Competition for America Recycles Day. NIH challenged offices and laboratories to reduce their waste and recycle. There were office and laboratory building winners for the Grand Champion, or highest recycling rate, category and Waste Minimization Extraordinaire category. Building 2 won both awards in the office category with the assistance of Green Team members' outreach and Building 4 and 9 won for the laboratory buildings. Building 4 was awarded the Waste Minimization Extraordinaire and Building 9 was awarded Grand Champion.

Through these many efforts, NIH increased our recycling rate to 60.7 percent in 2010. Comparing 2009 and 2010, NIH decreased solid waste total tonnage by 500 tons and the recycling total tonnage by 250 tons. NIH expanded the inkjet and toner cartridge program with an additional two satellite facilities and recycling bins for a total of 20 facilities. NIH also started collecting data on the weights received from the satellite facilities. Approximately 23 tons of toner and inkjet cartridges were recycled, donating $2399 to NIH charities this year.

Construction Debris

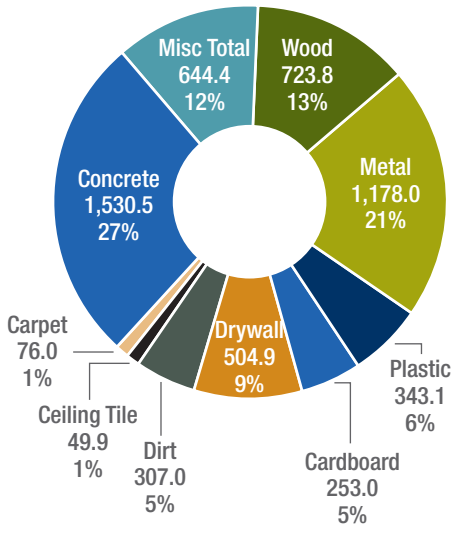
NIH made recycling construction debris a priority in 2010 and expanded the Construction Debris Recycling Program, which began in March 2008. Prior to the implementation of this program, NIH generated large amounts of construction debris and sent it to the Montgomery County Transfer Station. To ensure that the maximum amount of future discarded materials from a construction, renovation, or demolition project are recycled, NIH worked closely with our construction contractors and haulers to identify and address any barriers to the collection, sorting, and transportation of construction debris.

NIH tracks the success of the program through records received from the sorting facility on the weight of each type of material collected and recycled. Additionally, all contract bidders are required to submit a Construction Debris Waste Management and Recycling Plan as part of any contract bid proposal.

The resulting program provides free roll-off dumpster rental and transportation and disposal of all materials collected for all projects on the NIH main campus, whether the project is seeking LEED certification points or not. Items commonly found in construction debris that are recyclable or reusable include drywall, concrete, carpeting, wood, furniture, metal, dirt, ceiling tile, and glass. To facilitate compliance with the program, items are not required to be sorted by the construction contractor, but instead are sorted at a sorting facility. The single exception is scrap metal, which is often collected separately because of its value.

Overall, NIH increased the amount of construction debris reused or recycled from 1,871 tons in 2009 to 5,611 tons in 2010. Today, NIH reuses and recycles nearly 100 percent of construction and demolition materials, keeping materials out of landfills and reducing construction costs.

Construction Debris Recycling Tonnage by Category NIH Bethesda Campus 2010



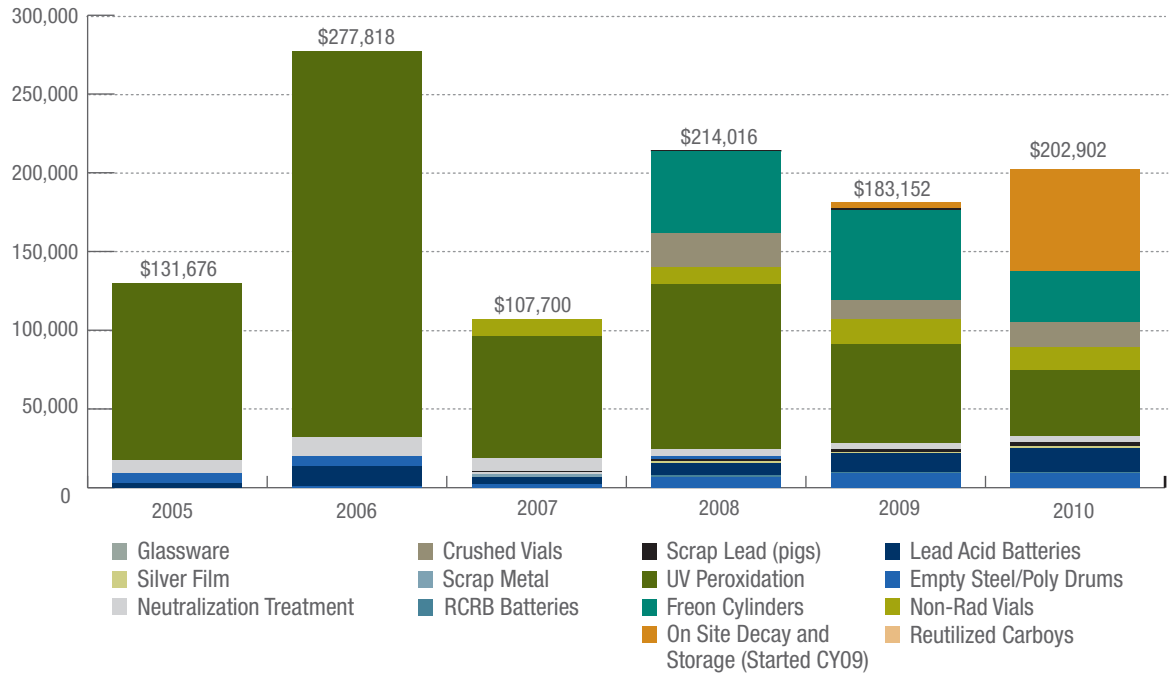
Hazardous Waste

NIH's hazardous waste management program reduces the generation of chemical waste through process improvements and beneficial reuse of hazardous waste shipped off-site for treatment and disposal. NIH continues to educate researchers on waste minimization efforts through laboratory visits, informal outreach through the chemical waste contractor, and providing training programs that offer guidance on waste minimization, proper waste management procedures, and laboratory safety.

In 2010, NIH recycled over 40 percent of our hazardous waste, 257,874 pounds of the 642,427 pounds generated. NIH saved an estimated $202,903 by recycling such materials as batteries, silver film, lead, and empty chemical bottles, performing onsite treatment such as neutralization and UV peroxidation, and processing nonradioactive liquid scintillation vials. The estimated savings also include $64,292 which was realized from onsite decay and storage of radioactive animal waste shipped from Poolesville back to the NIH main campus. As an outreach initiative the Chemical Waste Team presented a poster session on NIH's Chemical Waste Recycling Program at the 2010 GreenGov Symposium.

