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# TNSA Times

## Tennessee Stormwater Association News & Information

July 2015

### Message from the TNSA President: Next Big Thing!

Vince Gill had a song out a few years ago entitled, *Next Big Thing!* "Everybody's waiting for the next big thing". I don't think we have to wait long for the next big thing, it seems to be here almost every day, especially when new permits are on the horizon. As many of you know, and participated in, TNSA had a joint, and I might say, **successful** meeting in Cookeville with TDEC to discuss some particulars of the next Phase II NPDES MS4 permit. It was a great turn out and very good exchange of ideas. We are continuing to attempt help make the best and most usable permit possible.

TNSA is in the middle of planning for the *Next Big Thing* with our Annual Conference, **Fall Into Green**, at Fall Creek Falls State Park (*Add October 20 -22 to your Microsoft Outlook and send your request today for travel request!*). I'd like to thank Crystal and Leah for directing this effort and all the

committee members. It's going to be the biggest and 'bestest' of all with very important information to keep your MS4 Ship, shipshape, and learn how to make your program bigger and better.

#### Exciting News!

TNSA is now a partner with National Association of Clean Water Agencies (**NACWA**). NACWA is a nationally-recognized leader in environmental policy and a technical resource on water quality issues. They have been involved in several high profile Stormwater issues, such as Stormwater Utility fees payment by federal agencies, **Waters Of The U.S.** issues, and the proposed National Stormwater Rule--which was withdrawn. This will expand **'your'** benefits as a TNSA member. Jennifer Watson and I participated in the first conference call, June 30th, with NACWA's **National Stormwater Network**. This call was to introduce the Network and also had a discussion led by EPA's Greg

Schaner, an Attorney Adviser at EPA HQ, who has been coordinating EPA's response to a 9th Circuit court decision in EDC v. EPA (2003) and NRDC's 2014 [petition](#). In all likelihood, EPA's resolution of this Court decision will impact MS4s when it comes to **public involvement** with the new Phase II permits coming down the pike. Stay tuned folks.

What's the **Next Big Thing**, when it comes to Stormwater? Did you know it takes four hours to get a message back from Pluto! Don't be left in the dark of outer space: Join TNSA; participate in the Regional Meetings and attend our Annual Conference.

Don

Take our [TNSA Survey](#) to help us better serve your needs!

### Call for Sponsors and WQ Festival Exhibitors!

August 29, 2015: [Nashville's Metro Water Services](#), the [TDEC](#), [TDA](#), and [TNSA](#) have teamed up together once again to host a chip-timed Urban Runoff 5k run in Nashville. The run begins at the Centennial Park and weaves its way past several cool and innovative green stormwater management practices. A portion of the net proceeds will go to TNSA to continue to offer this healthy and fun public educational opportunity each year and assist local governments that promote water quality health

### 2015 Urban Runoff 5K in Nashville

awareness & local clean water efforts.

The Urban Runoff will lead into a post-race, family festival, taking place 8:00 - 10:30 a.m.

The Festival celebrates clean water and green infrastructure and includes kids' activities, hands-on education, and more!

[Register individually or a Team here!](#)

Thank you to the following sponsors: [Gobbell Hays Partners](#), [AMEC Foster Wheeler](#), [SustainVU](#).

Sumner-Wilson County Stormwater Group, [TEC](#), [CDM Smith](#), [TDA-Forestry](#), [TDEC](#), [Nashville Zoo](#), [Team Green](#), [Vanderbilt Water Professionals Student Chapter](#), and [Tennessee Smart Yards](#).

Please contact [Jennifer Watson](#) or [Josh Hayes](#) for more information.





**Executive Director**

Charlene DeSha

[Charlene@tnstormwater.org](mailto:Charlene@tnstormwater.org)

## TNSA Committees

### Regulations & Policy

Chair: [Jennifer Watson](#) & [David Mason](#)

### Education Training & Professional Development

Chair: [David Carver](#)

### Manufacturer BMP Evaluation

Chair: [Chris Granju](#)

### Conference Planning

Chair: [Crystal Piper](#)

We welcome TNSA Members to participate on any of these committees! Please contact the committee chair for additional information.

