

Office of the Federal Environmental Executive

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Federal Employees Honored For Environmental Stewardship

On June 10, 2003, Federal employees from across the United States gathered in Washington, D.C., to accept White House "Closing the Circle" Awards for their outstanding environmental stewardship work. Twenty-six teams from 15 states and the District of Columbia were honored for outstanding military and civilian facility efforts in such categories as environmental management systems, education and outreach, purchase of environmentally preferable and biobased products, sustainable design for buildings, waste and pollution prevention, and recycling. This ninth annual White House ceremony was held in the Eisenhower Executive Office Building.

John F. Turner, Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs, applauded the winners' efforts and provided the keynote address. "We honor those who have chosen to get involved and take action to improve the environment for this and future generations," he remarked. John L. Howard, Jr., the Federal Environmental Executive, added: "The Closing the Circle award winners have demonstrated that the federal government can lead by example. We're proud of all that they're doing to improve the quality of life in each of their communities."

The following are the 2003 Closing the Circle Award Winners by category:

EDUCATION AND OUTREACH - MILITARY

U.S. Army

Installation Sustainability Program
Fort McPherson, GA

The Installation Sustainability Program was developed in response to concerns about environmental issues and the Army mission. A sustainability team was formed to develop an integrated strategy to tie resources to objectives and engage stakeholders at all levels to sustain the mission.

The team successfully promoted education, outreach, and partnering to engage the right players in pollution prevention planning and implementation; initiated process improvement of pollution prevention planning by making it a collaborative process; and used environmental management systems concepts as the framework for the program, as required in Executive Order 13148.

After successful implementation at U.S. Army Forces Command installations, the program is going Army-wide starting in fiscal year 2004.

The Installation Sustainability Program benefits the Army in a number of ways: it enhances military training opportunities; increases the well being of soldiers and families; benefits relationships with local communities and regulatory agencies; reduces cost to operate the installation; and improves compliance with environmental laws, which results in a healthier and more sustainable environment.

Michael "Recycle" Redfern
Randolph Air Force Base
The Adventures of Michael Recycle
Randolph AFB, TX

Mr. Redfern has spearheaded numerous education and outreach initiatives to promote the objectives of Executive Order 13101, and also the DOD and Air Force solid waste reduction goals.

Mr. Redfern began working on a "break-even or better" recycling policy for the Air Education And Training Command at a time when the recycling program was losing more than \$250,000 per year and the solid waste diversion rate was below 20%. Mr. Redfern conducted a thorough review of all aspects of the recycling and composting operations and developed new plans for each facility. Mr. Redfern's outreach efforts helped to create markets through a series of interagency partnerships, cooperative marketing agreements, and concerted awareness efforts.

In calendar year 2002, the recycling program generated more than \$2.4 million, earned almost \$1 million in sales, and diverted more than 130,000 pounds of waste from landfills, for a 38% diversion rate.

Mr. Redfern has initiated a variety of pilot projects covering everything from a building grinder initiative that has saved an estimated \$5 million in demolition costs and recovered tons of building materials; a pill bottle "take back" program at a medical center; to his latest program: evaluating the use of pulverized glass to stabilize sand roads.

Mr. Redfern also actively assists in the formation of partnerships with communities, counties, schools, businesses, chambers of commerce, civic organizations and private recycling businesses.

EDUCATION AND OUTREACH - CIVILIAN

Federal Network for Sustainability
Achieving Sustainable Environmental Stewardship
San Diego, CA

Originally launched on Earth Day 2000, the Federal Network for Sustainability is an alliance of 13 West Coast Federal agencies, representing 160,000 Federal employees, who share staff, authorities, and experience to collectively reduce waste, pollution, and energy consumption. The principal goal of the Federal Network for Sustainability is to use the vast consumer power of the Federal government to promote sustainable practices.

Its current efforts are focused on advancing the demand for greener copier paper; helping to influence the market for more sustainable electronic products; purchasing alternative and renewable energy; and implementing environmental management systems. They have created a website to house background information and a wide range of information resources and tools.

