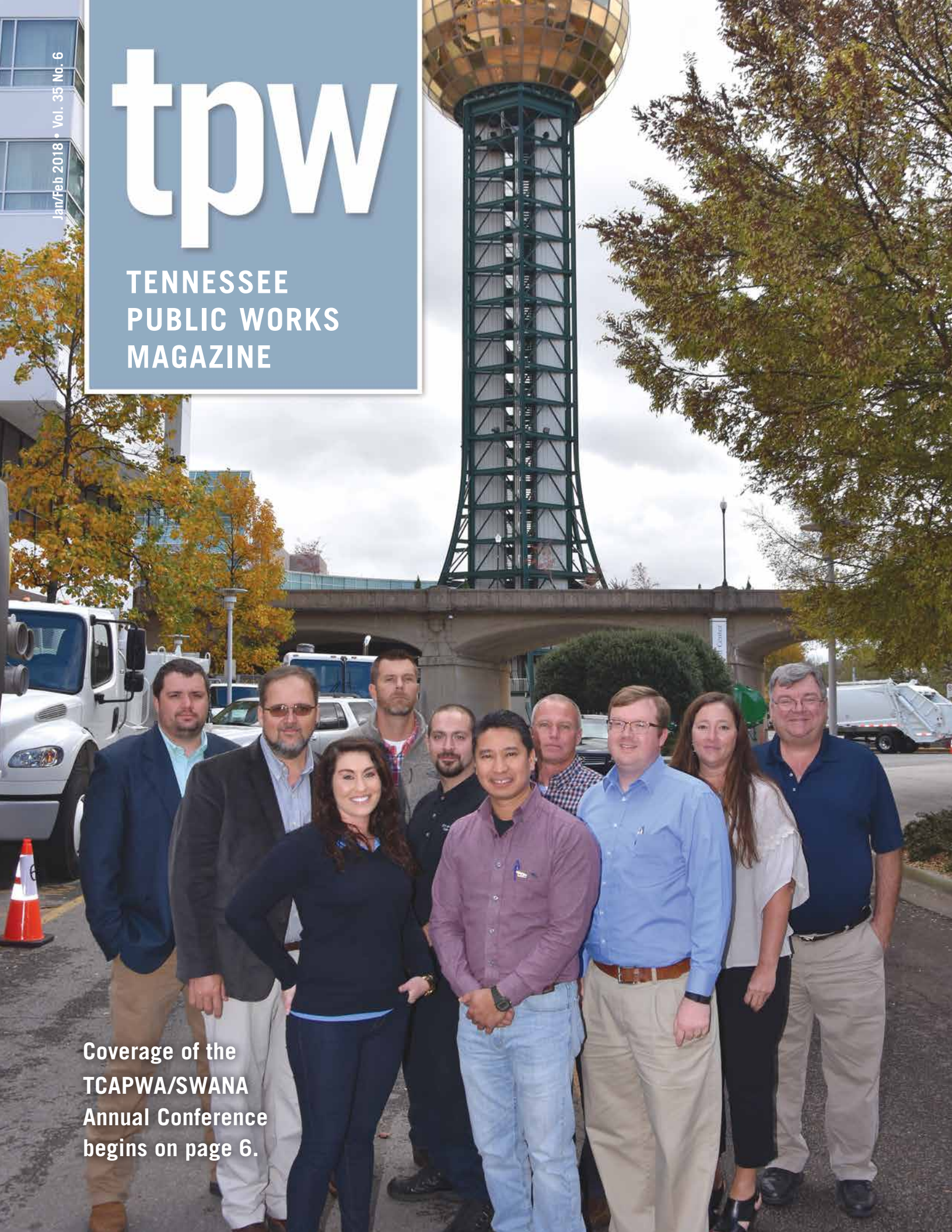


tpw

TENNESSEE
PUBLIC WORKS
MAGAZINE

Coverage of the
TCAPWA/SWANA
Annual Conference
begins on page 6.



Awards from TCAPWA

A.C. Lock Public Works Leader of the Year Award

**Manny Belen, City Engineer and Engineering Division Director
City of Memphis**

The Engineering Division is responsible for design and inspection during construction of streets, bridges, storm drains, sanitary sewers, traffic control devices and City facilities. This division also provides installation and maintenance of signs and markings along streets and maintenance of traffic signals for the City and County municipalities.

Belen has served TCAPWA in nearly every capacity over the last several years. His leadership on committees, as the West Branch Director, and as Vice-President and President demonstrate his commitment to the organization.

