

# Virginia Department of Environmental Quality



**Pollution  
Prevention**

**Report  
2002**



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*This report is dedicated to the memory of  
William J. Sarnecky, who devoted his career to  
preventing pollution in Virginia.*

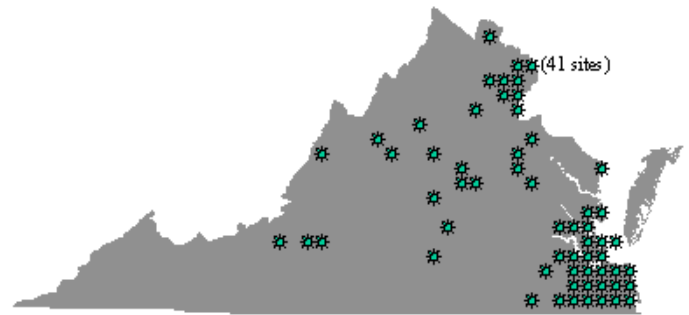
# Virginia Environmental Excellence Program

The Virginia Environmental Excellence Program (VEEP) was launched in mid-2000 to encourage and recognize the use of environmental management systems and pollution prevention. An environmental management system is a cohesive, comprehensive set of written environmental policies and procedures which identify an organization's environmental goals and objectives and defines how the organization will achieve and maintain those goals. VEEP offers positive public recognition and other incentives to program participants and is open to all types of facilities, including manufacturers, agricultural operations, government agencies and commercial establishments.

There are two levels of participation, "Environmental Enterprise" or E2, for those organizations that are interested in developing or are in the early stages of implementing an environmental management system, and "Exemplary Environmental Enterprise" or E3, for those facilities with fully implemented environmental management systems.

## During 2002, major accomplishments of the program included:

- An increase in the total number of VEEP facilities from 89 to 114. An additional 19 applications are under review.
- Receipt of annual reports from early participants, which quantified significant economic and environmental benefits.
- An emphasis on participation in the program by Virginia's local governments. DEQ has participated in several sessions of training presented by Virginia Tech's Center for Organizational and Technological Advancement. A number of the participating localities have been accepted as E2 facilities, many more are expected to apply within the next six months, and one, the City of Manassas, has achieved E3 status (see complete listing of VEEP facilities on next page).
- The signing of a Memorandum of Agreement (MOA) between the U.S. Environmental Protection Agency (EPA) and DEQ to promote the coordination and cooperation of VEEP and EPA's National Environmental Performance Track Program. Virginia was one of four states to agree to work more closely with the federal program, signing the MOA with EPA in April, 2002.



**VEEP E2 (Environmental Enterprise) Facilities, Fall 2002 (100)**



**VEEP E3 (Exemplary Environmental Enterprise) Facilities, Fall 2002 (14)**

The goals of the MOA include:

- Coordinate the application processes of the two programs so eligible applicants can apply to both programs simultaneously. Work with facilities to identify ways to streamline and facilitate the application process for both programs.
- Provide to eligible facilities the assistance necessary to apply and be evaluated expeditiously for acceptance into both programs.
- Develop incentives that reduce program members' administrative burdens, such as reduced reporting and expedited permitting, where feasible, in recognition of their high levels of performance.
- Coordinate the delivery of incentives to achieve the maximum environmental benefit and minimize transaction costs.
- Identify regulatory innovation opportunities that comply with State and Federal statutes and regulations.
- Communicate the measurable environmental results achieved by VEEP and Performance Track to the public.

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# Virginia Environmental Excellence Program

## E2 Approved:

Associated Asphalt, Roanoke  
Atlantic Waste Disposal Inc., Waverly  
Bath County  
Town of Blacksburg  
Charles City Landfill/Waste Management Inc., Charles City  
Fort AP Hill  
Graham White Manufacturing, Salem  
Litton PolyScientific, Blacksburg  
Luck Stone Corporation (16 facilities)  
Metalpro, Springfield  
Michelin North America, Scottsville  
Naval Ophthalmic Support & Tracking Activity, Yorktown  
Norfolk Naval Shipyard  
City of Portsmouth Vehicle Service Center  
Safeway (41 stores)  
Southeastern Public Service Authority/SPSA (18 facilities)  
USMC AAA Vehicle Program, Woodbridge

## E2 Pending:

Augusta County Vehicle Service Centers  
Henrico County Springfield Road Landfill  
Southwest Virginia Higher Education Center  
Virginia Department of Accounts  
Virginia Department of Taxation  
Virginia Department of the Treasury  
Waterloo Motors, Warrenton

