

2016 Governor's Environmental Stewardship Award Winners

Category: Building Green

Belmont University: Janet Ayers Academic Center
Davidson County, Tennessee

Belmont University's new Janet Ayers Academic Center achieved LEED (Leadership in Energy and Environmental Design) Platinum status upon completion in May 2015. Belmont is the first university in Tennessee to receive a Platinum certification, and the building's green design is projected to save more than \$200,000 in annual utility costs.

The design facilitated a 38 percent decrease in energy usage over a comparable baselined building. These savings are a result of highly efficient heating and cooling systems, energy-efficient LED lighting, green roofs, and sunlight-reflecting roofs. The building also conserves over 200,000 gallons of water each year with the utilization of high-efficiency plumbing fixtures and an irrigation system that uses reclaimed water.

Being a redeveloped brownfield site, it was critical during the planning and construction phases to improve the grounds. A five story, 159,000 square-foot, underground parking garage preserves above-ground green space. Overall, an impressive 73 percent of the area within the project boundary is vegetated open space. Additionally, around 20 percent of materials used in construction contain recycled content with 44 percent coming from within a 500-mile radius of the project site. Almost 80 percent of the waste generated during the project was recycled.

Category: Clean Air

Tennessee Clean Fuels Coalition Improves Air Quality

In 2015, the East and Middle-West Clean Fuels Coalitions joined to form the statewide Tennessee Clean Fuels Coalition. Working with approximately 100 partners across Tennessee collectively, the Coalition members decreased petroleum use by 13,331,556 gasoline gallon equivalents and reduced greenhouse gas emissions by 31,748 short tons.

The Tennessee Clean Fuels Coalition is part of the Department of Energy's Clean Cities program and it addresses the serious environmental issue of improving Tennessee's air quality by: replacing older polluting vehicles with newer and more efficient models, encouraging use of alternative-fueled or electric vehicles, reducing engine idling times, and helping fleet managers achieve an overall high level of sustainability. The Coalition also seeks to educate Tennesseans about the importance of their transportation choices by speaking at school events, conferences, and also through education provided at their statewide compressed natural gas rally.

There are 86 of these programs in nearly every state in the U.S. However, the Tennessee Clean Fuels Coalition is the only organization in Tennessee that focuses specifically on tackling the problem of petroleum use and reducing the associated pollution by deploying alternative fuels and advanced technology vehicles.

Category: Environmental Education and Outreach

green|spaces: Empower Chattanooga Helps Underserved Communities
Hamilton County, Tennessee

Using data provided by EPB, Empower Chattanooga, a program developed in part by green|spaces, identified several East Chattanooga communities in which the homes on average used 43 percent more energy per square foot in the winter months than the typical homes in the city. Residents of these neighborhoods have difficulty paying for these high utility bills. Information obtained from the Chattanooga Area Food Bank indicates that 69 percent of their clients are choosing between paying for food or paying for utilities. Empower Chattanooga works to resolve this issue through community fairs that serve to educate residents about how to prevent high utility bills with home energy saving checklists, hands-on workshops that teach low-cost/no-cost energy saving measures such as caulking around doors, and English and Spanish language digital media so residents can learn about energy savings on their own time.

Program success is tracked through comparison of Empower program participants' historical energy consumption to energy consumption after programming. Additionally, after attending workshops participants' behavioral changes are tracked, including energy reduction actions taken after workshops and whether anything learned at the workshop has been shared with friends or family. Data and participant feedback indicates that the program has been highly successful in saving participants money on their utility bill.

Category: Environmental Education and Outreach

Emmett Elementary School: The TreeHuggers Meet the Joy Garden
Sullivan County, Tennessee

Emmett Elementary School's fourth and fifth grade students are learning environmental stewardship through an active recycling program and school garden. The special education classroom's Joy Garden began in 2013 as a way to teach students about responsibility as well as offer a hands-on opportunity to learn about the plant cycle.

The garden has permanent raised beds that are wheelchair-accessible. A rain barrel is used to water garden and classroom plants, while soil from their own garden is enriched by using compost from their compost bin. In the fall of 2014, Emmett Elementary School students started a recycling club and shortly thereafter combined forces with the Joy Garden to form the TreeHuggers club. The TreeHuggers earned money by collecting used ink cartridges and cans, with \$250 coming from the recycled aluminum. With the money earned, the club purchased indoor recycling bins for ink cartridges, plastic bottles, and aluminum. The TreeHuggers also take on the responsibility to coordinate school recycling programs for paper, plastic, and ink cartridges.

The club made an educational video that teaches the importance of recycling, and they have also created a similar presentation directed specifically toward kindergarten and first grade students. The presentation included an adapted book, a bingo game, and examples of what items should and should not be recycled. The club, after polishing up on their own gardening skills, shared this new knowledge with the entire student body.

