

**2006
Office
of
Environmental
Assistance
Summary Report**

**James H. Fyke, Commissioner
Paul Sloan, Deputy Commissioner**



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**Commissioner
James H. Fyke**

The Department of Environment and Conservation was created to protect and improve the quality of our state's land, air, water and recreation resources. We administer a variety of programs to safeguard human health and the environment while ensuring our natural resources meet healthful, regulatory standards. The Office of Environmental Assistance plays a particularly important role in achieving our mission by effectively promoting pollution prevention and sustainability to Tennessee businesses, organizations and citizens. I am proud of the difference these Environment and Conservation employees are making for Tennessee. As you read this Summary Report, I trust you will see this positive impact too. -

By establishing the Office of Environmental Assistance (OEA) in June 2005, the Department made a renewed commitment to outreach and support. In less than 24 months and through the talents, dedication and commitment of its staff, OEA has helped thousands throughout the state in their efforts toward environmental stewardship. As a result of efforts like those described in this Summary Report, Tennessee is building a community of individuals, businesses, schools and local governments that will help lead Tennessee to a more sustainable future. -



**Deputy
Commissioner
Paul Sloan**



**Office of
Environmental
Assistance
Director
Lori Munkeboe**

Welcome to the first-ever Summary Report for the Office of Environmental Assistance. This document highlights our many program accomplishments and the dedicated staff who make these achievements possible. Our goal is for this report to encourage others to join the many citizens, governments, businesses, and schools across the state that are taking action to make a positive difference for Tennessee's environment. -

Bureau of Environment Statement of Purpose

Governor Bredesen's Areas of Environmental Emphasis

Protecting and Improving our Land, Air and Water
Preserving Open Spaces and Enhancing Local Communities
Forging Public-Private Partnerships to Promote Natural Resource Stewardship

Bureau of Environment's Mission

To safeguard human health and the environment for all Tennesseans by protecting and improving the quality of our land, air and water for present and future generations

Bureau of Environment's Vision

To make Tennessee a national model of environmental stewardship

Bureau of Environment's Values

To serve the public in a timely, fair and consistent manner;
To solve problems through a scientific and evidence-based approach that respects diverse opinions and provides opportunities for input;
To support our people by creating a workplace where employees can achieve their greatest potential.



Tennessee Department of Environment and Conservation's Office of Environmental Assistance (OEA) program provides information and non-regulatory support to businesses, schools, local governments, industries, organizations and individuals in order to prevent and reduce environmental impacts. The OEA and its staff utilize a range of outreach techniques and partnerships to enhance knowledge and environmental awareness for individuals and organizations.

OEA is comprised of several major programs: the Small Business Environmental Assistance Program, Education and Outreach, Fleming Training Center, Grants and Awards, Environmental Justice and the State Employee Recycling Program.

Section 1

Fleming Training Center

Tennessee's Water Environmental Health Act established a system of operator education and certification in order to ensure competent, well-trained personnel to operate the state's water and wastewater treatment plants. Fleming Training Center (FTC) supports this system by providing training, certification and technical assistance in the areas of water and wastewater operator training and certification. These responsibilities can be broken down into four major areas:

- (1) Conducting training classes and continuing education seminars for water distributors and wastewater collection system operators;
- (2) Administering the Operator Certification Program for operators;
- (3) Conducting basic training and testing of backflow prevention devices; and
- (4) Providing technical assistance statewide to various operators and facilities.



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2006 Accomplishments

- (1) Conducted 125 different training classes for water and wastewater operators. These classes provided almost 5,900 student-days of training to more than 2,500 students. The subject matter ranged from basic concepts of treatment to continuing education seminars involving cutting-edge technologies.
- (2) Through the Water and Wastewater Operation Certification Board, the center served more than 3,500 certified water and wastewater operators, holding more than 5,300 different licenses. Approximately 800 new applicants sat for the two semi-annual certification exams. Application and renewal fees brought in about \$195,000 through FTC.
- (3) By using funding provided by an EPA expense reimbursement grant (ERG), the center implemented a new statewide program to fit the individual needs of the small water system operator. Staff traveled across the state helping operators with problems faced on a daily basis.