## E3 Approved:

BAE Systems, Manassas  
Brown & Williamson Tobacco, Chester  
Canon Virginia, Newport News  
City of Manassas (Maintenance Garage)  
City of Manassas (Water Treatment Plant)  
Continental Teves, Culpeper  
DuPont Spruance, Chester  
DuPont Performance Coatings, Front Royal  
Infineon Technologies Richmond, Sandston  
Lockheed Martin, Manassas  
Nestle USA, Danville  
PolyOne Engineered Films Group, Winchester  
Siemens Automotive, Newport News  
Tetra Pak Tubex Inc., Louisa

## E3 Pending:

Department of Environmental Quality (11 facilities)  
Security Storage Company, Dulles



## Virginia Clean Marina Program

The Virginia Clean Marina Program, sponsored by the Virginia Coastal Program and supported by the Office of Pollution Prevention, is an educational program which provides pollution prevention guidance and on-site technical assistance to marinas, local governments, and recreational boaters to minimize potentially negative impacts on water quality and coastal resources. Studies show that those marinas where best management practices have been implemented are able to charge slightly higher slip rental rates and have lower vacancy rates. Marinas meeting the Clean Marina criteria are also eligible for E2 status under VEEP. Participation in the Virginia Clean Marina Program can result in the following benefits:



- Improved water quality in the immediate vicinity of the marina and habitat for living resources.
- Reduced costs associated with waste disposal.
- Free technical assistance through OPP and the Marina Technical Advisory Program.
- Formal recognition of a marina's accomplishments through an awards ceremony.
- Use of the Virginia Clean Marina logo; positive publicity through DEQ newsletters and web sites.
- Improved worker safety and regulatory compliance; decreased legal liabilities.

As of the fall of 2002, eleven marinas had met the program criteria (an additional eighteen marinas have pledged to meet the criteria):

- Aquia Harbour Marina, Stafford County
- Ginney Point Marina, Cobbs Creek
- Norfolk Yacht and Country Club
- Salt Ponds Marina, Hampton
- Smith Point Marina, Reedville
- York River Yacht Haven, Gloucester County
- Belmont Bay Harbor, Woodbridge
- Hampton Public Piers
- Old Point Comfort Marina, Fort Monroe
- Severn River Marina, Hayes
- Two Rivers Yacht Club, Williamsburg

# Electronics Recycling & Stewardship

In late 2001, DEQ partnered with the Environmental Protection Agency's Region III office, other Mid-Atlantic states, electronics manufacturers, electronics distributors and solid waste haulers to create a pilot program on electronics reuse and recycling called the "eCycling Program". In Virginia, DEQ kicked off the program by announcing in May 2002 that it had forged partnerships with four localities that agreed to host pilot collection programs. The four local governments are the City of Virginia Beach, Wise County, Frederick County and the Richmond area's Central Virginia Waste Management Authority (CVWMA).

The issue of electronic waste is a significant one for local governments, businesses and consumers. The rapid rate of obsolescence for personal computers and potentially hazardous components make refurbishing, recycling and disposal difficult. The problem is compounded when you consider that millions of obsolete computers and other electronic components are currently in storage. Because of the hazardous components, there are additional regulatory implications for businesses.

The eCycling project's goal is to learn more about and encourage collection and recycling efforts, and the project is co-sponsoring more than fifty collection events in the Region III states. In Virginia, the four sponsored events represent a range of demographics, from densely-populated urban areas to rural locations. Each locality was afforded a certain degree of flexibility in the format of its collection. The eCycling project provides funding for advertising and recycling of the collected materials. The Office of Pollution Prevention's (OPP) role

is to assist in the coordination and advertising and provides volunteers for each event.

In addition to participating in the regional collection pilot project, in 2002, staff from the Office of Pollution Prevention created a web site entitled "Are You Plugged In?" at [www.deq.state.va.us/rupluggedin](http://www.deq.state.va.us/rupluggedin) for homeowners, businesses, government agencies and manufacturers to learn the environmental impacts of electronics and actions they can take to prevent electronics from entering the waste stream. The web-site focuses on a closed loop philosophy with information on recycling, reuse, donation, education, leasing, smart purchasing, "green" design and "green" procurement.



The first event was held in Virginia Beach on Saturday, May 11. The event was free to the public and small businesses, and approximately 68,000 pounds of electronic equipment was collected. On June 1, a similar event was held in Frederick County; fees from \$5 to \$25 were charged to citizens and small businesses for televisions and computers. The Frederick County event collected more than 28,000 pounds.