Category: Energy and Renewable Resources

EPB: Performance Excellence in Electricity Renewal
Hamilton County, Tennessee

EPB recently became the first major utility in the world to earn the highly competitive Performance Excellence in Electricity Renewal (PEER) certification, recognizing their commitment to energy efficiency, grid resilience, renewable energy, environmental stewardship, and community engagement. The PEER certification program is managed by the U.S. Green Building Council and is modeled after their Leadership in Energy and Environmental Design (LEED) certification program.

Smart meters installed on all homes within EPB's 600-square-mile territory have resulted in the avoidance of two million individual meter reads annually, and an associated reduction of 419,877 miles driven by EPB trucks. This is equal to a 22,257 gallon decrease in gas consumption, or driving from Nashville to Chattanooga over 3,000 times. This reduction is also equivalent to the carbon sequestered by 162 acres of forest in the United States for one year.

EPB has diligently worked to improve their System Average Interruption Duration Index (SAIDI) by 30 percent from 2010 to 2015. SAIDI is an important tool in customer service, as it measures the average outage duration for EPB's customers.

Additionally, EPB has eliminated the use of 2,369 MWh during peak demand annually, thereby eliminating the release of 3.5 million pounds of carbon dioxide. EPB continues to be a national leader through its development of an increasingly resilient and renewables-friendly grid.

Category: Land Use

The Jackson Walk: From Distressed to Revitalized
Madison County, Tennessee

The Jackson Walk, built on a remediated brownfield site, is a 20-acre live, work, play development located in a neighborhood that was economically distressed prior to development. Before Jackson Walk, the area was crime-ridden, polluted, and had never recovered from the destruction caused by the powerful 2003 tornadoes that ripped through the area. Through a public-private partnership between the City of Jackson and Healthy Communities, LLC, the neighborhood was transformed into a highly desirable community that has become one of the most popular places to live in Jackson.

The development features include a 149-unit luxury apartment building, an on-site grocery store that stocks a variety of healthy options, a fitness facility, a health clinic, a demonstration cooking center, a walking trail, a yoga studio, restaurants, an event venue, and a dog park. This development has helped increase property values that have in turn generated new tax revenue, as well as attract over 30 new businesses that have brought much needed jobs to the area.

Additionally, Jackson Walk was recognized by the Environmental Protection Agency as one of three winners of the 2015 National Award for Smart Growth Achievement. This award is given

annually to projects that creatively work to promote sustainability initiatives to protect the health and environment of communities, while also working to strengthen local economies.

Category: Materials Management

Sevier Solid Waste, Inc.
Sevier County, Tennessee

Sevier Solid Waste, Inc. (SSWI) recycles and composts municipal solid waste from Gatlinburg, Pigeon Forge, Sevierville, and Great Smoky Mountains National Park. It is especially important for the county's vitality and tourism industry to protect the beautiful mountainous area that millions of visitors come to see each year. SSWI does this by diverting 70 percent, or 84,184 tons of the area's total municipal solid waste.

The 94,000 residents and 18 million visitors in the program's collection area put trash, recycling, and organic wastes in the same container. These containers, averaging a total of about 300 tons of solid waste per day, are then transported to SSWI, where they are mixed with bio-solids and run through rotary drum reactors for three days. The drum reactors break down the organics and paper into compost, reducing the amount of the waste that is landfilled by 60 percent. The remaining 10 percent of the facility's overall diversion rate comes from convenience centers that collect materials for recycling. Over 10 countries have toured the SSWI facility to learn about this unique waste management process. Additionally, numerous educational programs have been provided to children and adults alike throughout Tennessee.

SSWI also has a goal of becoming a zero waste facility, and for this reason a gasification system is being installed. The gasification system will reduce operational expenses, improve odor control, and produce a high value agricultural product called biochar.

Category: Natural Heritage

50K Tree Day – A Project of the Tennessee Environmental Council

The Tennessee Environmental Council's 2015 50K Tree Day event involved 92 out of 95 counties and helped to bring social, environmental, and economic benefits to Tennessee. As part of the event, 52,000 native trees were distributed at no cost to 1,921 Tennessee residents. More than 3,000 volunteers helped plant 47,000 of those 52,000 trees.

Future benefits include: mitigating potential air pollution over the 50-year lifetime of the trees, 543-million pounds of carbon dioxide sequestered over a 50-year lifetime once the trees reach maturity, and 823 million gallons of rainfall intercepted in the tree canopy which reduces stormwater runoff and downstream flooding. Additionally, the Council engaged underserved communities in the tree planting event supporting environmental justice in these areas.