Section 2

Environmental Justice

The Environmental Justice Program at TDEC was created in November 2006. “Environmental Justice” is based on the principle that all people should be protected from environmental pollution and have the right to a clean and healthy environment.

The Environmental Justice Program (EJP) emphasizes quality of life and environmental protection improvements in all communities. The EJP seeks to ensure the full and fair participation by all potentially affected communities in the environmental decision-making process.



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Environmental Justice is the:

- Protection of the health of the people of Tennessee and its environment,
- Equity in the administration of the State's environmental programs, and
- Provision of adequate opportunities for meaningful involvement of all people with respect to the development, implementation and enforcement of environmental laws, regulations and policies.

Section 3

Grants and Awards

2006 marked the 20th anniversary of the Governor's Environmental Stewardship Awards program and a milestone for most nominations ever received across its 14 different categories. The 2006 Governor's Awards also reflected a most accomplished set of winners due to the many strong nominations submitted and the dedicated judges that volunteered their time to review, evaluate and rate the more than 100 nominations.



The Governor's Awards honor individuals, groups and organizations helping to create the kind of cleaner, healthier Tennessee we all want to see. These recipients demonstrate a model of environmental stewardship that makes us excited about our desired future, and this year's winners reflect the positive vision we have for Tennessee.

2006 Governor's Environmental Stewardship Award Winners

Agriculture/Forestry

University of Tennessee Forest Resources Center's
Honeyhead Creek Restoration; Morgan County

Aquatic Resource Preservation

Red River Watershed Association's Visual Stream Assessments of Impaired
Streams in Montgomery, Robertson and Sumner Counties

Building Green

Cumberland River Compact's Building Outside the Box (BOB) project;
Nashville

Energy Leadership

Panther Creek State Park's Energy Conservation program; Morristown

Environmental Education and Outreach

Great Smoky Mountains Institute at Tremont; Townsend

Green Schools -- K-12

Huntingdon Primary School "Cash for Trash" program; Huntingdon

Green Schools -- Higher Education

Rhodes College Bike Program; Memphis

Greenways and Trails

City of Cookeville's Tennessee Central Heritage Trail through Putnam County

Hazardous Waste Reduction—Large Business

Fort Campbell's Pollution Prevention Operation Center; Fort Campbell, KY/TN

Hazardous Waste Reduction—Small Business

Hamilton County School Chemical Cleanout Campaign; Chattanooga

Lifetime Achievement

Virginia "Happy" Birdsong

Natural Heritage Conservation

Native Butterfly Garden at Burgess Falls State Park, Putnam/White County

Parks and Recreation

Native Butterfly Garden at Burgess Falls State Park, Putnam/White County

Pollution Prevention

Vanderbilt University's Workplace Commuters Project; Nashville

Grants and Awards

2006 Grant Accomplishments

Green Vacation Green Home Model Demonstration Project

Tennessee Department of Environment and Conservation has committed to build ten new cabins at two state parks that incorporate Tennessee Valley Authority (TVA) Energy Right technologies and LEED (Leadership in Energy and Environmental Design) certified building techniques. The green cabins will demonstrate effective stormwater management techniques and easily transferable energy conservation practices through posters, brochures and other educational tools. The ten two bedroom cabins will be similar to single-family homes. The park visitor can come enjoy the park, learn from the homes and take green ideas home with them.



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OEA has secured a \$200,000 commitment from TVA and \$35,000 grant from EPA to implement this project.