The CVWMA event was held on Saturday, October 19 at two locations in the Richmond area. This event was free to the public and small businesses for up to the first ten monitors, after which a \$5 fee per monitor was charged. DEQ's Small Business Assistance Program co-sponsored the event, and small businesses were specifically targeted. Over 44,000 pounds of electronics were collected and approximately thirty small businesses participated. The Wise County event is scheduled for March of 2003.



# Virginia Healthcare Challenge

In 2000, DEQ approached a number of Virginia hospitals and healthcare institutions to open a dialogue on the Memorandum of Understanding (MOU) between the EPA and the American Hospital Association (AHA). The MOU was signed in 1998 and commits to:

- Eliminating mercury in the nation's hospitals by the year 2005;
- Reducing hospital waste by 33% by 2005 and 50% by 2010; and,
- Identifying hazardous substances for pollution prevention and waste reduction opportunities, including hazardous chemicals and persistent, bioaccumulative, and toxic pollutants.

EPA and AHA, along with the American Nurses Association and the non-profit organization Healthcare Without Harm, created the "Hospitals for a Healthy Environment" (H2E) partnership in 2001. H2E challenges individual hospitals, healthcare systems, suppliers and organizations to pledge to do their part to help the industry meet or at least make significant progress towards the MOU goals. Part of H2E's strategy is to encourage states and provide resources to assist in the development of individual programs that mirror the national initiative.

The Office of Pollution Prevention (OPP) has made significant progress in 2002 in the development of a Virginia version of H2E:

- Establishment of Workgroup. The Virginia partnership began with the first meeting of a Pollution Prevention in Healthcare Work Group, which was held on August 28. The workgroup includes representatives of the Virginia Hospital & Healthcare Association, Healthcare Without Harm, the Virginia Dental Association, the Medical Equipment Recover of Clean Inventory Project (MERCIC) of the University of Virginia, the Virginia Nursing Association, and a core group of interested hospitals and healthcare corporations. Participants indicated full support for the initiative and offered comment and discussion on how the VH2E should be developed and implemented.

- Regulated Medical Waste Seminars. In the summer of 2002, OPP participated in a series of seven workshops presented by DEQ's waste program at various locations around the state, which focused on new regulations for the industry.

Future actions will include:

- Promotion of the VH2E. Promotion of the VH2E partnership pledge will include a website, success stories, an orientation letter to all Virginia hospitals and any other interested healthcare facilities, and a peer-to-peer letter from industry leaders.

- Opportunity Assessments and Program Development Assistance. OPP has contracted with a healthcare consultant to provide up to five pollution prevention opportunity assessments at Virginia facilities, which are planned for late 2002.

- VH2E Partnership Kick-Off Event. OPP and the VH2E are planning a media event for all Virginia facilities that are joining the partnership in early 2003.

- Mentoring. The VH2E website will provide a direct link to the H2E "list-serve" providing for Q&A assistance via email from hundreds of medical facility environmental managers across the country.

- Mercury Reduction. Promotion of H2E is part of DEQ's commitment to reduce mercury in the environment. Closely associated with this effort is OPP's pilot thermometer exchange program in which mercury collections/thermometer exchanges were conducted at seventeen Virginia high schools in the summer of 2001.



**Virginia H2E Partners**  
Healthcare Without Harm  
Virginia Hospital & Healthcare Association  
Virginia Dental Association  
Medical Equipment Recovery of Clean Inventory Project  
Virginia Nursing Association

# Businesses for the Bay



**B**usinesses for the Bay (B4B) is the voluntary pollution prevention program in support of the Chesapeake Bay restoration effort. The Office of Pollution Prevention (OPP) promotes B4B to Virginia businesses and other organizations, and serves on the B4B Workgroup and the Pollution Prevention Subcommittee of the Toxics Committee for the Chesapeake 200 Agreement. In fact, the Agreement relies heavily upon the expected achievements of businesses participating in B4B.

The “Toxics 2000 Strategy” of the Chesapeake 2000 Agreement recommit to the 1994 Toxics Strategy goal of a “Chesapeake Bay free of toxics by reducing or eliminating the input of chemical contaminants....” The strategy embraces the concepts of voluntary “pollution prevention”, “reduction”, and “elimination” as the means to reaching this goal. The Toxics 2000 Strategy includes challenging numeric goals for *Businesses for the Bay*:

- *Businesses for the Bay* participants will prevent or recycle a total of one billion pounds of hazardous substances between 1999 and 2005.
- By 2005, *Businesses for the Bay* will have 1,000 participants throughout the watershed; 50% will be small businesses with fewer than 100 employees.
- By 2005, *Businesses for the Bay* will have a total of 300 mentors providing voluntary peer-to-peer pollution prevention assistance; the mentors will annually conduct 500 interactions with those in need.