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## 2015 TNSA Membership Campaign

The Tennessee Stormwater Association's annual membership campaign is in full force! The membership term runs through July 1-June 30.

The mission of TNSA is to assist local government entities in their efforts to comply with State and Federal clean water laws and storm water regulations promulgated by the Environmental Protection Agency and the Tennessee Department of Environment and Conservation; and through such assistance, to protect and improve the quality of the waters of Tennessee. Various training opportunities are made available to TNSA members.

TNSA is comprised of 5 regional chapters coordinated by local chairpersons located in East TN, Southeast TN, Northeast TN, Middle TN and West TN.

Connect with these groups through the [TNSA Facebook](#) page and other popular forms of social networking including Twitter and LinkedIn. Other opportunities are provided through regional groups meetings and annual [statewide conference](#).

The mission will be accomplished through TNSA members' exchange of information and knowledge regarding the design, construction, maintenance, administration and operation of storm water facilities.

TNSA will promote the dissemination of information in stormwater control measures, educational resources, and the adoption of improved practices in stormwater administration.

TNSA also provides coordination between MS4s regionally and statewide for program consistency and identification of cost-sharing opportunities and time-saving techniques.

TNSA encourages and promotes partnering opportunities. TNSA's partners include: the TN Chapter of American Public Works (TCAPWA), TN Department of Transportation (TDOT), TN Department of Environment and Conservation (TDEC), TN Department of Agriculture (TDA), TN Wildlife Resources Agency (TWRA), Municipal Technical Advisory Service (MTAS), Middle Tennessee State University and it's Center for Environmental Education, TN Association of Broadcasters, Project WET and other formal and non-formal education partners, as well as various watershed and environmental groups.

Members in good standing from all levels of membership will have the opportunity to compete for representation on the TNSA Board of Directors as per the TNSA By-laws. Opportunities are also available to chair and co-chair a variety of subcommittees.

TNSA is an independent organiza-

tion to benefit MS4 programs and water quality. TNSA offers members a forum to provide a majority opinion of MS4 views to TDEC and the public at large. Representatives serve in stakeholder advisory capacities on elements such as the future development of the state's stormwater permitting program and stormwater training program.

TNSA offers members an avenue to take advantage of existing resources as well as leverage their buying power for more efficient resource utilization. Examples of resource offerings include, but are not limited to, printed publications, public service announcements, bulk lab testing, training opportunities and community outreach.

TNSA also offers a unified and consistent statewide approach to educational campaigns and watershed protection efforts. TNSA is working to develop clearinghouse services that identify and make existing resources and tools available to the MS4 community.

Interested in joining? Visit our website at [www.tnstormwater.org](http://www.tnstormwater.org) or contact Charlene DeSha at [Charlene@tnstormwater.org](mailto:Charlene@tnstormwater.org), 615-926-7094

### New TNSA Membership Benefit: Wiggle

Introducing the new TNSA Membership benefit: Wiggle. Wiggle is an online service, which allows members to share files, calendar of events and conversations. TNSA's goal for this program is to allow sharing of programs, ordinances, permits, education programs and more across the state. Why reinvent the wheel when you don't have to is our motto! This program also allows a feed for group discussions, which can help eliminate multiple emails. Contact Charlene DeSha if you are a member and not added to the program. [Charlene@tnstormwater.org](mailto:Charlene@tnstormwater.org), 615-926-7094.

## TNSA hosts a Booth at the Tennessee Municipal League (TML) Conference

TNSA President-Elect, Crystal Piper and Executive Director, Charlene DeSha exhibited at the Tennessee Municipal League (TML) conference, held in June at the Nashville Convention Center.

Crystal and Charlene said it was

a very successful event in which several municipal administrators and elected-officials were in attendance.