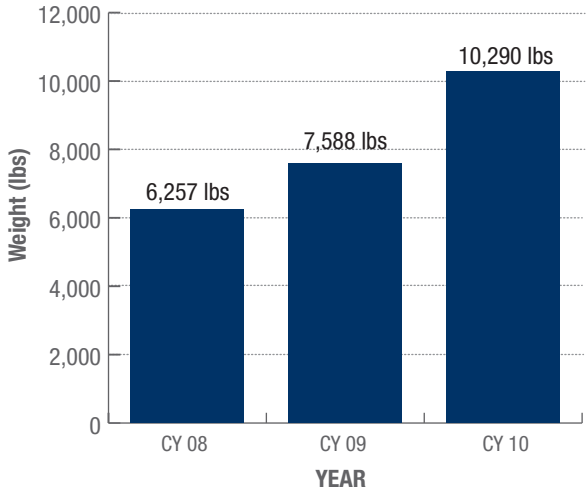
NIH implemented a new chemical bottle recycling program to increase safe recycling in laboratories. In this program, chemical waste

Yearly Cost Avoidance 2005-2010



management, rather than individual employees, sorted and recycled all empty chemical bottles, including buffer and saline bottles. This protected employee safety and increased accurate sorting. Starting in May 2010, NIH educated Lab Managers and Green Teams on the program. The success of this program is demonstrated by the increased quantities of recycled empty chemical bottles for the past three calendar years (CY) as shown at right.

Empty Chemical Bottles Recycled



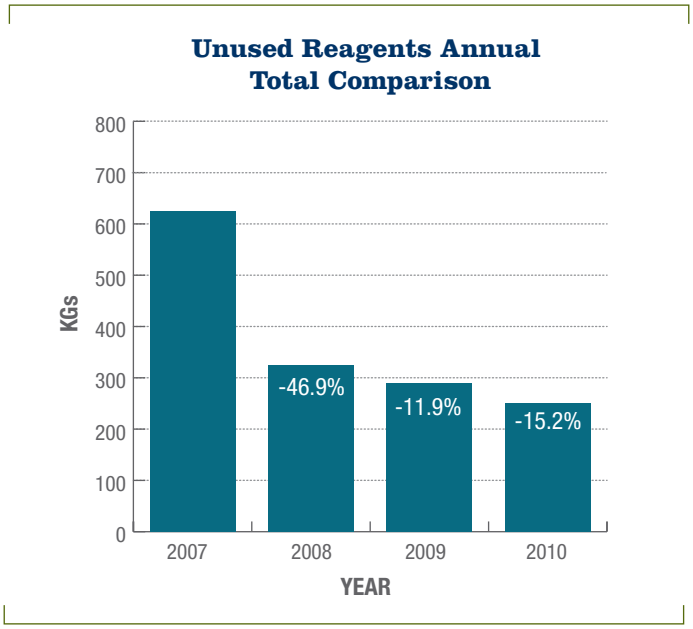
Toxic Chemical Reduction

NIH established goals to reduce the quantities and toxicity of purchased hazardous and toxic chemicals. The SLPWG has developed a master list of "target chemicals" scored numerically and ranked based on such factors as environmental risk, regulatory requirements, waste generation quantities, and availability of less toxic alternatives. NIH tracks these toxic chemicals in our Waste Tracking and Management Information System (WTMIS). Based on the ranking method, six chemicals were selected from the master list and targeted for reduction through continued outreach in 2010. A "Most Wanted" poster was presented at NIH's 2010 Earth Day event. These six chemicals include: ethidium bromide, phenol/chloroform, phosphoric acid, chromic acid, picric acid, and ethylene oxide. The data from this program will be used to track the effectiveness of this initiative and help identify where additional outreach or other efforts are needed. See the NIH toxic chemical reduction data for the past three calendar years.

In 2011, we will continue to perform outreach and develop strategies for toxic chemical reduction. Also in 2011 we are working with the HHS Sustainability Task Force to expand the NIH Toxic Chemical List to include other toxic chemicals used in a variety of HHS applications. The NEMS will include detailed information on the NIH toxic chemical reduction strategies in 2011.

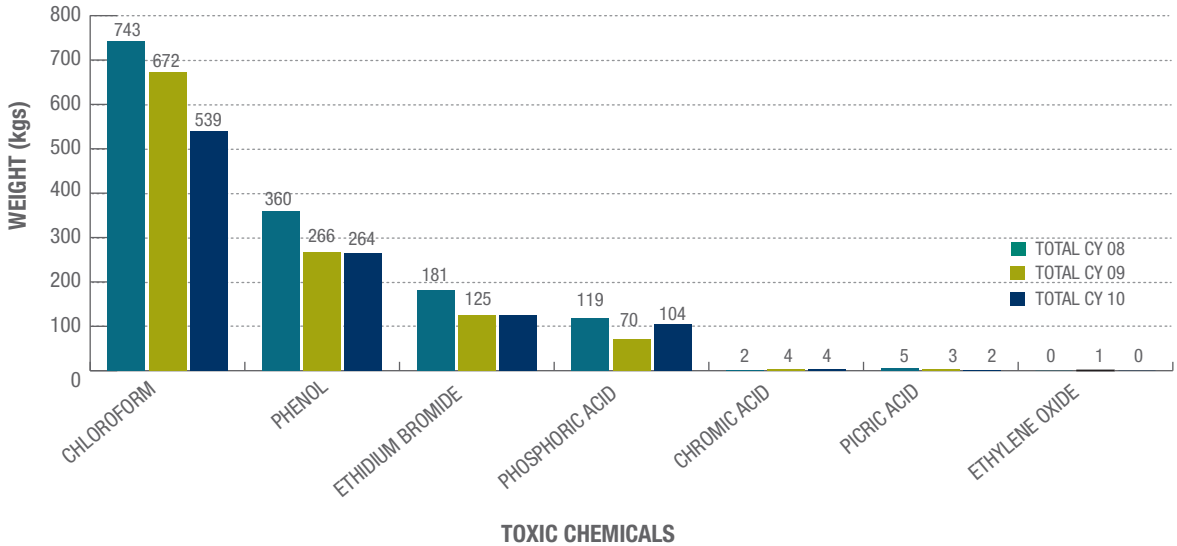
Unused Reagent Reduction

The SLPWG aims to reduce the amount of chemical reagents that are never opened and discarded as waste. NIH also tracks this date in the NIH WTMIS to monitor progress and identify where additional outreach or other efforts are needed. DEP promotes the sharing of chemicals within laboratory groups, particularly during chemical moves and laboratory cleanouts when excess chemicals are identified. The graph below shows NIH unused reagent data for the past four calendar years.



Laboratory Surveys

In 2010, NIH surveyed laboratory employees that use chemical waste services and received 131 responses. 85 percent of respondents were familiar with NEMS. This survey is used as an outreach tool to promote NIH green initiatives and to solicit ideas on how we can improve and expand our greening efforts in labs.



Building Decommissioning Waste

The NIH Chemical Waste Services provided waste transportation and disposal services for the management of hazardous waste and debris generated from building renovation, decommissioning, and decontamination projects on the NIH main campus as well as off-campus leased facilities. In 2010, 3537 pounds were generated of which 100 percent was recycled.

Transportation and Fleet

NIH continued to increase the number of transportation fleet vehicles relying on alternative fuels. NIH has reduced gas consumption 55 percent from 2005 to 2010. Additionally, we have increased our ethanol-gasoline fuel blend (E-85) consumption 225 percent from 2005 to 2010. Specifically, our 2010 Fleet Inventory included:

- 148 ethanol vehicles.
- 77 gas vehicles.
- 17 hybrid vehicles.
- 6 electric off-road vehicles.

NIH also installed GPS technology on 200 NIH vehicles to track idle time for further reduction of petroleum based products. NIH also plans to purchase two Nissan Leafs, electric cars, for the NIH Motor Pool.

NIH offers a variety of commuting options in an effort to help ease traffic congestion, decrease pollution and fossil fuel use, and reduce the stress associated with the daily commute to and from work. These options include the Transhare Program, Ridefinders Network, bicycle amenities, and campus shuttles.