As of October 2002, the entire *Businesses for the Bay* program had approximately 450 participants and nearly 100 individuals volunteering to provide peer-to-peer mentoring assistance. Of that total, 250 members and 69 mentors were from Virginia. In 2002, Virginia membership increased by 48 and mentors increased by 19. Numbers have not been tallied for 2002. However, in 2001, Virginia B4B participants reported the following results:

- 10 million pounds of waste reduction
- 114 million pounds of material recycled
- \$2.1 million in cost savings

## 2001 Virginia B4B Award Winners:

- Outstanding Achievement Large Business: Siemens Automotive Corp.
- Honorable Mention Large Business: Lee’s Carpet
- Outstanding Achievement Retail Business: Target Corp.
- Outstanding Achievement Nutrient Reduction: Merck & Company, Inc.
- Outstanding Achievement Medium Business: Beers/Heyward & Lee Construction
- Significant Achievement Small Business: Southern States Cooperative
- Outstanding Achievement Government Facility: Marine Corps Base Quantico
- Ernest Hartman: Achievement award for his leadership in the program.

## Businesses for the Bay Successes:

**Southern States Cooperative**: In response to a suggestion by Bob Ehrhart of DEQ's Chesapeake Bay Program, Southern States has agreed to print a new label featuring the Bay Program and Businesses for the Bay logos and information related to protecting the Bay through the proper application of the fertilizer. All Southern States fertilizers will have feature the label by the spring of 2003.

**US Army-Fort Eustis**: In 2001, through implementation of a comprehensive Affirmative Procurement program and a centralized hazardous materials management system, Fort Eustis reduced their hazardous waste generation by nearly 90,000 pounds or 33% and a 40% reduction in solid waste. In the same year, energy upgrades resulted savings of 30% and renovation and maintenance programs resulted in water reductions of 1.2 MGD.

In October, the first B4B Golf Workshop for Golf Course Superintendents was held with an emphasis on best management practices.

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# Pollution Prevention Technical Assistance

During 2002, Office of Pollution Prevention (OPP) staff visited over 185 facilities throughout Virginia to provide on-site pollution prevention and environmental management systems technical assistance. In a continuing effort to integrate pollution prevention concepts into all regulatory functions at DEQ, 110 of the site visits were made jointly with DEQ compliance inspectors. The goal of these joint visits was to identify pollution prevention opportunities that could reduce the facility's impact on the environment while lowering their compliance costs and improving working conditions. In addition, a number of joint pollution prevention site visits were made by OPP staff together with waste minimization staff of EPA Region III. The combined effort enabled the team to conduct a thorough survey of waste minimization opportunities with the facilities and to explore various ways of economically implementing them.

OPP tracks the amounts of pollution reductions that occurred at facilities where OPP has had some interaction. **Environmental improvements reported from these facilities during the period from 1998 to 2002\* include:**

- **Reductions in water discharges of over 525 million gallons**
- **Reductions in air emissions of over 2.0 million pounds**
- **Reductions of waste disposal of over 760 million pounds**

*\* Because pollution prevention in Virginia is not a mandatory requirement, information in this database has been voluntarily submitted. It is not a complete record of all environmental improvements, but the numbers reported are significant.*

## **Example Pollution Prevention Success Stories Documented by OPP in 2002:**

### **Air Pollution Reductions:**

- An aluminum fabricator changed from solvent vapor degreasing to aqueous cleaning, which resulted in reductions in volatile organic compound (VOC) air emissions of 40 tons per year.
- A ship repair facility reduced their annual paint use from 75,000 gallons to 40,000 gallons by utilizing improved spraying equipment and better paint management. The improved efficiency and the use of low-VOC, high-solids paint reduced their air emissions by over 75,000 pounds annually.
- DEQ's Tidewater Regional Office (TRO) undertook an effort to encourage fuel burners to voluntarily use transportation-grade #2 oil, which has only one-tenth the sulfur content of traditional light distillate, off-road fuel. The standard diesel oil used in boilers, diesel-operated generators and other engines may contain up to ten times this amount of sulfur. When this fuel is burned, the sulfur creates sulfur dioxide, which contributes to acid rain and smog. The sulfur dioxide emissions from fuel combustion can be reduced by up to 90% by switching to the cleaner, low sulfur diesel oil, which usually costs the same amount. For example, for each 1,000 gallons of low sulfur fuel substituted, SO<sub>2</sub> emissions would be reduced by nearly 60 pounds. For many facilities, this emission reduction can yield both environmental and public relations benefits. Examples include hospitals, schools, universities and other public institutions using boilers for heating/cooling, steam and power generation, and both large and small industrial plants looking for ways to economically reduce air emissions.