Environmental Council of States

The Department received a \$37,000 grant from Environmental Council of States that issues the grant will support work that addresses air, land, water and potentially, cross-media areas of opportunity or concern within the state. The primary objectives of the pilot will be to:

- 1) Improve the Department's internal strategic planning process by aligning it with the release of TDEC's planned State of the Environment report;
- 2) Facilitate discussions of TDEC's strategic priorities with EPA Region 4 during the regional planning process; and
- 3) Provide a framework and foundation for the development of a potential Performance Partnership Agreement (PPA) between TDEC and EPA Region 4.

Grants and Awards

School Chemical Cleanout Campaign

The School Chemical Cleanout Campaign (SC3) is a two-year program, funded largely by the United States Environmental Protection Agency. Two department programs, TP3 Green Schools Program and the Household Hazardous Waste Mobile Collection Service have collaborated to provide SC3 with a safe and financially feasible way of removing school chemical waste. The program includes on-site chemical management assistance, chemical segregation, and disposal cost on a sliding scale to selected schools based on their county economic index.

The Department supports environmentally safe and healthy schools through:

- Elimination of hazardous waste and legacy chemicals from school labs.
- Promotion of Green Chemistry and Microscale Chemistry lab activities.
- Participation in Department of Education's summer science safety workshops for teachers.
- Collaboration with Department of Education in development of the Total Science Safety CD for teachers.
- The Mercury Thermometer Swap program, which offers teachers free environmentally friendly thermometers in exchange for mercury thermometers.
- Encouraging participation of all public and private schools in the TP3 Green Schools Program.

During the most recent two-year period, there were 106 schools that were assisted with chemical disposal or other management options that generated 29,415 pounds of hazardous lab waste, including 602 pounds of Mercury at a total cost of \$44,873.



Chemical Removal in Progress



Chemical Removal in Progress



Typical Chemical Storage Area

Section 4

State Employee Recycling Program

The State Employee Recycling Program (SERP) is administered by the Office of Environmental Assistance and includes more than 32,352 state employees in 101 facilities. The State Employee Recycling Program include Chattanooga, Jackson, Johnson City, Knoxville, Memphis, Nashville, Cookeville, Columbia, Jamestown and Oak Ridge.



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From January 1, 1990 to December 31, 2006 state employees recycled 14,446.6 tons of mixed office paper. This produced revenue of \$116,040 for the state, while avoiding \$431,604 in landfill costs. SERP began with prison labor sorting mixed office paper from state office buildings and now includes 32,352

state employees in 101 facilities across the state utilizing paper, aluminum, and plastic bottle recycling. When possible, the program includes other recycling and waste reduction activities geared to staff including battery and inkjet cartridge recycling plus a mercury thermometer exchange program.

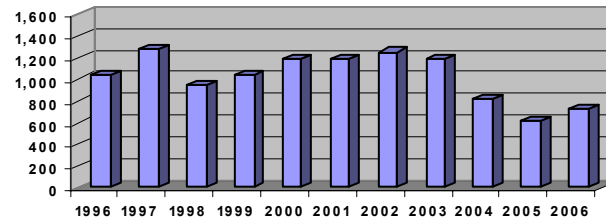
Americans discard four million tons of office paper each year, enough to build a 12-foot high wall of paper from New York to California. In the case of office paper, the equivalent of three barrels of oil is saved for each ton of paper recycled. The process of manufacturing paper from previously used paper instead of from trees produces almost 60 percent less air and water pollution. TDEC's Office of Environmental Assistance has received a national WasteWise Partner of the Year Award from EPA the past four years and continues to expand its waste prevention and recycling efforts.