The NIH Shuttle Service includes:

- Shuttle vans operating on the low-sulfur fuel and new buses.
- Next Bus technology on and off campus to encourage shuttle use and avoid personal vehicle use for work-related meetings.
- Shuttle services for special events.
- Mid Pike and Campus Shuttle routes equipped with bicycle racks for employee that bike to work and ride the shuttles the remaining distance.

The location of the NIH Bethesda, campus provides numerous public transportation options for our employees to reduce the environmental impacts of commuting. The Washington Metropolitan Area Transit Authority (WMATA) operates Metrobus and Metrorail service to the Bethesda campus. Montgomery County Department of Transportation operates the Ride-On bus system, which provides service from Metrorail/Metrobus stations, including the on-campus Medical Center Station, to points throughout the county. Mass transit is further augmented by NIH shuttle buses that move people to and from designated onsite pickup locations and to off-campus locations.

NIH Sustainability Goals

- All NIH and contractor vehicles powered by non-carbon based fuel and exceed toughest US emission standard by 2020.

There is also bicycle access to and around the NIH campus. A pedestrian and bicycle path along the south border of the campus connects neighborhoods on the west side to Rockville Pike and the Metrorail Station. NIH employees using bicycles to access the campus are able to enter the campus through several pedestrian/bicycle entrance gates as well as through vehicle entrance gates using their NIH identification and card keys. To encourage the use of bicycles, paths and routes are provided within the campus, and bicycle racks and lockers are provided for cyclists at the Medical Center Metrorail Station and at most major buildings. NIH has bicycle facilities capable of securing over 600 bicycles on the campus, including bicycle racks and lockers. Several buildings have showers and lockers for bicyclists. An active NIH Bicycle Commuter Club provides information and support to the NIH bicycling community.

IC ENVIRONMENTAL INITIATIVES AND ACCOMPLISHMENTS

Our ICs were integral to NIH's 2010 sustainability accomplishments. Each IC implemented a variety of sustainability practices, ranging from energy-efficient building upgrades to desk-side recycling programs. Additionally, the ICs and their Green Teams conducted innovative outreach programs to promote greening efforts within NIH and throughout the community. This section highlights each IC's environmental initiatives and accomplishments, focusing on both sustainability practices and outreach activities.

Office of the Director (OD)

Sustainability Practices

- Purchased office supplies and furniture that contain recycled and non-toxic content to conserve natural resources and reduce waste.
- Purchased post-consumer content paper from NIH Self Service Store.
- Purchased ENERGY STAR® equipment and enabled energy savings features on computers.
- Purchased eco-friendly power strips with motion detectors to be installed in Building 2.
- Set the default on all network printers to duplex printing and encouraged scanning in lieu of creating paper copies to reduce paper consumption.
- Continued recycling programs for paper, binders, folders, catalogs, boxes, bottles, cans, batteries, electronics, glasses, toner and ink cartridges.

Outreach Efforts

- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Conducted outreach for America Recycles Day by collecting eyeglasses, cases, and sunglasses for distribution to impoverished people overseas and used cell phones for soldiers.
- Green Team sponsored a Paper Free Day awareness campaign in the cafeteria of Building 1. Activities included a horse and pony show with recycling facts, a laptop with green quizzes, and an activity on types of recycled paper, such as banana paper.
- Provided green training on NEMS website to all new employees.
- Educated staff on the use of durable, reusable beverage containers instead of disposable cups.
- Building 2 recognized as the Waste Minimization Extraordinaire in the NIH Building Recycling Competition.
- Educated employees on scanning to reduce paper use.

OD Office of Research Facilities (ORF)

Sustainability Practices

- Initiated new laboratory empty chemical bottle recycling program.
- Recycled over 8,700 tons of discarded materials.
- Recycled approximately 5,500 tons of construction debris.
- Replaced majority of NIH cafeteria plastic expendables such as cups and food containers with compostable paper or bio-based alternatives.
- Set the default on all network printers to duplex printing.

Outreach Efforts

- Continued to coordinate the GTLC, the SLPWG, and the SMT.
- Developed and presented two posters at the 2010 NIH Research Festival to educate the NIH community on greening the laboratory environment.
- Assisted several ICs in setting up Green Lab Fairs.
- Wrote articles for the NIH Record and The Catalyst to encourage laboratory greening including The Road to Greener NIH Labs: Greening Your Workspace is Challenging but Possible.
- Developed an awards program as part of NEMS implementation process. This awards process will encourage recognition of effective energy and water management and conservation practices, as well as reward exceptional performance in implementing Executive Order 13514. The NEMS SMT will help to implement it in 2011.
- Briefed several NIH groups and the public community on NIH's environmental impacts, particularly energy use, and how individuals can take steps to minimize their environmental and other impacts.
- Used the NEMS website to communicate environmental and energy related information to our employees.
- Recognized by the EPA for outstanding pollution reduction and energy efficiency qualities of the cogeneration plant and was presented a 2011 ENERGY STAR® Combined Heat and Power Partnership Award.
- Celebrated Earth Day by hosting a series of Earth Week events, culminating with a large Earth Day event coordinated in conjunction with Take your Child to Work Day.
- Developed and coordinated NIH's first annual Paper Free Day, held Tuesday, May 25, to create awareness of NIH paper use and showcase strategies to reduce paper use.
- Coordinated the NIH "Lights Out" Campaign with Office of Research Services. Handed out approximately 15,000 sticker light plate covers to remind employees to turn lights out when they leave an area. The IC Green Teams were instrumental in distributing the stickers throughout NIH locations both on and off campus.

OD Office of Research Services (ORS)

Sustainability Practices

- Adopted a desk-side recycling program for employees and contractors. Approximately 25 percent of ORS staff signed up for and were provided with personal recycling bins for commingled and paper products.
- Set the default on all network printers to duplex printing.
- Reduced off-hour PC network energy consumption with the use of the software Surveyor and a program that overrides computer energy consumption during off-peak hours. ORS also trained 19 ICs on how to implement and use the system.

Outreach Efforts

- Coordinated the NIH "Lights Out" Campaign with ORF. Handed out approximately 15,000 sticker light plate covers to remind employees to turn lights out when they leave an area. The ORS Green Team designed the stickers and worked with IC Green Teams to distribute the stickers throughout NIH locations both on and off campus.
- Spearheaded a campaign to decrease the unnecessary over-distribution of periodicals such as the NIH Record, Recreation & Welfare newsletters, and other print media that are distributed desk-to-desk.

ORS NIH Library

Sustainability Practices

- Maintained the self-sustaining green terrace and installed weather station to monitor temperature, wind speed, humidity, and rain fall.
- Collected stormwater runoff from two nearby roofs in the 1,200 gallon cistern, then recycled the water to irrigate the plants. In July collected 3.69 inches of rain. In years past these roofs caused flooding for NIH staff and ruined expensive machinery.
- Reduced the heat signature of the roof through the vegetation, canopies, living walls, and a water feature. In July, the average temperature was 89 degrees, yet the weather monitor never registered the green terrace above 82 degrees.
- Replaced over 160 trash cans with large recycling bins located at strategic sites in the library.
- Reduced NIH Library daily trash collection from 6-8 large bags to 1-2 small waste bags.
- Continued to provide online journals rather than print, allowing for 99 percent of article requests to be sent digitally.
- Replaced three copiers and four desktop printers with

two scanners to encourage staff and patrons to send their documents digitally by e-mail or to a USB key.