W. Larry Eddins Award

**Phillip Jones, Assistant Director of Operations
Metro Nashville Public Works, City of Nashville**

Jones oversees all maintenance activity including trash, recycling, brush removal, right-of-way maintenance, sidewalks, roadways, curbs, and paving.

Jones works tirelessly to promote TCAPWA. Often hosting Board meetings, he also encourages his staff to become involved as well.

Tennessee Chapter - Award of Merit

**Sam Daily, Master Technician, City of Knoxville's Fleet Services Division
City of Knoxville**

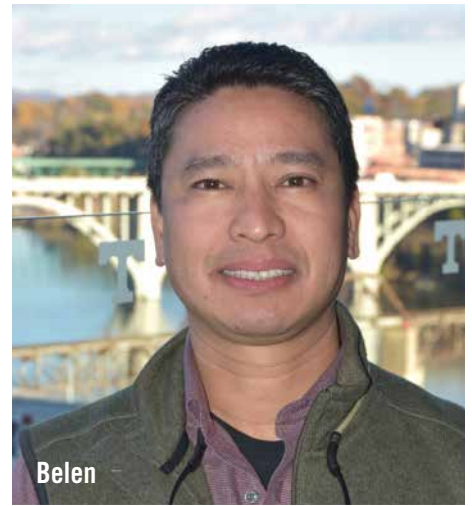
Daily began his career with the City of Knoxville in 2016. Since that time he has become the "go-to" guy for other mechanics in the Fleet Services Department.

After experiencing a severe hand injury, Daily was quickly back on the job, finding new ways to contribute in the shop. He performs inspections, assists with diagnoses, assists with administrative functions, has learned software systems, and is becoming the primary backup to the Heavy Shop Service Writer. Daily's dedication to continue his work in spite of physical set backs demonstrates his willingness to grow and to become an even more valuable contributor to Public Works.

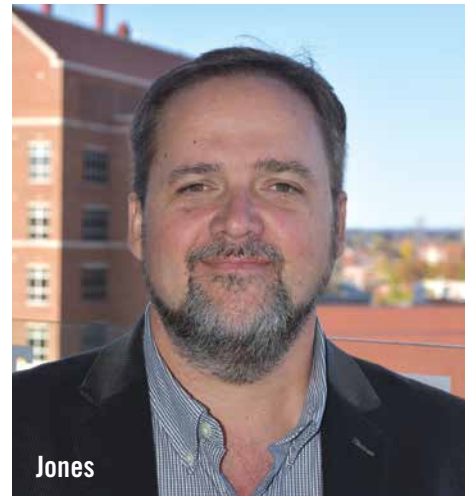
Charles Walter Nichols Award

**Cody Osborne, Solid Waste Superintendent
Metro Nashville Public Works, City of Nashville**

Osborne has over 20 years of service with Metro Nashville, and has over 10 years' experience in the field of Solid Waste. Osborne manages a department of nearly 95 people, and over 90 pieces of equipment used to maintain four convenience centers, 11 recycling drop-off locations, and over 127,000 trash and recycling customers within Metro Nashville's Urban Service District. Metro Nashville Public Works holds its services at the highest regard, and Osborne has been exemplary in his service achievements. Osborne is also currently serving as the TCAPWA Middle Branch Director, and works extremely hard for the chapter in coordinating Branch and educational sessions.



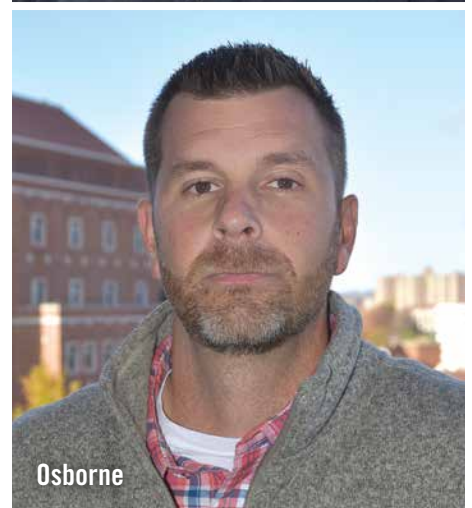
Belen



Jones



Daily



Osborne



Lane

Edward C. Archer Young Public Works Leader of the Year Award

JD Lane, Beautification Commission Coordinator
Metro Nashville Public Works, City of Nashville

The Beautification Commission department utilizes community service workers to pick up litter, trim grass along the right of way, and clean up dumpsites.