The TNSA exhibit provided attendees with basic education of the importance of stormwater programs, as well as promoted TNSA

membership in communities across the state.

You may learn more about the TML conference in July's edition of the Tennessee Town and City publication (be sure to look for Crystal on page 9): [http://www.tml.org/pdf/up/TT&C\\_July\\_13\\_2015..pdf](http://www.tml.org/pdf/up/TT&C_July_13_2015..pdf)

## Jason Scott: Thank You for Your Years of Dedication to TNSA and Congratulations on your new Endeavor!

Jason Scott, TNSA Vice President, has accepted an exciting new position as AmeriCorps Program Director with the Knoxville – Knox County Community Action Committee, the 40 person environmental AmeriCorps program that currently supports environmental programs across a 4 county area in East Tennessee.

([www.facebook.com/cacamericorps](http://www.facebook.com/cacamericorps)).

In a letter to the TNSA Board, Jason made the following statement regarding his new career path:

“Thank you for working with me over the past several years. My service with TNSA played a notable role in making me competitive for this new leadership opportunity. All those times I was saddled with ‘unanticipated tasks’ I was learning to be a more capable professional and administrator. You have all become a part of my extended family and I will always cherish the time that we’ve had and look forward to working with you in a somewhat different capacity through AmeriCorps in the future. I believe my new employer is interested in broadening our service

area and if this is a possibility, I may have some opportunities for TNSA members to enhance their MS4 programs through affordable, highly motivated AmeriCorps service members.”

We are grateful for his dedication and vision during his wise leadership over the last several years and we’re looking forward to working with him in his new role.

Thank you Jason! We wish you the best!



## EPA and UNC Project: Innovative Financing Approaches for Stormwater and Green Infrastructure

Green infrastructure has become a growing component of many local governments' environmental stewardship strategies. While many smaller scale demonstration projects across the country have attracted external grant funding, full-scale implementation will require a robust financing approach.

Under a cooperative agreement with the U.S. EPA, the [UNC Environmental Finance Center](#) is working to promote innovative financing approaches for stormwater and green infrastructure projects. The project was also aimed at capturing the lessons learned on areas such as budget considerations and incentive mechanisms for green infrastructure projects.

The EFC's products under this project include:

- A **Capital Improvement Green Infrastructure Guide** - [see guide here](#)
- A **Green Infrastructure Finance Strategy** that identifies and describes the key components of financing mechanisms available to support green infrastructure investments, including potential sources of capital and revenue - [see report here](#)

- A **catalog of publications describing the established benefits of green infrastructure** that analyzes these publications along various criteria, including audience and funding details - [see the catalog here](#)

While reference was made to many examples of green infrastructure finance mechanisms from around the country, the EFC focused assistance efforts on the following three communities under this project. The following are **case studies** on the approaches to green infrastructure in these three very different project communities:

1. [Durham, NC](#)
2. [Ramsey Washington Metro Watershed District, MN](#)
3. [Rincon, GA](#)

- **Opportunities to use the Clean Water State Revolving Fund** to leverage additional financing for green infrastructure projects
  - ◇ [See the presentations from the State Revolving Fund Conference in 2013](#)
  - ◇ [See the description and photos from the tour for the State Revolving Fund managers](#)
- Approaches for **incentivizing and facilitat-**

**tating public-private partnerships and private investment of green infrastructure** - [see related webinar here](#)

- **Workshop** on financing green infrastructure - [see description here](#)
- A series of **blog posts** on green infrastructure finance topics:
  - ◇ [Encouraging Property Investments with Stormwater Fee Credit Programs\(link is external\)](#)
  - ◇ [Innovative Financing Approaches for Stormwater and Green Infrastructure](#)
  - ◇ [Crosswalking between Gray and Green Infrastructure for Budget Officers\(link is external\)](#)
  - ◇ [A Green Infrastructure Parking Lot – Questions and Ideas on Incentives for Stormwater Management\(link is external\)](#)
  - ◇ [Downstream Thinking: National and Regional Trends in Green Infrastructure\(link is external\)](#)
  - ◇ [Addressing Barriers to Green Infrastructure Financing \(link is external\)](#)