This effort expands and supports the native flora and fauna, while also insuring Tennessee's tree canopy for future generations. Trees contribute significantly to not only ecological health, but also economic health through beautification.

50K Tree Day marks the first time the Council actively tried to engage all 95 Tennessee counties. This event uncovered a huge demand that far exceeded the 50,000 trees that were available. There is a clear opportunity for increasing the scale of the event in the future with even greater results than 2015.

Category: Sustainable Performance

Sharp Transport, Inc. Goes Green

Lawrence County, Tennessee

Sharp Transport, Inc., a for-hire freight carrier, has increased their overall trailer fleet efficiency by 11 percent over the last four years. In late 2012, Sharp began participating in TVA's Energy Efficiency Program, through which they were able to reduce facility energy costs by half while improving their lighting and reducing maintenance costs. Around the same time, Sharp began participating in the EPA's Smartway Carrier Program which helps the freight transportation sector improve supply chain efficiencies. As part of the program, Sharp updated nearly 100 tractors with selective catalytic reduction technology engines; implemented low rolling resistance tires over the entire tractor fleet and over 300 trailers; purchased new, lighter weight trailers equipped with side skirt aerodynamic devices to reduce wind drag; and installed automatic tire inflation devices on all trailers.

In April 2013, Sharp implemented onboard recording systems that monitor every aspect of fuel economy and calculate idle time, use of cruise control, RPM management, and speed control. This data is used to provide financial incentives to drivers for achieving fuel economy milestones. Also, Sharp Transport, Inc. has a number of trailers equipped with Trailer Tail aerodynamic devices and average efficiency has improved by three to five percent. Recently Sharp Transport, Inc. became the first carrier in the United States to be awarded with the EPA's Smartway Elite certification recognizing their overall trailer fleet efficiency.

Category - Pursuit of Excellence

Nashville's Sustainable Music City Center – Pursuit of Excellence
Davidson County, Tennessee

Since opening in 2013, the Music City Center has strived to incorporate sustainability into all aspects of their operations, and the success of these endeavors was most recently recognized by their receipt of a Leadership in Energy and Environmental Design (LEED) Gold certification in April 2014. As part of the LEED certification, the building was designed to use 40 percent less water and 20 percent less energy than similarly engineered buildings.

In their first fiscal year the Center exceeded their water goal, decreasing water use by 54 percent equating to over three million gallons of water. This savings was accomplished through installation of low-flow fixtures, motion sensors on faucets, and a 36,000-gallon cistern that collects stormwater runoff and HVAC condensation for use in the Center's toilets and outdoor irrigation system.

In 2015, the Center's rooftop solar panel system produced enough energy to save approximately \$26,600, which translates into enough energy to power 27 homes for an entire year. The building is also designed to reflect heat in the summer and to conversely prevent heat loss in the winter. All of the lighting and HVAC systems are efficient and further decrease energy usage, and the building has a green roof.

The Center has a strong recycling program and in 2014 they diverted over 170 tons of material from the landfill. Excess edible food from the kitchen is donated to organizations in need, while inedible food is composted. Around 30,000 pounds of leftover food has been donated to community members in need. The kitchen puts priority on local food, purchasing from over 60 nearby farms, and has recently installed four beehives on their green roof that will provide honey to the kitchen.

Category - Pursuit of Excellence

Lipscomb Academy Elementary: Making a Difference Locally and Abroad – Pursuit of Excellence
Davidson County, Tennessee

In 2015, Lipscomb Academy Elementary School further expanded its environmental education program to include practical applications of renewable energy production and environmental remediation.

Student members of Lipscomb Academy's Green Team used money raised by recycling to purchase a unit to convert cow manure into biogas for an orphanage in Nairobi, Kenya. The orphanage is run by an organization called Made in the Streets that is dedicated to giving Kenyan teens a home, education, and job skills. Lipscomb's donation of a conversion unit made it possible for Made in the Streets to convert the cow manure they already acquired into biogas that can be used for cooking, while decreasing the volume of recyclable materials sent to the landfill.

Made in the Streets no longer has to purchase gas monthly. Additionally, the project reduces methane emissions and provides a more sanitary method of waste control.

Green Team members also worked to improve water quality and ecosystem health in a local creek after noticing that there was no life in the stream. With assistance from Metro Water Services, a significant public water leak that was providing up to 70 percent of the creek's flow was identified and stopped. Working with several partners including Tennessee Division of Forestry, the Cumberland River Compact, GroWild Native Plant Nursery, and Monroe Harding, the students then completed a riparian buffer restoration that has brought more life to the stream area improving the overall condition of the watershed.

Robert Sparks Walker – Lifetime Achievement Award

To be announced at the June 15th luncheon.