TDEC's 667 Tons of Recycling and Waste Prevention Totals are Equivalent to:

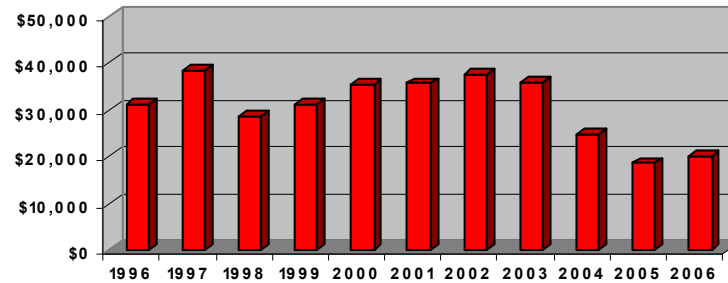
- Removing 527 passenger cars from the road for one year (based on CO2E annually emitted per car)
- Planting 56,693 seedlings grown for 10 years (based on CO2 sequestration per tree)
- The Annual emissions from the power consumption of 313 households (based on annual emissions per household)
- 278,795 gallons of gasoline (based on CO2 emissions per gallon)
- 5,689 barrels of crude oil (based on CO2 emissions per barrel)
- 820 tons of waste recycled instead of land filled (based on CO2E emissions per ton of waste land filled)

Statewide Employee Recycling Program

Recycled Tons per Year



Tonnage of Recycled Materials



Avoided Landfill Costs

Section 5

Education and Outreach Program

The Education and Outreach Program provides technical information, technical assistance, networking and recognition to schools, businesses, industries, government agencies, organizations and households. By hosting and supporting environmental conferences and forums, the Education and Outreach Program encourages community participation and promotes pollution prevention and environmental awareness throughout Tennessee.



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Tennessee Pollution Prevention Roundtable

One of Tennessee's greatest pollution prevention success stories resulted from the Tennessee Pollution Prevention Roundtable, an independent organization of dedicated environmental groups, educational institutions, government agencies and industries. Originally called the Tennessee 2000 Initiative, their goal was to reduce by 50% Toxic Release Inventory pollution emissions from Tennessee's top thirteen industries by the year 2000. Despite such an ambitious goal, the group measured a greater than 50% reduction in TRI emissions by 1998.

The mission of the TP2R is to facilitate and implement activities designed to achieve significant and meaningful improvements in the quality of the environment of Tennessee and the quality of life for Tennesseans now and for future generations.

Tennessee Pollution Prevention Partnership

The Department is helping all citizens do their part for our shared environment through the Tennessee Pollution Prevention Partnership, or TP3. This network of Tennessee households, schools, government agencies, organizations, businesses and industries demonstrates that pollution prevention protects the environment, saves money and improves communities.

TP3 is an innovative public/private recognition program that encourages beyond-compliance environmental excellence, involves communities in environmental protection and focuses on measurable results. TP3 members accomplish projects in five media areas: clean air quality, energy conservation, hazardous chemicals reduction, land and water conservation and solid waste reduction. The partnership is structured into four commitment levels: Prospect, Pledge, Partner and Performer. At the close of 2006, the membership of TP3 consisted of 578 members.

Education and Outreach

Green Schools Program

Higher education and K-12 public and private schools comprise the largest membership category in TP3. This group has its own identity: the Green Schools Program. The goals of this program are to increase environmental education and literacy in Tennessee schools, produce knowledgeable and responsible environmental citizens, and cultivate nature appreciation and stewards of the natural world. These goals are accomplished by involving students in campus projects to improve environmental management and reduce the ecological footprint of the school. Community outreach activities are encouraged at the top levels.

Tennessee Pollution Prevention Performers

Government Agencies:

- James H. Quillen VA Medical Center

Industries:

- Bridgestone/Firestone-Warren County Plant
- Delta Faucet Company of Tennessee
- DENSO Manufacturing Tennessee, Inc.
- DENSO Manufacturing Athens TN, Inc.
- JTEKT Automotive Tennessee-Vonore Co.
- Marvin Windows and Doors of Tennessee
- Saturn Corporation / GM - Spring Hill Manufacturing Facility

Schools:

- Centennial High School

For a current listing of all TP3 members please visit:

www.tdec.net/ea/tp3

2006 Education and Outreach Accomplishments

- Two more TP3 members met the criteria to achieve Performer status, the highest level in the partnership. The TP3 Program also gained eight new Partner level members, three K-12 schools, four industries and the first household category member to achieve Partner.
- OEA-EO and a TP2R Planning Team led the program planning and implementation for the third P2 Conference, "Cultivating P2" in September 2006. Deputy Commissioner Paul Sloan hosted a dinner the evening before the conference to honor the nine TP3 Performers and the five Tennessee members of the EPA Performance Track program.