For example, in 2002 the Network brought together the Department of Energy, Bonneville Power Administration, and the General Services Administration, to stimulate the future purchase of cost-effective green power by Federal facilities throughout the Northwest. The Network facilitated the use of solar power to provide the entire energy needs of National Park Service entrance stations. This precedent paved the way for additional use of photovoltaics for National Park Service applications, with more than half a dozen more projects scheduled for development. Total savings of \$1 million will be realized.

The Federal Network for Sustainability has formed a multi-agency EMS workgroup to specifically work on the development and implementation of Environmental Management System training for Federal facilities. The network is also actively supporting the Federal Electronics Challenge, a nation-wide outreach initiative to promote electronic products stewardship by the Federal government.

U.S. Department of the Interior, National Park Service

Sustainable Practices Team, National Capital Region

National Capital Region Sustainability Fair

Washington, DC

The Sustainable Practices Team created and spearheaded the First National Capital Region Sustainability Fair titled: "*Sustaining America's Special Places: Your Parks, Your Communities.*" This two-day event took place on the National Mall, in the vicinity of the Washington Monument, in May 2002. The fair focused on fostering partnerships with community organizations and community activists, state and local governments, and the local business community.

The event focused on attracting individual participation in the local community leadership programs and to join environmental organizations. The Sustainability Team published an information booklet detailing park activities in the National Capital Region, along with multi-media graphic panels highlighting sustainable topics and practices currently underway in each of the parks within the National Capital Region.

This fair is an excellent example of meeting, head on, the challenges of preserving and protecting our natural and cultural resources through education and outreach.

This special event encouraged the National Park Service and the community to begin to think about sustainable practices that can be implemented at work, in their neighborhoods and in their personal lives.

AFFIRMATIVE PROCUREMENT - MILITARY

Wright-Patterson Air Force Base

Affirmative Procurement Program

Wright-Patterson AFB, TX

Wright-Patterson created an Affirmative Procurement Working Group, which developed, published, and implemented a successful affirmative procurement plan and policy. All new contracts issued by the local procurement office now contain standard contract clauses for affirmative procurement.

Purchases of recycled-content items continue to significantly increase. For example, during fiscal year 2002, more than 100,000 reams of 30% post-consumer recycled content copy and printing paper were purchased by base organizations. Wright-Patterson also purchased almost 140,000 gallons of biodiesel in 2002.

Wright-Patterson is working with the General Services Administration, to pilot test *Air Force Advantage!* - an on-line ordering tool customized to track recycled-content item purchases by Wright-Patterson.

Additionally, Wright-Patterson annually trains more than 500 new government purchase cardholders and billing officials in recycled-content purchasing and conducts affirmative procurement briefings throughout all operational organizations.

AFFIRMATIVE PROCUREMENT CATEGORY - CIVILIAN

James J. Behrmann,
U.S. Fish and Wildlife Service, Region 6
Green Procurement
Lakewood, CO

Mr. Behrmann has been extremely proactive in developing a comprehensive environmental and affirmative procurement program for Region 6, Fish and Wildlife Service. After completing baseline environmental audits for all facilities in the 8 states of Region 6, and performing an environmental management review, he established a regional waste prevention, recycling, and Federal acquisition program.

Several significant greening initiatives have taken place since the program was established. They include: initiating the use of 100% post-consumer recycled content, chlorine-free copier paper in the regional office and the field stations; appointing recycling coordinators in all field stations; implementing active coordination with Region 6 contracting and general services to ensure waste prevention and green procurement are incorporated into all contract documents.

Other noteworthy procurement initiatives Mr. Behrmann has implemented include purchasing recycled plastic shingles and lumber and initiating a re-refined oil usage program that has expanded to 25 of the regional facilities.

Mr. Behrmann has also conducted pilot programs to demonstrate the feasibility of engine coolant recycling equipment and provided guidance to the field stations on recycling items such as fluorescent bulbs, batteries, and light ballasts.

WASTE/POLLUTION PREVENTION - MILITARY

U.S. Army, Crane Army Ammunition Activity
Reuse of Marine Location Markers
Crane, IN

Marine location markers are designed for use in air and sea rescue operations, and man overboard operations. They contain red phosphorus and require disposal by costly incineration. Crane's Marine Location Marker Team examined the marine location marker process, overcame design obstacles, and implemented an innovative demilitarization method that found a new use for rejected red phosphorus candles.