- Installed print-audit and communication-messaging software to track the anticipated reduction in copying. Completed an initial audit of all printing devices that calculated the costs to run each type of printer. The audit identified a group of patron printers that consumed unusually high amounts of energy and paper. Consequently, installed copier pop-up messages asking patrons to print less.
- Installed automatic, water-saving faucets and toilets in two bathrooms.
- Installed 22 daylight dimming lighting fixtures near the windows so lights dim when the daylight comes.
- Replaced light fixtures with ENERGY STAR® compact fluorescent light bulbs and changed each four-bulb ballast to use only two bulbs for public space and offices.
- Installed a switch for the lower level of the Library to turn off 93 four-bulb ballasts during closing hours.
- Installed 63 motion sensors in offices and shared areas that automatically turn off lights when no motion is detected in the room.
- Started to implement software to turn off computers when not in use.
- Purchased only ENERGY STAR® compliant equipment.
- Removed four water fountains that were not in use but still using electricity.

Outreach Efforts

- Reminded staff to turn off monitors, printers, and accessories when they leave at night.
- Encouraged staff and customers to share documents electronically through the use of scanners, e-mail, SharePoint account, or USB.
- Developed a brochure to educate patrons on greening goals at the 2010 Library Open House.
- Distributed NIH newsletters to staff via email rather than print, eliminating the production of more than 1500 newsletters.
- Collected bulk mail for two months and then sent 135 emails to the companies requesting that they remove the Library from mailing lists. Conducted follow-up request six months later.
- Continued to educate the NIH community and the public on the green terrace on NIH Library's website. This included descriptions of plants and a video of the roof before and after construction.
- Hosted a variety of events for HHS and NIH dignitaries, retirements, recognition events, and the Wednesday Afternoon Lectures.
- Advised banquet coordinators on recycling and encouraged the use of paper rather than plastics.
- Presented a series of educational documentaries to library staff and the NIH community to discuss the impact of plastics in the ocean and how to reduce bottled water consumption.
- Received two 2010 awards including:
  - HHS Green Champion Award for NIH Library's Green Terrace/ Vegetative Roof.
  - HHS Green Champion Honorable Mention for NIH Library's Green Procurement Outreach.

Office of Technology Transfer (OTT)

Sustainability Practices

- Maintained recycling efforts for paper, batteries, mailing packages, printer toner, glass, and plastic.

Outreach Efforts

- Continued efforts to become a paperless office including scanning documents, making documents available electronically on SharePoint, using electronic signatures on license agreements and memorandums, sending documents electronically, and using an online document-sharing portal that facilitates paperless information sharing.

Center for Information Technology (CIT)

Sustainability Practices

- Implemented Purchasing On-line Tracking System (POTS) for all procurements.
- Decreased the distribution of Interface paper printouts by providing web links to articles online.
- Installed efficient, compact blade servers with ongoing server migrations to decommission older, less efficient hardware.

- Virtualized 50 percent messaging and infrastructure, creating a potential savings of $500,000 in hardware.
- Established a virtual presence in Building 10, Sterling, Virginia and RTP.
- Provided two new virtualization service offerings, including Solaris partitioned server and shared F5 load balancer.
- Offered virtualized Linux servers on the z9 Business Class server on a production basis. This allowed for installation of several heavy-volume (up to 45,000 hits per hour) BLOG sites on virtual Linux servers without increasing power or space requirements.
- Replaced 1000 of 3000 32-watt T8 fluorescent lamps with more efficient 28-watt lamps, including all 24/7 emergency lights.
- Changed 32 lamps from 32-watt to 26-watt bulbs.
- Added about 15 digital light timers to turn off lights at night.
- Removed approximately 150 32-watts lamps and 60 7-watt lamps to eliminate redundant lighting in private offices and corridors.
- Reduced gas consumption by approximately 30 percent over the past two years.
- Installed a high-efficiency gas water heater.
- Installed a plate and frame heat exchanger, enabling an estimated $60,000 savings per year in electrical costs.
- Installed occupancy sensors in all of the bathrooms since lights are left on at night.
- Increased use of renewable recycled products whenever possible, such as office supplies and janitorial cleaning supplies.
- Implemented a Toner Recycling Program to collect toner cartridges.
- Promoted recycling by distributing recycling bins throughout office buildings.

Outreach Efforts

- Developed CIT Green Team.
- Appointed Division of Computer System Services to represent CIT at monthly NIH Green Team Lead Council meetings.
- Educated Green Team Council on CIT's OCS and Adobe Connect applications and promoted them as tools to facilitate NIH telework.
- Hosted tables at Earth Day to demonstrate teleworking technologies such as web conferencing and instant messaging.
- Participated at the NIH Research Festival on "Greening the Data Center."
- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Collaborated with the NIH Communications Office to publish regular greening tips to staff.
- Designated the month of December as CIT GO GREEN MONTH, recommending strategies for employees to green their activities, particularly procurement, energy use, and waste generation.

Clinical Center (CC)

Sustainability Practices

- Continued implementation of a desk-side recycling program by increasing the number of recycling bins in office spaces.
- Provided additional paper recycling containers near water coolers to encourage the recycling of paper cups.
- Implemented paperless department meetings to reduce the use of paper handouts and agendas.
- Replaced paper service with china service for Day Hospital patients, which will reduce landfill waste by 61,000 pieces of Styrofoam and save over $8,000 per year in disposable costs.
- Switched to a fair trade coffee service for patients, promoting better compensation for coffee bean farmers and supporting sustainable agriculture.
- Switched to low-flow spray hoses, which will save hundreds of gallons of water per month.

Outreach Efforts

- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Implemented extensive, "Did You Know?" staff education campaign that provided greening tips through CC News articles, Twitter, screen shots on the hallway monitors, the CC web page, and the dedicated CC Intranet devoted to Green Team initiatives.
- Participated in America Recycles Day, Earth Day, and Paper Free Day.
- Hosted a green office challenge to assess the sustainability of office activities.

Center for Scientific Review (CSR)

Sustainability Practices

- Established swaps to promote recycling and to avoid office supply waste.
- Enabled energy saving features on existing machines and only procured new IT machines with energy-saving features.
- Implemented 6-month time line to install network printers with default duplex printing.
- Reduced carbon footprint through 75 percent of full time employees (FTEs) in telework program.
- Set-up recycling in 100 percent of CSR officers, cubicles, and work areas.

Outreach Efforts

- Launched a Green Team SharePoint site.
- Disseminated electronic fliers outlining recycling best practices at employee desks and office common areas.
- Conducted survey showing that 72 percent of employees recycle, and immediately prepared follow-up survey to show additional progress.

Fogarty International Center (FIC)

Sustainability Practices

- Created copy paper sign-out sheets that require staff to indicate program area and need before taking a ream of paper from the copy area.
- Conducted paper purchase analysis to determine paper uses and identify alternative electronic means of communication.
- Created cost-savings by reducing paper consumption. Directed leftover funds to purchase additional recycling receptacles in Stonehouse facility.
- Set-up battery recycling containers.

Outreach Efforts

- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Participated in NIH Paper Free Day.
- Conducted a center-wide shut down of all printers, faxes, and copiers.
- Sent Friday calendar reminders to staff to "Power IT down," reminding staff to shut down computers, printers, and copiers before the weekend.