### **Water Savings:**

- A food processing plant initiated a water conservation program in its processing areas and reduced its annual water use by 3 million gallons per year.
- A food processing plant in northwestern Virginia was the focus of an OPP compliance assistance visit. The company had repeatedly violated the conditions of their land application permit because of the large amounts of wastewater they were discharging. After reviewing their processes, several suggestions were made to reduce the amounts of wastewater being generated. The company made the recommended changes and, even though production increased by 50%, water use was reduced by 52%, a 40 million gallon savings of water annually.



# DEQ's Environmental Management System

In 2001, DEQ implemented an ISO 14001 compliant environmental management system (EMS) at its central office and all of its regional and satellite offices. Over the past year, DEQ has trained its employees on EMS, organized EMS teams at each of its eleven offices and created an EMS web page on the agency intranet site that includes documentation and an electronic suggestion box. Initial results from the EMS implementation are promising. The following successes have been documented at DEQ offices:

- DEQ's Central Office in Richmond underwent a lighting retrofit. Twenty-three light fixtures on one floor were replaced (each had 4 fluorescent T-12 bulbs and each bulb consumed 34 watts/hour). The new fixtures contain 3 T-8 bulbs using 32 watts each. Better fixture design and technology provide superior lighting at lower cost. Total watts usage for the new fixtures is 2,208 watts/hour. The energy difference is 920 watts and is the equivalent of the following annual savings:

- 3,827 kWh
- \$154 (DEQ pays approximately 40% less than average; therefore, savings would be more pronounced at other facilities)
- 22 pounds SO<sub>x</sub> reduced
- 11 pounds NO<sub>x</sub> reduced
- 4.4 tons CO<sub>2</sub> reduced

DEQ's Southwest Office in Abingdon has also converted to low mercury fluorescent lamps.

- At DEQ's South Central Office (SCRO) in Lynchburg, staff have documented an increase in the recycling of paper, plastic and aluminum since the introduction of the agency EMS. SCRO staff have also targeted the office laboratory's ice machine under the EMS and are making a concerted effort to reduce energy and water consumption by scheduling its use rather than have it running continuously.

- The Piedmont Regional Office (PRO) and its satellite office in Kilmarnock have focused on paper waste reduction by increasing paper recycling and reuse by: an increased use of electronic draft documents; the reuse of paper with printing on one side of the paper; an expanded paper recycling program; and, investigation of a waste paper composting system.

- At DEQ's West Central Regional Office (WCRO) in Roanoke, increased efforts to reduce solid waste have begun to pay off, and the office has seen a reduction of 80% in one year. Particular effort has been made to get the field staff to recycle empty boxes and containers that they used to throw away. In addition to office paper recycling, WCRO has an active plastic bottle recycling program; many of the unused sample bottles from the field staff can be recycled. Staff also save coffee grounds for employees to take home for their gardens.

- In Virginia Beach, the EMS committee at the Tidewater Region Office (TRO) conducted a detailed solid waste reduction survey. The results indicated that while recycling of paper, cans, newspapers, batteries and cardboard were the norm, there were solid waste reduction opportunities. The committee distributed a list of solid waste reduction suggestions generated by the office, which include: retaining electronic copies rather than paper copies of documents and stopping unwanted or unnecessary magazine or newsletter subscriptions.

- DEQ's Valley Regional Office (VRO) in Harrisonburg is situated in the Blacks Run watershed, which has been severely impacted by intensive urban and agricultural land uses. VRO has approximately 69,000 square feet of impervious surface, including parking areas, rooftops and sidewalks. To reduce the impact of surface water runoff, in the spring of 2002 VRO staff proposed and implemented the installation of a rain garden, a constructed depressional area that is used as a landscape tool to improve water quality. The raingarden provides infiltration and water storage for stormwater runoff. The project was funded by the Shenandoah Valley Pure Water 2000 Forum as an educational demonstration project.



