2009

Governor's Environmental Stewardship Award Winners

EXCELLENCE IN AGRICULTURE AND FORESTRY

Take Root Chattanooga
Hamilton County

Take Root Chattanooga is a grassroots, community-driven project with a goal to double the tree canopy cover in downtown Chattanooga by planting approximately 1,500 street trees since 2007. This project was developed by eight citizens in a local leadership development class, and is made possible by various partners including the city of Chattanooga, local businesses, foundations and volunteers. Positive impacts of increased tree canopy cover include air pollution reduction, carbon sequestration, strorm water runoff reduction, energy savings and aesthetic improvement. Total benefits of Chattanooga's street tree population exceed $8.5 million annually.

EXCELLENCE IN AQUATIC RESOURCE PRESERVATION

Duck River Opportunities Project
Maury County

Beginning in 1999, the Duck River Opportunities Project was established to identify and abate non-point source water pollution in the Duck River Watershed. The Duck River Watershed is among the most biologically diverse watersheds in the United States. The watershed covers 2,821 square miles equivalent to eight percent of Tennessee's total land area. The Duck River winds 269 miles east to west through the heart of Tennessee. It also is the primary source of water for 200,000 Middle Tennesseans.

DROP identifies and mitigates water quality degradation through the implementation of best management practices. In 2008, more than 3,500 feet of stream banks were treated with cedar revetments and/or reforestation. Applied BMPs included short-term control measures, such as the attachment of cedar revetments on severely eroded stream banks. Long-term activities designed to promote the natural functioning of the land included riparian reforestation and planned installation of rain gardens and other structures that mimic natural land process in an effort to improve water quality and quantity and to re-establish habitat and restore natural infrastructure.

EXCELLENCE IN BUILDING GREEN

Vanderbilt University / The Commons Phase II
Davidson County

In 2008, the U.S. Green Building Council's Leadership in Energy and Environmental Design program awarded Gold Certification to the three newly constructed residence halls located within the Commons at Vanderbilt University. Vanderbilt now has a total of seven LEED-certified buildings, forming the largest collection of certified buildings in Tennessee and one of the largest collections of certified buildings in the southeastern United States. These buildings were designed and constructed with water conservation, energy efficiency, indoor air quality and waste minimization in mind.

A team of Tennessee-based building, design and construction companies worked closely to develop a unique green building infrastructure and knowledge base for large institutional projects, which will serve as an information resource base for Tennessee in the decades to come.

EXCELLENCE IN ENERGY LEADERSHIP

Gear Up for Clean Energy – Crockett Goes Green
Washington County

The Washington County Department of Education, in partnership with East Tennessee State University, established a ground-breaking educational experience for students and faculty at David Crockett High School. This project assists students in the acquisition of cutting-edge technology, knowledge, skills and increased awareness of the growing career and educational opportunities in the green economy. Both DCHS and ETSU students, graduate students and faculty joined together in planning, installing, operating and maintaining alternative energy systems including both active solar and wind generation.

These alternative energy systems are used to power an organic greenhouse, weather station, satellite downlink and a low-power FM radio station. The program allows students to gain experience in alternative energy, while generating power for entrepreneurial farming opportunities in the green house and on the school's organic farm.

EXCELLENCE IN GREEN SCHOOLS HIGHER EDUCATION

Lipscomb University
Davidson County

The sole mission of Lipscomb University's Institute for Sustainable Practice is to advance the practice of sustainability through education, research, training and service to the community and the world. Nineteen graduate students have enrolled in Tennessee's first academic program in sustainability and undergraduate students are enrolling in the new sustainability major and minor studies offered. Lipscomb is one of only 66 schools offering environmental and sustainability degrees in the country and the only one in the state of Tennessee.

Lipscomb University also is turning into a green campus. Its last three buildings constructed on campus possess a geo-thermal temperature control system, which in turn is expected to cost between 52 and 62 percent less in energy and maintenance expenses than it did prior to renovation. Other sustainable practices in the new construction include native plants being incorporated into the landscaping; using building materials with recycled content and purchasing such materials from vendors less than 500 miles away; non-toxic, green housekeeping products are being used in building maintenance; the building uses energy efficient lighting, motion sensors that turn off lights when the rooms are not in use and large windows that allow more natural light; building products that emit lower levels of chemicals into the air were used throughout the construction process; advanced air filters were installed to reduce mold and make indoor air quality healthier; compressed plumbing joints with non-soldered seals make the water running through the pipes even healthier than codes require; new classroom and new residential spaces use low-flow faucets, toilets and sinks; and bike racks were installed to encourage less driving off-campus by students.