National Center for Complementary and Alternative Medicine (NCCAM)

Sustainability Practices

- Incorporated green efforts into space planning, ensuring that all new office construction includes sustainable building design. For example, new offices will have motion-activated lights to reduce electricity consumption.
- Relevant staff participated in green procurement training.
- Ensured that all paper purchased is at least 30 percent post-consumer waste.
- Procured combination copier-scanners for two sites to promote the use of electronic files and reduce paper recordkeeping.
- Assessed common recycling areas at all office and laboratory locations to ensure recycling signage communicated recycling best practices and acceptable recyclables.
- Provided on-campus employees with desk-side recycling bins for paper and commingled materials.
- Gave Democracy II building employees new desk-side paper recycling bins, in addition to the already available centralized recycling for commingled materials.
- Set groundwork for future IT policy that will replace individual printers with links to a printer network. The network printers will default to two-sided printing.
- Continued to focus IT procurement on ENERGY STAR®, low-energy consumption equipment.

Outreach Efforts

- All staff successfully completed the NEMS Awareness Training.
- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Piloted energy-saving power strips to determine utility.

- Completed groundwork for a new Green Team intranet page to update staff on current sustainability trends and the Center's ongoing green initiatives.

National Cancer Institute (NCI)

Sustainability Practices

- Promoted recycling by distributing recycling bins throughout office buildings.

Outreach Efforts

- Participated in America Recycles Day and Earth Day to provide information on recycling, energy efficiency, and pollution prevention.
- Recycled hundreds of pounds of recyclables collected from co-workers including batteries, sneakers, CDs, VHS tapes, holiday lights, and eyeglasses.
- Educated employees on how to generate cost-savings though recycling and energy conservation, highlighting how individual efforts can lead to significant effects in the workplace.
- Celebrated Earth Day on three campuses including Rockville, Frederick, and Bethesda and educated employees on sustainability through games and the distribution of tree saplings and recycling bins.
- Updated NCI's website promoting NCI's energy conservation, waste reduction, recycling, and green procurement initiatives and training.
- Partnered with NCI-Frederick Scientific Library to host environmental film screenings and book discussions.
- Sponsored the showing of the documentary "Kilowatt Ours" on Paper Free Day.
- Green Team published green articles in NCI administrative newsletter.
- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- NCI-Frederick Green Team instituted and distributed a monthly "Green Tips" email to the NCI-Frederick community.
- Green Team distributed "Submit Your Green Ideas" surveys to employees.
- Green Team participated in an inspiring and informative walking tour of the Cedar Lane woods on the NIH campus.
- Green Team toured the Army Waste Management Facility used by NCI-Frederick to learn more about recycling efforts.
- Committed to participate in 2011 NIH Take Your Child to Work Day to provide recycling and energy efficiency information and collect recyclables.

National Eye Institute (NEI)

Sustainability Practices

- Distributed additional desk-side recycling bins to staff to increase recycling efforts.
- Implemented partial lighting in research laboratories in Building 10 using timed lighting mechanisms.
- Encouraged staff to set duplex as the default on their printers and copiers.

Outreach Efforts

- Appointed new Green Team leads and added two new members to ensure the Green Team included representatives from all NEI divisions.
- The Green Team identified five key performance goals, including reducing the use of toxic chemicals in laboratories, reducing energy consumption, encouraging NEMS and green procurement training, reducing paper and materials consumption, and encouraging green cost-savings initiatives through education and outreach activities.
- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Hosted an employee walking tour to increase awareness of NIH's stormwater management, tree diversity, and wildlife attracting efforts.
- Partnered with NINDS to co-sponsor a summer Green Movie Brown Bag Series. The series featured two short environmental films, "The Story of Stuff" and "Kilowatt Ours," with discussion sessions following each movie showing.
- Updated the Green Intranet page with announcements, information, and resources on recycling and energy consumption.

National Human Genome Research Institute (NHGRI)

Sustainability Practices

- Established Styrofoam recycling program at Fishers Lane in all laboratory areas.
- Successfully piloted battery recharging program for laboratory equipment and computer peripherals, saving an estimated $300 per year.
- Reduced medical pathological waste (MPW) box use in laboratories by 50 percent.
- Instituted toner cartridge recycling in Building 49.

Outreach Efforts

- Conducted America Recycles Day outreach at the NHGRI scientific retreat.
- Participated in Paper Free Day, reducing paper use by 66 percent that day.
- Hosted green activities picnic for employees and children.
- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Hosted a table at the NIH Research Festival with NIH Green Team Leads.
- Sponsored laboratory greening events in conjunction with NIDCD and NINDS.
- Included articles on green chemical alternatives and Paper Free Day in the NIH Catalyst newsletter.
- Hosted Laboratory Manager green discussions at the NHGRI Laboratory Greening Fair.
- All staff successfully completed the NEMS Awareness Training.

National Heart, Lung, and Blood Institute (NHLBI)

Sustainability Practices

- Implemented a green indicator into the POTS, requiring a purchaser to indicate if they considered green products before an order can be approved.
- Provided links containing green purchasing options. The NHLBI Green Team Lead presented this new function at the March 2010 IC Green Team Leads Meeting. Since its deployment in late 2010, 5 percent of the POTS orders complied with "environmentally preferable purchasing" standards.
- Implemented the REUtilization of Scientific Equipment (REUSE) Program to conserve Division of Intramural Research (DIR) resources by repurposing quality equipment, instruments, furniture, and supplies rather than sending viable items to NIH Surplus.
- Reused 121 items, which allowed NHLBI DIR to repurpose over $1 million in equipment.
- Set plans for 2011 to implement two new versions of the REUSE program which will include IT equipment and office supplies.
- Distributed additional mixed paper and commingled blue bins.

Outreach Efforts

- Participated in Paper Free Day by limiting the use of paper and sharing ideas on how to reduce or reuse paper. Green Team developed a staff survey to track how staff limited the use of paper and to capture ideas for future green activities.
- Developed a Green Team SharePoint Site outlining goals, Green Team Committee Member roles, green announcements, and meeting minutes. Set 2011 site plans to allow posts from the entire NHLBI community on NIH and NHLBI green initiatives.
- Drafted an NHLBI Green Policy. In 2011 the policy will be reviewed by the NHLBI Management Policy and Administrative Services Branch and the Acting Executive Officer prior to implementation.
- Green Team promoted recycling campaign at the annual NHLBI Star Awards Ceremony. Employees received informational materials on recycling at the green table as well as registered for the blue bin desk-side program.

National Institute on Aging (NIA)

Sustainability Practices

- Information Technology Branch procured only energy-efficient electronics, requiring all equipment to have stand-by power devices and ENERGY STAR® ratings.
- Encouraged staff to visit the NIH Stock Catalog as their first source for purchasing green post-consumer office supplies and products.
- Committed to purchasing only 100 percent post-consumer paper from the NIH Self Service Store.

- Partnered with facility manager and property management to promote recycling initiatives for the Gateway building.
- Placed recycling containers in restroom facilities and break rooms to encourage staff to rinse and limit pest infestation while recycling.
- Purchased color coded dual bins to assist the janitorial staff's collection of trash and recyclable products. This separation promoted utilization of appropriate dumpsters in accordance with Montgomery County regulations.
- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Installed motion detection light sensors in private offices.
- Set computer monitors, network printers, and copiers to automatically default to standby mode after 20 minutes of inactivity.
- Replaced light bulbs with high efficiency, low energy light bulbs.
- Provided two recycling containers to all staff members to deposit comingled products and mixed paper.