The Team was responsible for the reuse of more than 52,000 pounds of red phosphorus from marine location marker munitions material, resulting in cost savings of more than \$2 million, disposal cost savings of more than \$600,000, and an improved waste diversion rate of 80%.

Before this new technique, there were no demilitarization capabilities in the U.S. military for munitions items containing red phosphorus besides incineration and open burning or open detonation. The marine location marker team successfully designed a new demilitarization process also was granted authorization to proceed with manufacture of new marine location markers utilizing parts from the failed markers.

John A. Wildie

Randolph Air Force Base
Reducing Hazardous Wastes and Protecting the Environment
Randolph AFB, TX

Because of Mr. Wildie's efforts, Randolph Air Force Base's hazardous waste generation was reduced from more than 30,000 pounds to less than 5,000 pounds during calendar year 2001. That is exceptional!

Mr. Wildie established effective procedures to manage waste streams without creating hazardous wastes or incurring disposal costs. He particularly focused on contaminated gasoline and alodine. Contaminated gasoline is managed as an off-specification commercial fuel and sent to a refinery for recovery and reprocessing. Alodine is a chrome corrosion inhibitor used as an aluminum pre-painting surface preparation on aircraft and creates hazardous wastewater. This waste is processed through an electro coagulation unit, which causes the metals to come out of solution. The treated wastewater can now be properly discharged into the base's sanitary sewer system.

Mr. Wildie has also developed programs to sell the hazardous materials generated by aircraft maintenance operations; created a new procedure for managing fuel and petroleum, oil, and lube spills; and expanded the use of the aircraft tire disposal program to include vehicle and personal use tires, ensuring all used tires generated on Randolph Air Force base are recycled.

WASTE/POLLUTION PREVENTION - CIVILIAN

Chattahoochee Forest National Fish Hatchery
Hazardous Materials Pollution Prevention and Minimization Program
Suches, GA

The Chattahoochee Forest National Fish Hatchery has made outstanding achievements in the reduction of hazardous materials and elimination of excessive storage used in daily maintenance operations.

The hatchery, located in the heart of the Chattahoochee National Forest, is very isolated. The hatchery team initiated an aggressive pollution prevention program to examine station operations and identify substances to eliminate, reduce or recycle.

The team inventoried more than 200 distinct substances ranging from toxic chemicals to common cleansers and modified hatchery operations, changed maintenance processes, and aggressively executed pollution prevention techniques.

Through employee awareness and education, the station has reduced the storage of chemicals by 60%. Through recycling efforts, waste has been reduced by 50%. Thanks to all of these initiatives, the hatchery is now a cleaner, safer, more environmentally friendly place to work.

U.S. General Services Administration
Environmentally Friendly Windpower
New York, NY

Using wind power enables Federal agencies to reduce their dependence on fossil fuels while protecting the environment. Last June 2002, GSA awarded the Federal government's first 100% wind power contract to "Select Energy." The contract requires that the company provide both the Binghamton and Pirnie Federal buildings with 100% wind energy supplied from wind generation facilities.

The Pirnie Federal building is located in Utica, New York, and consumes 500 MWH and the Binghamton Federal building, is located in Binghamton, New York, and consumes 600 MWH.

The environmental benefits of procuring 100% windpower for both buildings are as follows: expected

decreases in the release of sulfur dioxide (SO₂) of more than 8,000 pounds per year; nitrogen oxides (NO_x) more than 3,000 pounds per year; and carbon dioxide (CO₂) more than 1.6 million pounds per year.

As a direct result of wind power procurement, GSA has become a member of the Environmental Protection Agency's Green Power Leadership Club. This means that GSA's wind power procurement exceeded EPA's minimum green power requirements for buildings that consume less than 100,000 KWh by a factor of four.

ENVIRONMENTAL PREFERABILITY - MILITARY

U.S. Navy, Naval Facilities Engineering Service Center

In-situ MTBE Biobarrier for Reduction of Environmental Impacts
Port Hueneme, CA

The in-situ "biobarrier" is a passive flow-through treatment system, developed at the Naval Base Ventura County, to treat ground water impacted by fuel contaminants, including methyl tertiary-butyl ether (MTBE). In this process, dissolved contaminants, such as MTBE, are carried by groundwater to an engineered in-situ treatment zone under natural-gradient conditions. The target contaminants are then aerobically degraded. The groundwater leaving the treatment zone is free of these contaminants.