ENVIRONMENTAL FINANCE BLOG  
*How you pay for it matters.*



## EPA Launches 2015 Campus RainWorks Challenge

### Registration Begins Sept. 1

EPA is calling for entries in its fourth annual Campus RainWorks Challenge, a green infrastructure design competition for undergraduate and graduate students. Student teams, working with a faculty advisor, will submit design boards, a project narra-

tive, and a letter of support for a green infrastructure project on their campuses. This year, student teams will be encouraged to incorporate climate resiliency into their stormwater management designs.

Registration opens Sept. 1 and ends Sept. 30. Teams must submit their entries by Dec. 18,

and winners will be announced on Apr. 22, 2016.

First-place teams will earn \$2,000 to divide evenly among students, and a faculty prize of \$3,000 to support green infrastructure research or training. More information:

[www.epa.gov/campusrainworks](http://www.epa.gov/campusrainworks).

## *The call for applications is now open!*

### **National Municipal Stormwater and Green Infrastructure Awards Program!**

The National Municipal Stormwater and Green Infrastructure Awards program, led by the Water Environment Federation (WEF) through a cooperative agreement with the U.S. Environmental Protection Agency (EPA), has been established to recognize high-performing regulated Municipal Separate Stormwater Sewer Programs (MS4s).

The objective of the program is to inspire MS4 program leaders to seek new and innovative ways to meet and exceed regulatory requirements in a manner that is both technically effective as well as financially efficient. Recognition of innovative approaches is also a highlight of this program.

#### **Award Winners:**

All submissions will be reviewed by the steering committee and all award win-

ners will be announced and celebrated at the Stormwater Congress at WEFTEC this September. All applicants will be categorized into Bronze, Silver and Gold Levels and will receive a certificate celebrating their achievement. This certificate will also highlight their standing as compared to others in the industry (Bronze, Silver, or Gold level).

There will be 3 winners for each Phase I and Phase II communities in the following categories:

- Winner in Program Management
  - Winner in Innovation, and
  - Overall Winner with the highest score
- Phase II Application – Now Open!**

#### **Due Aug 19**

Apply [Here](#)

- Before you apply, review tips below to save time.

- Application deadline is August 19

#### **Phase I Application – Coming Soon**

The application for Phase I MS4s will be available the week of July 20 and will be posted here once open.

#### **Tips for submitters**

Save time by preparing responses in advance

- [Phase II Application \(PDF\)](#)

- **Application must be completed in one sitting.** You cannot save and return to this page at a later time. To save time, please have your responses ready to input into the text fields below.
- All questions are required, except for the Innovations Section.

**For any questions regarding participation in this inaugural recognition program, please send an email to [MS4Awards@wef.org](mailto:MS4Awards@wef.org).**

### **Tennessee's Wild Side & the Tennessee Environmental Council produced a segment of Tennessee 50K Tree Planting Day!**

Most of us live our lives not realizing how much our actions can affect others. But it really doesn't take much effort to have a tremendous impact on the world around us and the people living in it.

That certainly was the case one day in March, when a few thousand volun-

teers across the state did something very simple that will forever affect Tennessee's future. They came together to plant 50 thousand trees...in just one hour!