Outreach Efforts

- Green Team conducted two onsite education campaigns including presentations on Montgomery County's business recycling guidelines, NIH's Recycling Coordinator on Greening your Office and Laboratory, NIH Central Supply Store on green purchasing, and a demonstration on motion sensor power strips.
- Green Team representatives conducted random spot checks to confirm appropriate use of recycling bins.
- Celebrated Earth Day by participating in the waste reduction, recycling, and redistribution process of government materials. Property Utilization Warehouse, Gaithersburg Distribution Center (GDC) provided pickup services from the Biomedical Research Center (BRC) in Baltimore for government property to be surplused. Items collected were recycled, redistributed, or donated.
- Hosted the Summer Picnic & Organizational Awareness Fair at the trash-free Patapsco Valley State Park. The Green Team collected and recycled approximately 150 gallons of comingled recycling at the end of the event.
- Participated in NIH Paper Free Day by hosting information tables on campus and providing demonstrations on scanning documents and its benefits.
- Instituted double-sided printing and increased use of electronic communications, using and ordering approximately half the paper used in previous years.
- Participated in America Recycles Day by setting up collection for eyeglasses, sneakers, batteries, CD's & VHS tapes, and personal cellular phones. Additionally, Intramural Research Program (IRP) staff from the BRC worked with Clean Air Partners of Maryland to recycle gas lawn mowers for electric mowers.
- Disposed of thousands of sensitive documents using an off-site, secured recycling facility. As a cost savings measure, separated out folders for future use and donations.
- Sent quarterly reminders to staff to turn off computers and printers at night.
- Green Team and supervisors reminded staff members that environmental stewardship is a component of their Performance Management Appraisal Program.

National Institute on Alcohol Abuse and Alcoholism (NIAAA)

Sustainability Practices

- Verified that all equipment purchases are ENERGY STAR® compliant.
- Designed and implemented a battery recycling program in laboratories.
- Ensured all staff members had a blue desk-side recycling bin in addition to their trash can.

Outreach Efforts

- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use in 5625 and 5635 Fishers Lane.
- Ensured that all staff completed annual NEMS Awareness Training.
- Encouraged bicycle commuting and submitted request for the addition of bike rack behind 5625 Fishers Lane.
- Encouraged employees to use Transhare.
- Participated in the NIH Paper Free Day by emailing instructions to all staff on how to scan and email paperwork, versus copying. Posted instructions and provided demonstrations in both copy centers in 5635 Fishers Lane.
- Supported increased participation in the telework program.

National Institute of Allergy and Infectious Disease (NIAID)

Sustainability Practices

- Rocky Mountain Laboratories (RML) increased recycling efforts to a 54 percent recycling rate, a 14 percent increased from 2009.
- RML obtained their own "Bulb Eater" for recycling fluorescent bulbs. It crushes the glass, removes the mercury, and provides cost and space savings measures by eliminating the need to store used bulbs and to pay for safe bulb disposal.
- RML implemented the Laboratory Chemical Sharing in which laboratories share chemicals and, by doing so, reduce both the purchase costs and waste for each lab.
- RML retrofitted all lighting fixtures with energy saving fixtures by taking advantage of the Energy Savings Performance Contracting (ESPC) vehicle.
- Division of Intramural Research (DIR) obtained battery receptacles for all floors of Building 33, monitored their capacity, and arranged for pick up when full.
- DIR ensured that the recycling containers for paper, cans/bottles, and printer cartridges were strategically located to encourage use.
- DIR added a cell-phone recycling receptacle.
- DIR distributed personal cardboard containers to each office and lab to promote paper recycling.

Outreach Efforts

- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Increased the number of employees teleworking on a regular basis (at least one time per month) to 162 employees from 31 in 2009.

National Institute on Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

Sustainability Practices

- Implemented green procurement to ensure new computer orders were ENERGY STAR® and EPEAT Silver/Gold rated, resulting in estimated savings of $120,000 per year.
- Ordered new printers with duplex capability and default duplex settings, estimating $750 per year in savings.
- Moved IT production systems to a virtualized environment, reducing the number of servers and power usage. Expected savings of $20,000 per year.
- Began transfer of data storage to a thin provisioning system, reducing the amount of storage purchased and the power requirements. Expected savings of $50,000 per year.
- Encouraged all purchase cardholders and approving officials to attend the annual Green Procurement Refresher.
- Ordered 50 blue desk-side recycling bins for to staff to increase recycling efforts.
- Replaced some lights in Building 31 offices with energy saving lights.

Outreach Efforts

- Created an NIAMS Green Team to develop, educate, and encourage the implementation of green practices.
- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use in Buildings 10, 50, 31 and One Democracy.
- Participated in the NIH Earth Day celebration.

National Institutes for Biomedical Imaging and Bioengineering (NIBIB)

Sustainability Practices

- Purchased duplex printers and copy machines and set default settings to double-sided printing, where possible.
- Distributed blue desk-side recycling bins to all staff members.
- Purchased ENERGY STAR® office equipment.
- Redistributed office furniture for more effective use, rather than purchasing new furniture for spaces requiring upgrades.
- Installed green equipment in the new Take 10 exercise room.
- Turned off electronics and lights when not in use and at the end of each day.

Outreach Efforts

- Increased the number of days employees are allowed to telework.
- Continued progress toward goal to more than double the number of NIBIB staff participating in the Telework Program from FY 10 to FY 11, thereby reducing fuel consumption.

- Encouraged the use of the stairs instead of the elevator.
- Conducted an additional Go Greener Office Challenge assessment to determine the change in green office activities.

National Institute of Child Health and Human Development (NICHD)

Sustainability Practices

- Distributed approximately 30 recycle bins to new employees and contractors.
- Increased procurement of green office supplies and purchased only ENERGY STAR® compliant computers, monitors, laptops, and printers.
- Purchased paper with post-consumer recyclable materials.
- Continued battery disposal in Buildings 31 and 6100.
- Set up a toner recycling bin at a primary off-campus location.
- Recycled office products and furniture in lieu of surplusing. Sent an email to building tenants to see if anyone had a need for any of the items prior to surplusing.
- Installed motions sensors in restrooms in Building 6100.

Outreach Efforts

- Participated in the Take Your Child to Work event on Earth Day, hosting two tables on the fun of composting and planting. The tables also allowed kids to recycle their lunch contents.
- Sponsored two educational seminars that included presentations from the Montgomery County Recycling Representative and an office sales representative on purchasing eco-friendly office products.
- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Green Team Chair presented to three scientific program areas to encourage recycling and increase green knowledge.
- Encouraged staff to use Century Gothic font in communications, since it is printer-friendly and requires less ink.
- Sent green tips twice of month to all staff.
- Encouraged staff to participate in the "Power Information Technology (IT) Down Day."

National Institute on Drug Abuse (NIDA)

Sustainability Practices

- Collaborated with NINDS and NIMH to complete a Preliminary Energy Audit with Pepco to identify potential building energy conservation.
- Worked with building management to receive annual recycling report, the baseline measure of success of recycling efforts.
- Provided recycling bins in all individual offices.
- Replaced commingled and paper cardboard recycling boxes with plastic recycling bins to make bins more eye-catching.
- Expanded the recycling program to include used battery and ink toner recycling bins.
- Installed a filtered water fountain in the fourth floor administrative suite at the IRP BRC that keeps track of the number of plastic bottles saved by using the water fountain in combination with reusable bottles or cups.
- Mounted a low-power LCD display system to advertise weekly meetings and events at the IRP BRC, eliminating the need for multiple posters and printed flyers.
- Encouraged the use of thinner, non-plastic backed, recyclable poster boards and reusable corkboards in NIDA IRP Visual Media Department.
- Expanded the use of videoconferencing at IRP in hiring interviews to reduce travel-related carbon footprint.
- Implemented the use of cornstarch-based utensils at the IRP's clinic area that decompose naturally and recyclable paper products.
- Started a program to reuse shipping boxes, eliminating the need to purchase new boxes and containers for many mailed items in IRP's Safety Department.