The biobarrier removes 99.9% of the MTBE and is equally effective at removing benzene, other petroleum hydrocarbons, and tertiary butyl alcohol from the groundwater. The biobarrier technology is cost-effective and conserves scarce natural groundwater resources.

The Naval Base Ventura County will realize long-term MTBE treatment cost savings of about \$30 million, by keeping the biobarrier system operational and converting the base's conventional pump and treat system to a second biobarrier system. The biobarrier technology also significantly reduces the operating costs associated with groundwater pump and treatment systems. These costs are currently estimated to be about \$400,000 per year on average for Navy sites.

ENVIRONMENTAL PREFERABILITY - CIVILIAN

Committee for Purchase from People Who Are Blind or Severely Disabled

Javits-Wagner-O'Day (JWOD) Green Cleaning Partnership
Arlington, VA

During 2001-2002, a community rehabilitation program, Chimes Inc., began to use environmentally preferable cleaning products in more than 20 million square feet of Federal office space, improving indoor air quality for as many as 90,000 Federal employees in the Washington, DC area, and putting safer products in the hands of more than 1,400 disabled workers.

As many as ten organizations worked cooperatively to make these products readily available in the Federal marketplace, and ensured that the products meet newly-adopted, stringent criteria for environmentally preferable cleaning products.

The Committee for Purchase from People Who Are Blind or Severely Disabled developed a memorandum of understanding with the U.S. Department of the Interior and the U.S. EPA to work together to realize these opportunities. The ten organizations that partnered are: the U.S. Department of the Interior, the U.S. Environmental Protection Agency, the Committee for Purchase from People Who Are Blind or Severely Disabled, the National Industries for the Blind, NISH, Green Seal, Rochester-Midland, Inc., the St. Louis Lighthouse for the Blind, Eagle Maintenance Supply, and Chimes, Inc.

Although customers and users often question the efficacy of environmentally preferable products when

they are first used, not one customer has discontinued the use of these environmentally friendly products.

Agricultural Research Service (ARS)

Water Management Research Laboratory

Preservation of Stratospheric Ozone Through New Soil Fumigation Technologies

Parlier, CA

Methyl bromide is a fumigant used to control pests and diseases in soils before fruit and vegetable crops are planted. It has recently been determined to be an ozone depleting substance.

The USDA Agricultural Research Service's Water Management Research Laboratory formed a research team to find alternatives to fumigation with methyl bromide. Team scientists concentrated on developing innovative ways to apply alternative fumigants that minimized risks to workers and the environment, improved fumigant effectiveness, and minimized their costs. One of the primary successes of this research program was the development, demonstration, and adoption of application of alternative fumigants through drip irrigation systems.

The team utilized scientific expertise in irrigation engineering, chemistry, and plant pathology to determine the proper fumigant formulations, develop equipment and procedures that are safe and dependable, and establish application practices that provide effective pest and pathogen control in the soil and result in reduced air emissions.

The impact of the team's research will certainly be global, as the restrictions on methyl bromide usage are international.

Sonya J. Capek

National Park Service, Pacific West Region

Tools to Promote Environmental Purchasing

Seattle, WA

Ms. Capek developed the handbook: "Environmental Purchasing in the National Park Service – a How-to Guide." This handbook is a "one-stop shopping" resource for environmental purchasing, including Federal requirements, principles, an affirmative procurement plan and Federal Acquisition Regulation considerations.

Distributed to 56 national parks in the Pacific West Region, the handbook also has been distributed to offices and parks outside Pacific West Region and soon will be edited for service-wide official use and distribution.

Ms. Capek also developed and co-coordinated "environmental contracting" training for 40 Pacific West Region procurement/contracting officers and project managers. Additionally, Ms. Capek prepared two exceptionally user-friendly tools: the "*Green Janitorial Products and Practices Guide*" which identifies non-toxic products, vendor sources, and green seal standards; and the: "*100+ Best Management Practices Guide*," which recommends a variety of practices defining "what a green park looks like."