Lane has taken on a leadership role at Metro Nashville Public Works, increasing from overseeing the Public Works court-ordered community service program to managing all litter prevention and community beautification programs for Nashville and Davidson County. These programs result in over \$1 million in cost savings to tax payers each year.

In that capacity, Lane takes great pride in TCAPWA and Metro Nashville Public Works. He actively recruits other Young Professionals.



Bradshaw

Roger Clark Award

Nick Bradshaw, Deputy Director of Fleet Services, City of Knoxville

Bradshaw oversees the maintenance and repair of over 1,400 pieces of equipment and vehicles for the city of Knoxville.

Bradshaw works hard as Upper East Director to promote TCAPWA and to host branch meetings and educational sessions.

Frank Kirk Meritorious Service Award

Lauran Canacaris, Marketing Manager for LDA Engineering, Knoxville

Canacaris has become very active in TCAPWA over the past few years. She has been a member and chairperson of several committees including the Young Professional and Membership Committee. She has worked to help plan several past annual conferences and is always willing to help with anything she can for the TCAPWA. Canacaris was a founding member of the Young Professional Committee for TCAPWA and has been an integral member of that group. She brings an energetic, fresh perspective to the Chapter and has been a great asset to the organization.




Canacaris

TCAPWA Project of the Year

Lebanon Gasification Initiative, City of Lebanon

At the heart of the Lebanon initiative is the world's largest downdraft gasification plant designed and built by Aries Clean Energy. Like many cities this size, Mayor Bernie Ash said tackling the solid waste issue is best done

taking one step at a time. He sees this waste-to-energy plant as the first step toward a total material recovery facility line for the city's waste. "I'm pleased to say that with the detailed planning initiated by Aries, construction and implementation have progressed very smoothly. As with any power plant, we've had some bugs to work out, but overall it's been a great team-building experience," Ash said. 



Representing Lebanon are (L to R) Darrell Clark, Regina Santana, and Randy Laine.

TCAPWA Project of the Year Positively Impacts Local Community

The Lebanon Gasification Initiative has received the 2017 Project of the Year honors from the Tennessee Chapter of the American Public Works Association.

This award recognizes a project in a Tennessee city that epitomizes outstanding planning, construction, and management. This project becomes the Tennessee Chapter's nomination for the National APWA Top Ten Projects of the Year Award. It was announced at the TCAPWA Annual Conference, recently held in Knoxville. At the heart of the Lebanon initiative is the world's largest downdraft gasification plant designed and built by Aries Clean Energy.

There are several positive outcomes because of the plant that reach far outside the city limits. Hundreds of visitors from all over the world have trekked to Lebanon to look and learn more about renewable energy at the plant site. Local industries and educators have found that the renewable energy plant can also play a part in helping them become better environmental stewards.

"This kind of recognition spotlights how much teamwork it takes to build and implement a project like this," said Mayor Bernie Ash. "It is rewarding to see how a public/private partnership can work together for good. And the fact that educators and local industry can also benefit because of this plant is just fantastic!"

This marks the fifth industry award for the innovative plant. Earlier in 2017, the

plant received honors from: the State of Tennessee Governor's Stewardship Award and Project of the Year accolades from Environmental Leader and Industrial Wastewater Digest. The Greater Nashville Regional Council presented the 2017 Local Government Award for Public Works and Utility Infrastructure to the City last month.

Like many cities this size, Ash said tackling the solid waste issue is best done taking one step at a time. He sees this waste-to-energy plant as the first step toward a total material recovery facility line for the city's waste. "I'm pleased to say that with the detailed planning initiated by Aries, construction and implementation have progressed very smoothly. As with any power plant, we've had some bugs to work out, but overall, it's been a great team-building experience," Ash said.

Wood Waste Diversion

According to Lincoln Young, Chief Operations Officer of Rockwood Recycling, since the start of wood waste collection to use as feedstock for the Lebanon Gasification Initiative, three local companies combined have diverted 3,025 tons of wood from local landfills during the past year. That's the equivalent of keeping 945 tons of carbon emissions out of the atmosphere or the greenhouse gas emissions from 673 passenger vehicles driven for one year according to equivalents set up by the Environmental Protection Agency. More than a dozen local businesses are currently

participating in the program with Rockwood, a major component of the public/private partnership surrounding the Lebanon plant.

One example is the Carlex aftermarket distribution center in Lebanon that specializes in automotive replacement glass and produces original equipment glass, such as laminated windshields and performance backlights. Carlex is a subsidiary of Central Glass.