Outreach Efforts

- Continued Green Team and partnered frequently with other ICs in order to improve environmental performance.
- Offered lunch-and-learn training sessions to provide an overview of energy efficiency best practices.
- Presented a summer movie series featuring educational, green-themed films.
- Encouraged staff to set two-sided printing as the default on printers and copiers.

- Encouraged the IRP staff to purchase paper with at least 30 percent post-consumer recyclable materials.
- Increased the number of staff participating in the telework program from 129 in FY 09 to 167 in FY 10 to reduce fuel consumption.
- Piloted a program that increased the number of days the NIDA Grants Management staff is allowed to telework to four days, which reduces the Institute's carbon footprint.
- Surveyed NIDA teleworkers to determine best practices for staff and provided recommendations to management.
- Conducted the Go Greener Office Challenge in April and September to assess NIDA's sustainability practices and to develop a baseline measurement to track and document improvement. NIDA's Go Greener Score for 2010 rated as "Excellent."
- Collaborated with NINDS and NIMH to host green-themed events at the Neuroscience Center site for Earth Day and America Recycles Day, where various items were donated by staff for reuse and recycling. A representative from Montgomery County provided information on composting as well as distributed compost bins to staff.
- Hosted an Earth Day festival at the BRC that was open to NIDA, NIA, and Johns Hopkins Bayview employees. Over 200 people attended and benefitted from the participation of 15 non-profit green agencies and groups.
- Hosted an America Recycles Day event at the IRP.
- Hosted a green project for children on Take Your Child to Work Day at the NIDA IRP.
- Surveyed staff about green initiatives to identify areas of opportunities.
- Participated as a panel member for the Strategic Planning EO Meeting focused on NIH's sustainability initiative.
- Attended the 2010 GOVGreen Conference and Exposition on green solutions for energy, transportation, conservation, and facilities.

National Institute on Deafness and Other Communicative Disorders (NIDCD)

Sustainability Practices

- Created battery recycling program.
- Purchased computer power strips to increase energy conservation.
- Defaulted printers to duplex.

Outreach Efforts

- Promoted use of blue desk-side recycling bins.
- Established Green Team monthly meetings to discuss green initiatives.
- Participated in NIH Green Lab booth at NIH Research Festival.
- Created a Frequently Asked Questions (FAQ) page on the NIDCD intranet on green information.
- Distributed monthly bulletins to increase awareness of green issues.
- Created "Green At Home" document to promote environmentally friendly practices in the home.
- Encouraged staff to turn off computers at night.
- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.

National Institute of Dental and Craniofacial Research (NIDCR)

Sustainability Practices

- Expanded the desktop power management tool to the entire IC.
- Embedded double-sided printing for certain policy documents.
- Started the process of moving all standard operating procedures to SharePoint site to eliminate books for new staff and reduce paper use.

Outreach Efforts

- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.

National Institute of Diabetes and Digestive Kidney Diseases (NIDDK)

Sustainability Practices

- Installed green cork flooring in Building 31, ninth floor.
- Instituted purchase of duplex printers for all staff.
- Completed virtualization of over 100 servers, saving approximately 661,000 kWh of electricity annually, $525,000 in physical hardware, and $66,000 in annual energy costs.
- Green Team began working with senior leadership to examine intramural laboratories to determine a base for green initiatives in energy consumption, recycling, and chemical reduction.
- Began assessment of energy consumption patterns for scientific equipment, including an assessment of sleep and power-save mode use in non-scientific equipment.
- Started assessment of printers and copiers with duplex capabilities, as well as the ratio between recyclable materials and recycled materials.
- Initiated efforts to reduce chemical use through an assessment of chemicals of interest including picric acid, chromic acid, phosphoric acid, ethidium bromide, ethylene oxide, phenol/chloroform, and mercury.

Outreach Efforts

- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use in Building 31, Democracy 2, and in the Intramural Labs.
- Conducted recycling that included collection of nearly 200 old VHS tapes, 10 boxes of spent batteries, eight boxes of old cell phones, five trash bags full of tennis shoes, and about 100 pairs of eyeglasses.
- Obtained more than 1200 pledges from NIH employees to use reusable water bottles more regularly instead of plastic bottles.

National Institute of Environmental Health Sciences (NIEHS)

Sustainability Practices

- Achieved 24 percent reduction in water consumption.
- Solar panels helped reduce draw from the grid by 0.1 percent.
- Reduced total electrical use by 5 percent due to facility and process upgrades.
- Reduced natural gas consumption by 5 percent.
- Reduced wastewater discharge by 8 percent. Began installing a reverse osmosis system that is designed to reduce wastewater discharge even further, since the system is designed to reuse about 75 percent of our cooling tower water.
- Increased the number of participants in our alternative transportation program by 16 percent.
- Designed a formal travel reduction plan aimed at reducing traffic congestion and associated environmental effects.
- Increased motor pool data collection to include miles traveled, vehicle type, usage, and miles per gallon. This data will help us better manage our fleet and keep employees informed about the environmental impacts of vehicle use.
- Piloted a 15 percent mowing reduction which increased natural areas and reduced fuel use and emissions.
- Replaced annuals with native shrubbery and perennials.
- Provided water from the campus lake only, rather than from the potable water system.
- Began composting post-consumer waste including biodegradable dishes, napkins, and food in our cafeteria. In doing so, diverted 15,790 pounds from the landfill and reduced our GHG emissions.
- Continued composting animal bedding, totaling 282,000 pounds in 2010.

Outreach Efforts

- Maintained a number of Green Teams at the RTP location including:
  - The EMS Work Group that oversees the NIEHS EMS.
  - The Energy and Water Conservation working group that identifies opportunities, facilitates savings in campus operations, and encourages employee conservation.

- The Environmental Awareness Advisory Committee that provides a forum for grass-roots employee involvement in environmental stewardship.

- Continued membership in the North Carolina Environmental Stewardship Initiative (ESI), a voluntary program for North Carolina organizations that commit to improving their environmental performance beyond traditional levels of compliance.
- Hosted the 2010 annual ESI conference.
- Continued to take an active role in the RTP corporate community as a member of "environment@rtp" and "smartcommute@rtp," working directly with community partners to reduce regional environmental impacts and promote alternative transportation.

National Institute of General Medical Sciences (NIGMS)

Sustainability Practices

- Started a battery collection to recycle old alkaline, lithium, and rechargeable batteries.
- Continued to purchase ENERGY STAR® office and IT equipment, as well as recycled paper.

Outreach Efforts

- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Hosted a recycling collection site for eye glasses, cell phones, sneakers, batteries, and media in Building 45 for Earth Day.
- Created a screensaver reminder for Institute staff to turn off lights when they leave offices or meeting rooms.
- Conducted a follow-up survey to track progress on green initiatives.
- Promoted NIH Paper Free Day, as well as other green events, such as Power IT Down Day.
- Organized an Institute-wide office clean-out in support of the America Recycles Day.
- Spearheaded a new effort to encourage recycling at the Institute's annual picnic.