SUSTAINABLE DESIGN/GREEN BUILDINGS - MILITARY

Naval District of Washington

Sustainable Design/green Buildings in Adaptive Reuse

Washington Navy Yard, DC

The Naval District Washington demonstrated its commitment to the concepts of sustainable design/green buildings in the continuing renovation of the Washington Navy Yard.

Sustainable design features were installed in three of the four buildings of the new Naval Sea Systems Command. They include special features for the building envelope and for the heating, ventilation and air conditioning systems, such as efficient windows with low emissivity glass to provide low shading factor;

tinted glass walls on the south and west exposures; skylights to provide natural day lighting; light shelves to provide shading as well as day lighting; low energy loss walls and roofs provide enhanced thermal insulation; variable frequency drives lighting systems; chilled water system; air distribution system; recycled materials and reuse of existing buildings where practical.

One of the facilities, Building 33, is being monitored for its energy performance to determine the effectiveness of the energy efficient strategies, and the results will be used in refining the planning and design for future projects.

U.S. Army Intelligence Center and Fort Huachuca, Arizona

Water Resources Management Process and System

Fort Huachuca, AZ

In 2002, the Water Management Program at Fort Huachuca set an aggressive goal to “zero balance” water pumping on the Fort by the end of 2007, and Fort-related water pumping in the region by 2011. The concept of “zero balance” means that the net impact of the Fort’s pumping on the regional aquifer would be zero, or no net withdrawal from the aquifer.

The program plan assesses opportunities in three major strategies: water conservation; reuse of treated wastewater for irrigation; and recharge of treated wastewater and urban runoff to reduce overall impact on the aquifer.

Technology implemented to date includes: water-less urinals; 1.5 gallon per minute showerheads; horizontal axis washing machines; re-landscaping of turf area; installation of drip irrigation; low-flow toilets and faucets; purell dispensers; and xeriscape landscaping.

The Fort has also entered into partnerships with the Nature Conservancy and the Regional Watershed Partnership to purchase conservation easements that retire agricultural pumping in the region.

SUSTAINABLE DESIGN/GREEN BUILDINGS – CIVILIAN

U.S. Department of Energy, Sandia National Laboratories

Incorporating Sustainability in the Model Validation Facility

Albuquerque, NM

Sandia National Laboratory’s Model Validation and Systems Certification Project represented the lab’s first attempt to incorporate sustainability into a local major construction project.

The project requirements and the design and construction processes included sustainable design project features based on the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) rating system. The model validation project was constructed by renovating an existing facility at the lab.

In particular, the sustainable design specifications addressed site considerations, the building envelope, energy efficiency, indoor air quality, safeguarding water, procurement of recycled content items, and recycling of construction material.

The process developed during the model validation has become a standard for other Sandia National Laboratory projects. To date, eight other buildings at Sandia National Laboratory are being designed and constructed with sustainable design features, using this model. Based on the success and benefits of incorporating sustainable design into specific projects, Sandia National Laboratory is reviewing and revising its standard construction specifications and engineering manual to incorporate sustainable design elements.

U.S. General Services Administration

Youngstown Courthouse Achieves LEED Certification
Chicago, IL

The recently completed U.S. courthouse in Youngstown, Ohio, is the first courthouse developed by GSA to receive a prestigious LEED certification. It was also designed by a world-renowned architect using GSA's design excellence principles.

A former Brownfield site, the courthouse was completed under budget and ahead of schedule. The project added a cost effective, environmentally sound facility to GSA's real estate inventory while making a significant and positive impact on Youngstown's downtown.

Excavated earth from the site was used to grade the site. More than 50% of all project debris, including paper, steel, and metal was recycled. Low-water plants reduced water usage significantly. The estimated annual savings in water consumption is 1.1 million gallons, or the equivalent of a swimming pool the size of an NFL football field filled just over 3 feet deep.

To reduce ozone depletion, HFC refrigerants are used in the chiller and water coolers and the fire suppression system uses no halon. The project engineer estimates that, as a result of the sustainable design, the new facility's annual electrical savings will be nearly 10% and the annual energy savings will be about 22%.