Section 6

Small Business Environmental Assistance Program

The Federal 1990 Clean Air Act Amendments required states to establish a Small Business Environmental Assistance Program (SBEAP) to provide technical, administrative and regulatory support for small businesses. The SBEAP staff serve as a liaison between the regulatory agencies and small business. The SBEAP does not have regulatory enforcement authority. Confidentiality is maintained when representing the interest of a small business. The types of assistance provided through the SBEAP include:



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- Informing businesses of requirements in the Act that apply to them as well as any applicable dates;
- Maintaining a list of affected industry for information distribution;
- Disseminating up-to-date information about the Act to the small business community, including easy to understand public information materials;
- Helping small businesses deal with specific technical, administrative, and compliance problems;
- Making necessary referrals; and
- Providing training opportunities.

2006 SBEAP Accomplishments

Workshops and Presentations

- Overview of Stage 2 gasoline dispensing permitting program for Air Pollution Control permit writers.
- Environmental compliance and permit application seminar for Ready Mixed Concrete facilities, co-sponsored by the Tennessee Ready Mixed Concrete Association.
- Environmental trends and SBEAP overview at the 20th Annual Tennessee Concrete Association meeting.
- Four storm water outreach workshops held across the state for small communities' local officials. Funded through a grant from the Environmental Council of States.
- "Compliance Assistance At Its Best" presentation at the National Environmental Summit. Featuring the partnership compliance effort that involved the Ready Mixed Concrete industry.
- Energy presentation at the Annual Solid Waste Conference and other locations.

2006 SBEAP Accomplishments

PROJECTS

- Staff implemented a grant from the Environmental Council of States to conduct outreach to small communities. The project targeted local officials of small communities and included a survey and four train the trainer workshops. The project focused on small community storm water issues. Participants received a manual, sample ordinances, and a CD with all training materials.
- Staff developed and submitted the Department's required 2006 Title VI Implementation Plan Revision. The Plan includes a summary and plans of the Department's civil rights activities.
- Staff researched, developed, proposed and successfully negotiated Department disadvantaged business utilization goals with EPA. All federal funding was dependent on the successful negotiations.
- Regulatory Notifications
 - Stage I Vapor Recovery regulatory and compliance information provided to 1200+ gasoline dispensing facilities
 - Toxic Release Inventory and Emergency Planning and Community Right to Know Act reporting reminder and assistance information to 300+ ready mixed concrete facilities
- Articles developed for Association newsletters on new regulatory requirements and compliance issues
 - Four articles developed and submitted to the Tennessee Fabricare Institute (drycleaner association) on proposed drycleaner regulations, final new promulgated drycleaner regulations, and suggested steps for drycleaners to take to insure compliance.
 - Article developed and published in the Tennessee Oil Marketers Association newsletter on new state regulations and the compliance requirements for gasoline dispensing facilities.
 - ECOS project article was developed for TDEC's Times and Trails newsletter.

ON SITE VISITS : 6

PERMIT APPLICATION ASSISTANCE : 183

GENERAL COMPLIANCE ASSISTANCE : 409

Section 7

Electronic Waste Program

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E-waste is a general category for electronic products facing displacement or replacement that are hazardous due to the toxic metals present with their internal materials, coatings and glass. E-waste contains metals and other materials that can be hazardous to human health and the

environment if they are not properly managed. According to an EPA study, 40% of the lead in U.S. landfills is from discarded electrical and electronic products. E-waste may include personal computers, monitors, televisions, keyboards, printers, telephones, typewriters, calculators, copiers, fax machines and audio equipment.