National Institute of Mental Health (NIMH)

Sustainability Practices

- Distributed approximately 150 desk-side recycling bins to headquarters (HQ) and 60 bins to in the IRP.
- Posted instructional, county posters near all recycling bins.
- Purchased and installed power strips at microwave ovens on all three NIMH floors at the Neuro Science Center (NSC), and posted adjacent signs asking people to switch off the strip when finished using the microwave.
- Implemented Pepco review with Pepco finding "no opportunities" for improvements.
- Requested a building water test to promote reduced use of bottled water. Report showed fairly good water quality and prompted research into carbon filters for kitchenettes.
- Conducted research on electric hand dryers in restrooms.

Outreach Efforts

- Conducted HQ recycling survey that yielded a 68 percent response rate from all staff.
- Conducted a follow-up HQ recycling survey with results pending.
- Initiated and announced collection of holiday string lights.
- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Sent staff email to promote NIH Paper Free Day.
- Initiated and developed NIMH-wide green guidelines, based on staff input.
- Issued monthly "Did You Know?" emails containing green tips on energy conservation, recycling, transportation, telework, lab chemicals, and more.
- Developed several designs for NIMH Green Intranet site.
- Hosted tables at Earth Day and America Recycles Day that demonstrated scanning, promoted eco-friendly products, provided telework information and collected eye glasses, batteries, and tennis shoes.
- Organized an outreach table at NIH Awards Event that included a sample rainwater barrel and materials on the bike club, energy conservation, and telework. Also provided organic and local fare to promote sustainable agriculture and healthful eating via grilled and raw vegetables, fresh fruits, and cheeses.

- Designed greening presentation to NIMH IT users group and distributed it to Green Committee members for their use at branch meetings.
- Developed Green SharePoint site.

National Institute of Neurological Disorders and Stroke (NINDS)

Sustainability Practices

- Distributed approximately 250 desk-side recycling bins for mixed paper and comingled recycling to staff.
- Achieved 100 percent recycled paper purchasing throughout NINDS OD and DER.
- Distributed battery recycling bins to every building where NINDS staff are located.
- As a pilot, installed Dyson hand dryers in Building 31 bathrooms.

Outreach Efforts

- Participated in NIH "Lights Out" Campaign by adhering stickers and magnets to office light panels to remind staff to turn off lights when a room is not in use.
- Continued to publish green tips in bimonthly staff newsletters including topics on recycling, energy conservation, bottled water, recycled paper, paper use reduction, and ways to go green at home.
- Hosted a green ideas competition that encouraged staff to submit greening ideas.
- Hosted a showing of the PBS documentary, "Poisoned Waters," which was attended by about 50-60 people and featured comments from Dr. Birnbaum of NIEHS.
- Instituted a summer green movie series in July, showing "Kilowatt Ours" and "The Story of Stuff" in multiple locations.
- Spearheaded the first Green Labs Fair, which included a vendor fair with information on green products and presentations on greening labs. Approximately 60 staff from various ICs attended the event and future fairs are planned for 2011 throughout NIH.
- Participated in America Recycles Day where volunteers answered questions about recycling, showcased items that can be recycled at NSC, distributed compost bins, and collected a number of items such as shoes, eyeglasses, and toner cartridges.
- Pre-Council and Extramural Science Committees started using laptops and SharePoint to inform committee members rather than printing books for their bi-weekly meetings.
- The COUNTERACT program held a meeting in San Francisco where all materials were given out on a thumb drive rather than as paper handouts. Additionally, the meeting facility provided a number of green options for catering and other amenities.

National Institute of Nursing Research (NINR)

Sustainability Practices

- Installed motion-sensor light switches for all renovated space and new construction to reduce energy consumption.
- Distributed desk-side recycling bins for all offices and placed multiple recycling bins in common areas to encourage recycling of paper and commingled recyclables.
- Purchased ENERGY STAR® equipment that enables energy savings features on personal computers.
- Promoted use of cost-efficient network printers as an alternative to desktop personal printers to reduce paper, ink, and energy consumption.
- Set the default on all network printers to duplex printing and encouraged scanning in lieu of creating paper copies to reduce paper consumption.
- Procured greener office supplies, in particular, NINR switched from purchasing 30 percent post-consumer waste paper to 100 percent post-consumer waste.
- Assigned laptops to employees as their primary computer to reduce the need for a desktop. NINR is in the process of phasing in the purchase of laptops and docking stations to reduce dual computer purchases.

Outreach Efforts

- Participated in NIH-wide education events including Earth Day and Paper Free Day.
- Implemented the electronic POTS in December 2010 which eliminated paper requests.
- Encouraged regular telework and participated in Transhare as a way to reduce GHG emissions from commuting.
- Required and ensured that employees annually complete the NEMS Awareness Training.

- Disseminated a quarterly Go-Green message to NINR staff with quick and easy green tips for staff to use in the workplace and at home.
- Provided helpful information, announcements, activities, and news about sustainability on the newly launched Go Green Intranet webpage.
- Implemented a variety of workflows within SharePoint to reduce the need to circulate paper documents for approval.

National Library of Medicine (NLM)

Sustainability Practices

- Purchased a high-speed document scanner.
- Piloted the Watt Stopper Surge Protector program. The Watt Stopper Isolé IDP-3050 is an eight- receptacle surge suppressor with an occupancy sensor that controls six of the eight receptacles. Any devices plugged into the six controlled outlets will power down when there is no motion in the immediate area.
- Updated all network printers so that duplex printing is set as default and required that all new printers have the capability to auto-duplex.
- Initiated a pilot project to evaluate data service vendors for a Wake-on-LAN solution with the goal of reducing the amount of energy consumed by PCs. The project team will be contacting vendors to evaluate their products based on our requirements.
- Procured ENERGY STAR® equipment which enables energy savings features on computers and other office equipment.
- Continued participation in the NIH desk-side recycling program and began stocking 100 percent recycled copier paper instead of 30 percent recycled copier paper.
- Purchased office supplies and furniture that contain recycled and non-toxic content to conserve natural resources and reduce waste.
- Migrated to electronic scanning of grant applications resulting in a 90 percent reduction in printed documentation.
- Installed Intelligent Platform Management Interface (IPMI) to monitor server temperature and ensure load and heat are evenly distributed in the computer room. Installed high air-flow panels to all cabinets in the computer room to improve HVAC efficiency.
- Deployed project management software that includes document storage and archival system that significantly reduces paper printing and copying of documents.
- Installed automatic light sensors in private offices to conserve energy and motion detector lighting controls in high-traffic areas, such as the kitchen and printer station.
- Installed light sensors in three floors of the Natcher building.
- Incorporated energy efficiency measures in all construction activities.
- Continued increasing storage capacity of Building 38 to house the NLM medical library collection by strengthening the floors and replacing regular shelving with compact shelving. This approach increases the amount of literature that can be stored for the same expenditure of energy for lighting and air conditioning.
- Prepared Computational Fluid Dynamic models to better understand data center equipment performance and identify areas for efficiency improvements. This resulted in the installation of chimney cabinets which lowered data center AC unit fan speed and improved central plant chilled water generation efficiency.

Outreach Efforts

- Participated in Earth Day, providing outreach materials and displaying several active greening endeavors.
- Participated in NIH Take Your Child to Work Day where Green Team members talked to the kids about how they can help protect our environment.
- Participated in NIH Paper Free Day, focusing attention on the increased use of electronic media and the reduction of paper usage.
- Launched the Rechargeable Battery Pilot Program.

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