ENVIRONMENTAL MANAGEMENT SYSTEMS - MILITARY

Dyess Air Force Base, 7 Civil Engineering Flight

Environmental Management Systems for Compliance Through Pollution Prevention
Dyess AFB, TX

Dyess Air Force Base has made tremendous strides in the on-going development, implementation, and improvement of its Environmental Management System. The base's accomplishments during the past year have been nothing short of incredible.

Dyess Air Force Base has not only achieved, but has surpassed its EMS goals for energy conservation, water conservation, compliance through pollution prevention, and natural resource conservation. Hazardous waste reduction has risen to 96%. Hazardous waste disposal costs have been reduced by over 77%. Electrical consumption has been reduced by over 2.7 giga-watts per hour for an annual savings of more than \$900,000 annually. Potable water consumption has been reduced by more than 120 million gallons. Other EMS initiatives included several pest control initiatives using no pesticides that resulted in an 80% reduction in pesticides. The base also now is purchasing its electricity through "green energy" from renewable wind sources.

ENVIRONMENTAL MANAGEMENT SYSTEMS - CIVILIAN

U.S. Coast Guard Yard, Baltimore

USCG Yard's EMS-ISO 14001 Certified for 3 Years
Baltimore, MD

The U.S. Coast Guard Yard in Baltimore is the first organization in the Coast Guard to achieve ISO 14001 certification and is the first shipyard in the U.S. to attain this goal. The shipyard achieved this success after completing an intense examination of its Environmental Management System, completing a journey that began 6 years ago.

ISO 14001 certification insures the yard's compliance with environmental regulations and commits the shipyard to continually improve its environmental performance by utilizing processes designed to foster continuing environmental dynamics.

Under their EMS, the industrial and environmental teams worked together and found a new paint system that cut the yard's use of n-butyl alcohol by 80 percent, to less than 2,000 pounds. Changing operations

to adhere to the ISO standard also yielded greater productivity and employee safety. The yard now uses hydro-blasting instead of abrasive grit blasting for paint removal. This eliminates airborne contaminants, allows workers to filter wastewater and process the paint chips for removal, and saves time by eliminating the need for grit and dust cleanup.

Gregory W. Allen

U.S. Environmental Protection Agency
EMS Implementation and Outreach at EPA's Environmental Science Center
Fort Meade, MD

Under the leadership and direction of Mr. Allen, the U.S. EPA, Ft. Meade Environmental Science Center (ESC) was the first medium sized non-industrial, civilian Federal facility to successfully implement an environmental management system and be certified under the ISO 14001 standard.

In its initial stages, the Ft. Meade EMS has resulted in greater overall awareness of environmental matters at the facility; complete documentation of environmental management programs; and greater awareness and integration of executive orders.

Moreover, Mr. Allen has unselfishly provided real-world advice and assistance on EMS development to both EPA facilities and facilities and personnel from other Federal agencies. He has worked closely with the Executive Order 13148 Interagency Workgroup and EPA's EMS team to include his unique experiences in training materials and classes. His leadership has paved the way for many other typical Federal facilities to achieve the benefits of an EMS.

RECYCLING - MILITARY

Patrick Air Force Base

45th Space Wing Recycling Program
Patrick AFB, FL

The most outstanding feature of the 45th Space Wing recycling program is the ability to reduce, reuse and recycle commodities and remain outstanding stewards of the environment given the space mission and unique environmental challenges at six different operating locations extending more than 10,000 miles downrange.

The program recycles all paper - including white, colored, newspaper, magazines, mixed paper and office waste; cardboard; aluminum and steel cans; plastic; oil filters; empty hazardous material containers; used oil; glass; laser toner and inkjet printer cartridges; CD-ROM and floppy disks; notebooks; binders; plastic spiral binder spines and compact disc jewel cases.

Along with office and industrial recycling, the Wing has an extremely diligent and extensive curbside recycling program, supporting all military family housing locations. More than 1,900 tons of material were recycled last year. A state-of-the art material recycling facility contributes to this success. The Wing gets "top dollar" for recyclable commodities, averaging \$150,000 each year. This dynamic program has reduced the amount of solid waste going to landfills by 67%.