EXCELLENCE IN GREEN SCHOOLS K-12

David Lipscomb Elementary School
Davidson County

David Lipscomb Elementary School began several initiatives to become a green elementary school as part of its environmental education approach. Students and faculty have created a Monarch butterfly garden, raising, tagging and releasing more than 700 Monarchs from the campus – three of which were recovered in Mexico. The school has been designated Monarch Waystation #1056 by Monarch Watch. Additionally, the school has created a new outdoor classroom for students, including an amphitheater, math patio, a human sundial, weather station, frog pond, birding equipment, rainwater collection system and an area for vegetables, butterflies, herbs, bulbs and Tennessee native plants. In addition to providing a public, 24-hour recycling receptacle in the parking lot, the school also recycles plastics, aluminum, paper, cardboard and does its own composting.

Due to its many accomplishments, David Lipscomb Elementary School has achieved the highest level of certification possible for the Tennessee Pollution Prevention Program and succeeded in 2008 in becoming the only K-4 school in Tennessee to reach "performer" status.

EXCELLENCE IN ENVIRONMENTAL EDUCATION AND OUTREACH

Bridgestone Environmental Education Classroom and Habitat
Warren County

The Bridgestone Environmental Education Classroom and Habitat is an environmental classroom and teaching trail, which promotes environmental education in a hands-on science atmosphere. Bridgestone Americas Tire Operations' Warren County tire plant, along with other local partners, combined resources so that all K-8 students in Warren County could visit the BEECH facility for interdisciplinary field investigations. BEECH instruction takes place on outdoor nature trails and in a state-of-the-art classroom complete with live and mounted animals. In a hands-on learning environment, students gain an appreciation of their environment, learn about environmental stewardship, get some exercise and increase science and math understanding that helps improve standardized test scores. The BEECH curriculum provides valuable instruction about Tennessee's wildlife, forests, soils, water, natural heritage, parks and recreation and the air. Students also learn important lessons in conservation, recycling, composting, renewable energy and their responsibility as individuals to protect the earth.

EXCELLENCE IN HAZARDOUS WASTE REDUCTION

Tennessee Galvanizing
Marion County

In 2008, Tennessee Galvanizing invested $750,000 to specifically reduce its hazardous waste generation by 100 percent. Working with industry partners, the company developed an onsite, closed-loop sulfuric acid recycling unit and a new machine to more completely utilize raw materials. The innovative mechanism behind this success is called "The Skim Machine." It was designed and built by Tennessee Galvanizing and is the first of its kind. A patent was not secured on this machine, because the company wants to help other galvanizing companies achieve the same success in hazardous waste reduction. In fact, the company also hosted 15 other galvanizers from around the country at the Jasper plant in 2008 to demonstrate the system. This completely self-contained system now produces more than 1.5 million pounds of ferrous sulfate annually, which in turn is sold for use in livestock feed or fertilizer.

Annual environmental benefits of this new resource recovery and recycling process include elimination of 2,300 tons of hazardous waste in the form of spent sulfuric acid; elimination of 82.5 tons of hazardous waste in the form of spent sodium hydroxide solution; reduced "virgin" sulfuric acid use by 228 tons annually; water consumption reduced by 315,000 gallons annually; natural gas consumption reduced by 20 percent via boiler replacement with tank heaters; and the elimination of more than 100 trucks from the road that were no longer needed to haul spent acid offsite as a hazardous waste.

EXCELLENCE IN GREENWAYS AND TRAILS

Wolf River Environmental Restoration Project
Shelby County

The Wolf River Environmental Restoration Project is a multi-year, dual-phase project running between Houston Levee Road and Collierville-Arlington Road. Administered by the U.S. Army Corps of Engineers and co-sponsored by Shelby County and the Chickasaw Basin Authority, this project began in 1994 with the Wolf River Reconnaissance Study. The goals of this project are to provide flood protection and mitigation, aquifer protection and infrastructure protection. To date, administrators of the project have completed the environmental infrastructure features and associated trails, which opened to the public in October 2008. Construction of four main channel weirs and six tributary weirs to control head cutting was also completed, along with rip-rap protection at the Collierville-Arlington Road bridge, the addition of one cut-off prevention berm, approximately eight miles of combined trails and access roads, a steel truss pedestrian bridge and two parking areas. More than 1,000 acres of land have been purchased as part of the land acquisition process to support the project.