**DEQ VRO staff during rain garden installation.**

# environmentaLodging

In 2002, the Office of Pollution Prevention (OPP) made significant progress in its targeted outreach efforts to the hospitality industry in Virginia. *environmentaLodging* is OPP's initiative to promote pollution prevention practices in the tourism and hospitality industry. *environmentaLodging* encourages hotels, resorts, and other hospitality operations to be aware of their impact on the environment and to take steps to reduce these impacts.

During 2002, OPP was in contact with more than seventy hospitality facilities. Twenty individual facilities worked closely with OPP staff to document their pollution prevention activities, and they received certificates detailing their accomplishments. In addition, the facilities and their accomplishments were featured on the *environmentaLodging* website at [www.deq.state.va.us/p2/lodging](http://www.deq.state.va.us/p2/lodging).

The website was upgraded in 2002, making the program checklist, factsheets, success stories, links, and other resources readily available to Virginia facilities. The *environmentaLodging* materials were revised and dramatically improved by the addition of various resources including a program fact-sheet, Virginia success stories, the program checklist, and a fact sheet on "environmentally-responsible events". All of the materials are provided to perspective participants in the form of an *environmentaLodging* "pollution prevention toolkit".

## P2 Opportunity Assessments.

In addition to documenting successes, OPP was able to contract with a consultant to provide technical assistance to a limited number of facilities. Funded by a grant from EPA, OPP contracted with the non-profit organization Green Seal to perform pollution prevention opportunity assessments at four



*environmentaLodging* facilities. Green Seal has extensive experience in providing assistance to this industry and visited each of the facilities with the goal of documenting existing pollution prevention practices and possible opportunities for improvement. The assessments



## Sample environmentalLodging Certificate

provided insight into the progress of the facilities and the types of practices that could be shared with other facilities. The full report is available through the website, and each facility has been written up as an individual success story.

**Partnerships.** *environmentaLodging* was originally developed as a partnership between the Virginia Recycling Association and DEQ. In 2002, OPP made significant progress in developing partnerships with the Virginia Tourism Corporation (VTC) and the Virginia Ecotourism Association. Due to budget reductions, planned development of "ecotourism" brochures has been delayed; however, the VTC is currently revising its website to include *environmentaLodging* weblinks for all of its Virginia facilities.

**The Future.** OPP plans to expand its *environmentaLodging* partnerships in 2003 to include the Virginia Hospitality and Tourism Association. In addition, OPP is working with the Virginia Housing & the Environment Network and EPA Region III to coordinate a Mid-Atlantic "green lodging" conference for the spring of 2003, which will be held at the Airlie Foundation, one of the leaders in the *environmentaLodging* program.

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# Financial Incentives

## Small Business Environmental Compliance Assistance Fund

The Small Business Environmental Compliance Assistance Fund (SBECAF) provides Virginia small businesses with direct loans of up to \$100,000 to finance the purchase of equipment to implement voluntary pollution prevention; equipment to comply with the federal Clean Air Act; or equipment or structures to implement agricultural best management practices. The loans are offered at a 3% interest rate with favorable repayment terms based on the borrower's ability to repay and the useful life of the project being implemented. To be eligible for financing through the SBECAF, a business must meet the following criteria:

- ◆ Be a qualified small business (employing 100 or fewer people or be a small business as defined in the federal Small Business Act);
- ◆ Maintain business operations in Virginia; and,
- ◆ Demonstrate a reasonable assurance of repayment.

Through the end of June 2002, \$582,751 had been awarded to twelve companies for pollution prevention projects; \$78,000 for two air compliance projects; and \$140,813 for Agricultural Best Management Practices projects for a total of \$801,564. The environmental savings realized as a result of these projects were:

- ◆ Over 36,500 pounds of perchloroethylene air emissions eliminated
- ◆ 200 gallons photographic developer and fixer eliminated
- ◆ 23.4 acres of agricultural riparian buffers created
- ◆ 89.4 acres of land put into rotational grazing
- ◆ 290 tones poultry litter put under dry storage
- ◆ Recovery of 400,000 board feet of waste lumber
- ◆ Over \$15,700 in savings in eliminated hazardous waste

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**Example of dry cleaning equipment purchased by a Richmond cleaners with loan funds.**

## Virginia Agricultural BMP Loan Program

As a means of reducing the amount of non-point source pollution that enters state waters from farm operations, DEQ's Construction Assistance Program (CAP) implemented the Virginia Agricultural BMP (Ag BMP) Loan Program in January 2000. The program was established as a subset of the Virginia Wastewater Revolving Loan Fund and funded with \$10,000,000 in set asides from the parent program. Twenty-two best management practices (BMPs) which improve water quality by reducing the potential for nitrogen, phosphorus, fecal coliform and/or sediment laden run off from agricultural operations were identified as eligible for low interest loan assistance. The goal of the program is to encourage farmers to employ one or more of those loan eligible water quality improvement practices by providing loans for implementation expenses at an effective interest rate of not more than 3%. The loans can be used in conjunction with other funding programs or as stand alone financing.