2006 Electronic Waste Accomplishments

- In partnership with OEA, TDEC's Division of Solid Waste Management helped launch a new E-waste Recycling web page to assist households, counties, municipalities and businesses with electronics recycling.
- The Mobile HHW Program collected 324,702 pounds of e-waste in 2006, which represents a 5% increase from 2005.
- Several counties including Anderson, Carroll, Clay, Henderson, Johnson, Knox, Marshall, Maury, Roane, Sullivan, Washington, Wayne, and Williamson either manage e-waste regularly throughout the year or have hosted special e-waste collection events, in addition to HHW collections. This has been beneficial to the State, as it reduced the amount of e-waste collected and managed by the HHW contractor.



Section 8

Mercury Pollution Program

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Improper use and mishandling of mercury leads to both environmental and health problems. Mercury has many toxic effects in the body. Tiny droplets of mercury can evaporate into the air over time. When mercury is inhaled, it enters the blood. Breathing mercury vapors over a long period of time can damage the brain, spinal cord, kidneys and liver. Swallowing or touching mercury metal is not nearly as toxic.

Mercury Thermometer Swap Program

Mercury thermometers were used for many years in households because no alternatives were available. Alternatives now include digital or alcohol-filled thermometers. OEA purchased digital thermometers and non-mercury glass thermometers and has conducted mercury thermometer swaps across the state for the past two years to help eliminate the potential for mercury spills in households.

School Chemical Cleanout Campaign

Mercury is also found in many school science classrooms, laboratories, cafeterias and nurse's offices. Items found may include thermometers, air pressure gauges, mercury compounds, blood pressure measuring devices, barometers, silent wall switches, lamps in the gymnasium and parking lot, old microwave ovens, old latex paint produced before 1995, pesticides produced before 1994, elemental mercury used by students in labs and many laboratory apparatuses.

Tennessee focuses on schools to achieve the following:

- Educate teachers about the hazards of mercury;
- Promote the proper management and recycling of mercury;
- Promote use of alternative products that do not contain mercury;
- Prevent mercury spills and recommend spill cleanup kits;
- Encourage mercury education to families to evaluate mercury usage at home.

The SC3 purchased digital and liquid-filled thermometers to swap for school lab thermometers and nursing station thermometers containing mercury.

Mercury Pollution Program

End of Life Vehicle Solutions (ELVS)

The National Vehicle Mercury Switch Recovery Program was formed through an agreement reached in August 2006 by representatives of dismantlers, automotive steel and scrap industries, environmental groups, state environmental agencies and the U.S. Environmental Protection Agency. The automobile manufacturers created a non-profit corporation called End of Life Vehicle Solutions (ELVS) to provide educational materials as well as collect and recycle the automotive switches at no cost to the automobile dismantler.

In April 2007, Tennessee joined this national program to remove and recycle mercury switches from vehicles. Mercury auto switches were used to control convenience lighting and antilock braking systems (ABS) and can be found in many vehicles manufactured prior to model year 2003.

The auto industry estimates that implementing this program in Tennessee could result in the collection of 86,000 switches in 2007, equating to the removal of 196 lbs of elemental mercury. The department has invited 330 vehicle dismantlers to join this important recycling program.

2006 Mercury Pollution Accomplishments

- The Mobile HHW Program collected nearly 300 pounds of mercury for recovery.
- The SC3 program has successfully removed more than 602 pounds of potentially dangerous mercury from public and private schools since 2003.
- A total of 1,034 household and school mercury thermometers, containing approximately 500 grams of mercury, have been swapped through various OEA programs.



Environmental Coordinators

The Office of Environmental Assistance supports four Environmental Coordinators who are located in the Jackson, Nashville, Knoxville, and Johnson City Environmental Field Offices. These coordinators provide a regional point of contact and offer on the ground expertise in all of OEA's programs. Environmental Coordinators conduct education and outreach activities, provide general and confidential technical information, assist with multi-permit coordination and make referrals.



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