A product like automotive glass requires special packaging during storage and transport. Until 2016, the thousands of custom wooden crates were used once before heading to the landfill. When facilitating production and logistic activities, waste streams always pose a challenge, according to Lynda Hogue, director of the aftermarket distribution center.



Randy Laine, Engineering Director, and Mayor Bernie Ash with the Project of the Year Award.



Carlex's array of products intensifies this issue, she added. The plant generates a multitude of crates, cardboard, wood pallets, racks, packaging materials and more from the manufacturing and distribution processes. In addition, millions of pieces of glass per day are transported and distributed.

Carlex's renewable results:

- 2015: 515 tons of waste sent to the landfill
- 2016: 687 tons of waste wood sent to the Lebanon downdraft gasification plant for fuel; 42 tons sent to the landfill after Rockwood Recycling harvested all recyclables
- May 2017: Less than 10 percent of all Carlex waste is sent to the landfill
- Carlex projects its 2017 diversion to the landfill to reach 712 tons by the end of the year.

Biochar Opportunities

Currently the University of Tennessee Institute of Agriculture is engaged in the study of Lebanon's biochar in five different areas of the state. Biochar is the carbon-rich product that is left over after the completion of the gasification process. For example, for every 100 pounds of wood that is gasified at the plant, the city gets 95 pounds equivalent of producer gas that is used to generate electricity, and 5 pounds of carbon-rich biochar is left over. Associate Professor of Biosystems Engineering and Soil Science at the University of Tennessee Dr. Forbes Walker is heading up the studies. Biochar can be used as a soil enhancement because its carbon properties capture and hold water that leads to deeper roots and increased growth.

Effects on Fescue

The effects of different amounts/concentrations of biochar on the growth of fescue is underway in Wilson County. Biochar from the Lebanon plant containing 10 percent biosolids from the wastewater treatment plant was weighed and spread by hand on the one-third-acre test area. The first fescue harvested and soil sampling took place last summer. There are also control sites with no biochar added. There are areas where urea (fertilizer) only was added. The weight amounts are to simulate the tonnage per acre that will be needed.

Walker thinks this type of study is unique in the biochar world. He cannot find where anyone has done this kind of research. He hopes when the results are in,

he will be able to tell a farmer how much biochar to use on his fields to achieve a specific result. For example, if a farmer is primarily a cattle farmer, he will want to use the combination that produces the most protein in the fescue.

Dairy Farmer

A local dairy farmer in Wilson County has agreed to use the Lebanon biochar in his manure storage pit. He is anticipating that the biochar will not only act as a filter but also will accelerate the breakdown of the manure and control the odor. The first application was set to take place in December 2017.

Chicken Broiler Houses

The University of Tennessee at Knoxville team has received a grant to research the use of the Lebanon biochar in a chicken broiler house in Bradley County as a means to control odor and act as a filter. To date, the biochar has only been on site for three weeks. It is hoped that the biochar may be part of the solution for the growing ammonia problem and bacteria issues in chicken houses. Then, at the end of the growing season, all the leftovers are windrow composted. The addition of biochar speeds up the composting process by several days because it takes in the moisture. Chickens sometimes eat the biochar but it does not harm them.

Flood Control

Funding from the U.S. Department of Agriculture is making possible the testing of Lebanon's biochar versus sawdust as a flood water deterrent in three West Tennessee locations. The Ames Plantation in Fayette County as well as sites in Madison and Gibson counties are being earmarked for this testing.

Ames Plantation, home of the National Field Trial Championship for All-Age Bird Dogs, is privately owned and operated

by the Trustees of the Hobart Ames Foundation as Successor Trustees under the Will of the late Julia C. Ames. Ames Plantation also functions as one of the University of Tennessee's AgResearch and Education Centers. [utw](http://www.utw.edu)



Dr. Forbes Walker, Associate Professor of Biosystems Engineering and Soil Science at UT Knoxville, is heading up a study of the effects of biochar on fescue at the UT Agriculture Extension office located near the fairgrounds in Lebanon. For the recent distribution of the biochar, he assembled a diverse group of volunteers from five different countries. Pictured on the back row are Logan Helstein (Wilson County) and Manuel Avalos (El Salvador) both from Rockwood Recycling, and Walker (UK). On the front row from the City of Lebanon, Scott McRae and Jesse Gillam, Dr. Sindhu Jagadamma (India and also on staff at UT Knoxville), and UT Knoxville graduate student Xiuwen Li (China).