EXCELLENCE IN NATURAL HERITAGE CONSERVATION

Lost Cove
Franklin County

In February 2008, the University of the South and the Land Trust for Tennessee completed the purchase and permanent protection of nearly 3,000 acres on the South Cumberland Plateau in Franklin County from American Timberland Corporation. The land, which contains portions of Lost Cove and Champion Cove – adjacent to the 10,000-acre Domain of the University and extending to the boundary of privately held land at the bottom of Lost Cove – will be owned and managed by the city of Sewanee for use as an outdoor academic laboratory and for recreation. The outdoor laboratory will teach more about forestry, watershed protection, biology and geology. The project incorporates innovative conservation practices to protect Tennessee's rich wildlife diversity, abundant soil, forest resources and exceptional recreational opportunities.

EXCELLENCE IN PARKS AND RECREATION

Bear Trace at Harrison Bay Golf Course
Hamilton County

The Bear Trace Golf Course at Harrison Bay State Park has made many improvements in water conservation, water quality management, wildlife and habitat management, chemical use reduction and safety, and outreach and education. The state park course has installed 45 nesting houses, created a large plant bed comprised of 218 plants native to Tennessee, and renovated the golf course's chemical storage facility. With all of these improvements in practice, Bear Trace at Harrison Bay ranks one out of 765 golf courses certified by Audubon International and one of only ten in the state of Tennessee. In addition, 40 acres of the course have been naturalized to minimize maintenance and the turf grass has been changed from "bent grass" to Champion Ultradwarf Bermuda grass – reducing the course's chemical use and budget from $39,000 to $8,000 annually.

EXCELLENCE IN POLLUTION PREVENTION

JTEKT Corporation
Monroe County

The JTEKT Corporation sought an alternative process to reduce waste from its pre-treatment wash operation, which serves as the final powder coating for manufactured parts. After careful review, JTEKT Automotive began utilizing an alternative to iron phosphate called the Houghto-Prep ZP. The success of the Houghto-Prep ZP project shows a significant increase in waste reduction and energy conservation and as a result, focuses on JTEKT's desire to achieve regional benchmarking in environmental stewardship. The conversion to the Houghto-Prep ZP has saved JTEKT operating costs, while providing a positive impact on the environment through the use of less water and energy and fewer chemicals. Total water consumption has decreased from 1,440,157 to 98,436 average gallons annually, or a 93 percent reduction – specific to the pre-treatment wash process. Annual BTU consumption has dropped by more than 70 percent. Waste treatment chemicals have been reduced by 81 percent.

In addition, landfills have seen a reduction since the new chemical contains no heavy metals, producing a minimal amount of sludge. Carbon dioxide emissions were reduced by 42 percent from 20,376 to 12,000 tons. The total annual costs decreased from $248,000 to $78,000, or 70 percent. All of this was achieved while improving the quality of the process and increasing the part load by 245 percent.

EXCELLENCE IN SOLID WASTE REDUCTION

Procter & Gamble
Madison County

In 2008, Procter & Gamble Manufacturing Facility in Jackson re-evaluated its processes for waste and recyclable materials management with the goal of further reducing its environmental footprint by reducing carbon dioxide emissions, lowering energy consumption, decreasing water usage and reducing waste from operations. The plant found that waste reduction, recycling opportunities and redesign options for its packaging materials were among many processes that could change. Steps were taken – both big and small – to eliminate office and cafeteria wastes. Positive impacts were immediately realized at the plant and employees reduced the amount of total trash produced by nearly three million pounds on an annual basis. While total trash was being reduced, almost 25 million pounds of byproducts and other recyclable materials were recovered and recycled in 2008.

Overall waste was reduced by 78 percent in 2008 compared to the previous year and landfill disposal was reduced by 72 percent, saving an average $20,000 per month in landfill disposal costs. Another major advance at the plant included redesigning product packaging. The design changes included on-line case printing that eliminated the need for multiple corrugated packaging and container designs. As a result of online case printing, Procter & Gamble used 250,000 pounds less corrugated material, eliminated 65,000 cubic yards of waste, saved 120 million gallons of fresh water, used 70 million fewer kilowatts of energy and used 10 fewer trucks for transit.

2009 ROBERT SPARKS WALKER LIFETIME ACHIEVEMENT

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