Any Virginia agricultural producer can apply for assistance from the program by submitting a simple two-page pre-application form. The minimum long-term loan amount is \$5,000, but there is no maximum loan amount. Loans can be provided for structures and facilities such as animal waste control facilities, loafing lot management systems, animal waste structure pumping equipment, fencing to exclude livestock from streams, grazing land protection fencing and alternative watering systems.

In order to promote additional pollution prevention measures at agricultural operations, CAP implemented a pilot initiative in March of 2002. This pilot initiative provides AgBMP loan recipients the opportunity to receive reductions to their loans' interest rates by voluntarily agreeing to allow CAP staff to conduct comprehensive environmental assessments of their agricultural operations. The assessments evaluate the operations and develop recommendations for capital and operational improvements that would result in additional environmental improvements. Additional rate reductions could be provided if the producer agrees to implement the recommendations.

For state fiscal year 2002 (July 1, 2001 – June 30, 2001), 42 loans totaling \$2,728,289 were executed. As of July 15, 2002, loan closing was pending on an additional \$1,275,349 in loans to 9 other Virginia farmers.

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# Innovative Environmental Technology

The Office of Innovative Technology (OIT) promotes the development and use of new environmentally preferable technologies. Although OIT is within the Division of Pollution Prevention and Compliance Assistance, its activities cover all environmental media over the whole environmental management hierarchy from pollution prevention and energy efficiency through control and treatment to remediation and restoration.

During 2002, OIT provided various services to environmental technology developers and vendors, including advice and referrals on technology and business development, funding leads and interface with DEQ and other state agencies for regulatory questions. The Office has served as a point of focus for a number of interagency and interstate cooperative technology promotion efforts and, in cooperation with the Department of Mines, Minerals and Energy (DMME), has enhanced DEQ's participation in energy-related initiatives. OIT has also supported technical exchange and training to enhance the capabilities and cost-effectiveness of DEQ staff in other offices.

OIT accomplishments for 2002:

- Increased DEQ benefits from the Interstate Technology and Regulatory Cooperation Workgroup (ITRC). ITRC is an organization of over 40 states and the District of Columbia working in cooperation with federal, tribal, and private entities to provide technical exchange and training in environmental technologies, primarily for remediation. DEQ and the Virginia Department of Transportation (VDOT) cosponsored an ITRC Accelerated Bioremediation of Chlorinated Solvents course in Charlottesville in October. This course provided training to numerous DEQ, VDOT, local and private sector personnel. OIT facilitated DEQ staff use of ITRC documents, Internet and classroom training, participation in technical teams and informal interstate exchange.



- Provided advice, leads and other business and technical assistance to environmental technology developers and vendors. This included providing data, clarifying regulatory questions, facilitating meetings with regulatory staff, sharing perspectives on business approaches, and providing leads for financial resources. The Office collaborated with the Department of Business Assistance, Center for Innovative Technology, Small Business Development Centers and other organizations.
- Represented DEQ in the Technology Acceptance and Reciprocity Partnership (TARP), a partnership of states (CA, IL, MA, MD, NJ, NY, PA and VA) promoting interstate reciprocal acceptance of environmental technologies through the development of common technology protocols. The Office coordinated Virginia interagency participation in the TARP stormwater protocol among DEQ, the Department of Conservation and Recreation and the Chesapeake Bay Local Assistance Department. OIT has also collaborated with DEQ's waste division in participating in the development of the TARP protocol for beneficial use determination for nonhazardous byproduct materials. TARP has also served as a forum for informal technical exchange among the states.
- Managed a U.S. Department of Energy (DOE)-DMME supported project examining administrative and regulatory impediments to distributed energy resources (DER) and combined heat and power (CHP). OIT cooperates with the DEQ air division, State Corporation Commission, DMME and others in examining issues related to DER and CHP.
- With other state programs, OIT has collaborated with the Virginia Housing and Environment Network on several energy initiatives, including the Building America program, Rebuild America Program and Energy Smart Schools. The Office has also assisted local government energy efforts, such as Chesterfield County's landfill gas project.