RECYCLING - CIVILIAN

U.S. Environmental Protection Agency, Region III

EPA Region III e-Cycling Pilot
Philadelphia, PA

In October 2000, EPA Region III joined forces with environmental agencies in the Mid-Atlantic States, the District of Columbia, and electronics manufacturers, to find a sustainable way to remove end-of-life computers and televisions from the municipal waste stream. EPA and its partners worked hard to demonstrate the feasibility of a multi-state, public/private, residential electronics collection, reuse, and

recycling model that's based on shared responsibility among government, industry, and consumers. Partnering agencies organized and held over 46 residential electronics collection events in more than 35 jurisdictions. Through these events, the e-cycling project diverted over 2,500 tons of end-of-life electronics from the municipal waste stream, including more than 22,000 cathode ray tubes.

The program not only collected empirical data about electronics management costs, but also helped develop recycling markets, demonstrated the feasibility of a multi-state collection and recycling program, and harmonized regulations across states boundaries.

Buenos Aires National Wildlife Refuge

Standard Operations Procedure for Refuge Procurement and Waste Management
Sasabe, AZ

Over the last several years, the refuge's pollution prevention program has grown from a one person, small program to one that has become the showcase of the Fish And Wildlife Service in the Southwest Region. The recycling operation began modestly collecting office materials such as paper, soda cans, glass and plastics. The refuge is now recycling everyday items from the maintenance areas such as used tires, batteries, oil, solvents, and oil and fuel filters. By the end of 2000, the refuge was recycling more than 40% of its generated waste. The refuge was able to reach this percent by adding newspaper, colored paper, mail, and colored glass to the recycling program.

Since the program began, more than 10,000 pounds of office materials have been recycled. In addition, approximately 1,200 pounds of aluminum, 700 pounds of plastic, and about 22,000 pounds of scrap metal were collected and recycled. The refuge also now purchases products with high percentage of post-consumer and recovered fiber including tissue, copier and bond paper, cardboard, plastic trash bags, and toner for copier machines.

BIOBASED PRODUCTS – MILITARY

Defense Energy Support Center (DESC), Fort Belvoir, Virginia
Promotion of the Use of Biobased Fuels in the Federal Government
Fort Belvoir, VA

Beginning in 1999, the Defense Energy Support Center staff worked with the Department of Energy and the Office of the Secretary of Defense to become proactive in the implementation of biobased alternative fuels in Federal government fleets. Specifically, DESC has led the way for the military services and Federal civilian organizations in the procurement of E85 - a blend containing 85% ethanol and 15% gasoline, and B20 - a blend containing 20% vegetable oil and 80% low sulfur diesel fuel.

DESC staff worked with commercial standardization organizations to establish requirements for the use of B20 that would not have a negative impact on vehicles or equipment using this petroleum/vegetable oil blend and developed a procurement clause that listed a set of requirements that the B20 product must meet until a commercial specification is available.

The Center's Ground Fuels And Product Technology Division has worked with agencies such as the U.S. Postal Service, DOE, USDA and the National Park Service to purchase B20 and E85. The requirements for 2001 totaled 565,000 gallons for E85 and 1.4 million gallons for B20. This increased more than 5 million gallons in requirements of B20 for 2002.

BIOBASED PRODUCTS-CIVILIAN

U.S. Department of Agriculture, ARS

Biobased Products Program at Beltsville Agricultural Research Center
Beltsville, MD

The Beltsville Agricultural Research Center (BARC) has been constantly expanding the use of biobased products since 1999. The Center has worked closely with the Defense Energy Supply Center, to purchase large quantities of pre-blended B20, which reduced costs and made it easier for Defense and

civilian agencies to purchase the fuel.

In addition to biodiesel, the Center utilizes a variety of biobased products on a regular basis. Specific examples include soy-backed carpet; biobased 2-cycle oil; gear lubricant; hydraulic fluids; lithium grease; anti-wear hydraulic oil; chainsaw bar and chain lubricant; oil cutter; penetrating fluid; power steering fluid; and engine oil. All shops utilize biobased hand cleaners, parts cleaners, and metal cleaners.

When it was time to negotiate a new janitorial contract, BARC included in the statement of work a requirement that the contractor utilize biobased and/or environmentally preferable cleaning materials, restroom hand soaps, and other products. The contract was successfully awarded, and these products are being used on a daily basis in all buildings.