## Energy Conservation & Efficiency

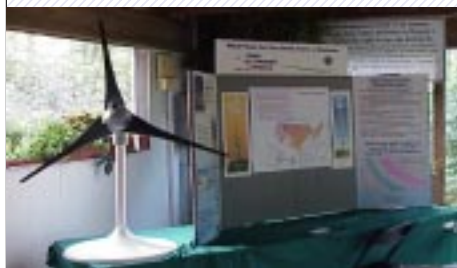
In 2002, the Office of Pollution Prevention (OPP) collaborated with over one hundred facilities or organizations on renewable energy and energy conservation, including federal, state and local governments, Virginia businesses, academia and non-governmental organizations. OPP's goal is to promote renewable energy and conservation in and around the Commonwealth to lessen the environmental impact of Virginia's energy needs and benefit the economy. OPP has focused on alternative fuel vehicles, wind power, the hydrogen infrastructure and microturbines. In addition, DEQ is administering a study to identify and address the barriers to distributed generation. OPP staff also promote the integration of energy conservation into DEQ's own operations and activities.

The theme of DEQ's exhibit at the **2002 Virginia State Fair** in September was "Preventing Air Pollution Through Technology". The exhibit, which was developed jointly by OPP, the



**Fuel Cell Vehicle Exhibit at 2002 Virginia State Fair**

Office of Innovative Technology and the Office of Environmental Education, included several examples of technologies that reduce the environmental impacts of energy use through increased efficiency. Examples of hybrid electric, fuel cell, compressed natural gas and electric vehicles were on display. Energy efficient equipment designed to burn fossil fuel more efficiently or to run on electricity was also showcased.



**Wind Power Exhibit at 2002 Virginia State Fair**

In addition, two forms of energy generation from renewable sources (solar and wind) were also on display.

The Virginia Department of Transportation (VDOT) also contributed to the exhibit. A display comparing

## Environmentally Preferable Purchasing

Environmentally preferable purchasing (EPP) is a procurement process that specifically identifies goods and services that have a reduced negative impact on the environment and on human health when compared to other goods and services that are used for the same purpose. The Office of Pollution Prevention (OPP) is working with the Department of General Services (DGS) to promote environmentally preferable purchasing among Virginia state agencies and local governments. OPP has partnered with DGS concerning the designation of recycled goods and increased awareness of them.

OPP is developing an EPP web site that will provide information on the benefits of "green" purchasing, list available products and services, and promote Virginia-based vendors who manufacture and/or distribute EPP products or services. EPP success stories from both the public and private sectors will be showcased so that the benefits of these products can be identified and quantified. The website will also include insights on developing appropriate specifications and provide links to other sources of EPP information. Plans for 2003 include providing EPP workshops to state agency and local government officials.

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the energy efficiency of traffic signals which use light emitting diodes (LEDs) versus less efficient conventional bulbs was popular with children. VDOT also had on display a traffic sign consisting of LEDs powered by solar energy.

Staff continue to provide outreach and technical support to Virginia businesses and facilities on energy conservation issues. For instance, in 2002, a chemical manufacturer in southeastern Virginia completed a landfill gas project that collects methane gas from a landfill several miles from the plant. The gas is piped to the plant and now supplies 95% of the facility's boiler fuel.

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## WEBSITES:

Office of Pollution Prevention: [www.deq.state.va.us/p2](http://www.deq.state.va.us/p2)

Virginia Environmental Excellence Program: [www.deq.state.va.us/veep](http://www.deq.state.va.us/veep)

environmentalLodging: [www.deq.state.va.us/p2/lodging](http://www.deq.state.va.us/p2/lodging)

Virginia Clean Marinas Program: [www.deq.state.va.us/vacleanmarina](http://www.deq.state.va.us/vacleanmarina)

DEQ Office of Environmental Education: [www.deq.state.va.us/education](http://www.deq.state.va.us/education)

DEQ Environmental Management System: [www.deq.state.va.us/ems](http://www.deq.state.va.us/ems)

Green Electronics: [www.deq.state.va.us/rupluggedin](http://www.deq.state.va.us/rupluggedin)

DEQ ISO 14001 Web Resource: [www.deq.state.va.us/ems/iso14001.html](http://www.deq.state.va.us/ems/iso14001.html)

DEQ Innovative Technology: [www.deq.state.va.us/innovtech](http://www.deq.state.va.us/innovtech)

Virginia Mentoring Network: [www.deq.state.va.us/vmn/vmnindex.htm](http://www.deq.state.va.us/vmn/vmnindex.htm)

DEQ Small Business Assistance Program: [www.deq.state.va.us/osba](http://www.deq.state.va.us/osba)