[Wild Side](#) Guide Lindsay Merwin joined them in their race against the clock...and learned how a small seedling makes a big difference. *From show 2910.*

[Watch Here!](#)

[Visit TEC's Website!](#)



### **Job Opportunities! Knox County Stormwater GIS Administrator & City of Franklin Water Quality Specialist**

#### **1. Stormwater GIS Administrator**

Knox County | Knoxville, TN | Engineering & Public Works

**Open Until:** July 23, 2015 at 11:59 PM EST

**Details:** Salary: \$50,432.10

**PURPOSE OF CLASSIFICATION:** The purpose of this classification is to develop and maintain the Geographic Information System (GIS) data for the Stormwater Management Department and for related infrastructures to the Engineering and Public Works. Duties include, but not limited to;

performing statistical and quantitative spatial analysis for project support; creating, designing and modifying customized maps for staff and public use; collecting, compiling and performing analysis on data required by EPA permitting of Knox County; and performing additional duties as assigned by the Stormwater Manager. [Apply here!](#)

#### **2. Water Quality Specialist I City of Franklin**

**Purpose of Job:** Assists with the operations of the Stormwater Division of the Engineering

Department under the direct supervision of the Stormwater Management Coordinator. Assists in the administration and management of the Water Quality section of the Stormwater Management Program, in order to meet the goals and objectives of the City's MS4 NPDES permit and best management practices

**Deadline to apply:** August 11, 2015

Salary: \$21.29/hour  
EOE/Drug-Free Workplace

[Apply Here!](#)

## Upcoming Conferences

**Live Learn Lead** 2015 TDOT/KTnB Biennial Conference  
Franklin Marriott Cool Springs  
in Franklin, TN  
Tues., Sept. 15 - Weds., Sept. 16

Keep Tennessee Beautiful (KTnB) has been the state leader in litter prevention, greening, & recycling for over 30 years. Join us Sept. 15-16, at the 2015 TDOT/KTnB Biennial Conference, featuring Keynote Speaker Phillip Fulmer (pictured right), the Awards of Excellence, and several training sessions.



Register for the conference at [www.keeptnbeautiful.org](http://www.keeptnbeautiful.org) (Deadline is Sept. 9, 2015)!



### TNSA Annual Conference

October 20-22, 2015

**Call For Sponsors and Exhibitors!**

Join us this fall at Tennessee's premier state park, Fall Creek Falls State Park in Pikeville, Tennessee, as we explore challenges and discover solutions to the ever-changing world of stormwater management in Tennessee. Our theme is "Fall into Green".

This year's Keynote Speaker will be Bill Landry who is the voice, host, narrator, and co-producer of "The Heartland Series", which has aired on WBIR-TV for nearly thirty years. Since its beginnings in 1984, over 1,900 short features have been produced, including 150 half-hour specials. Bill's been awarded two Emmy Awards, the Education in Appalachia Award and received an honorary doctorate of Humanities from Lincoln Memorial University. The series has also received many national and international awards.

For sponsorship opportunities and additional information, please contact Charlene DeSha at [charlene@tnstormwater.org](mailto:charlene@tnstormwater.org) or Crystal Piper at [cpiper@hamiltontn.gov](mailto:cpiper@hamiltontn.gov). For more information and registration [Click Here!](#)



[www.tnstormwater.org](http://www.tnstormwater.org)



### 2015 East Tennessee Development Symposium



Plan to join the Tennessee Stormwater Association in Knoxville, TN as we explore challenges and discover solutions to the ever-changing world of land development and stormwater management.

**November 18 & 19, 2015**

**Knoxville Convention Center  
701 Henley Street, Knoxville**

**Presentation Topics Include:**

- Surveying, Planning, Design, Construction,
- Economics of Low-Impact Development, BMP Maintenance and Regulatory Compliance and Policies

**CEU's and PDH's will be offered!**

Check website for more details

**Visit [TNStormwater.org](http://TNStormwater.org) for more information**

For more information:  
Phone: (615)926-7094  
Email: [charlene@tnstormwater.org](mailto:charlene@tnstormwater.org)



The Stormwater Congress Program, offered as a part of WEFTEC, allows stormwater professionals from around the world to gather in one location, at the largest water quality conference and exhibition in the world, to learn from the very best, thought-leaders in the stormwater sector.

**Highlights include:**

- Access to more than 30 specifically-tailored, stormwater technical sessions and workshops on:
  - Regulations and policies
  - Flooding impacts and mitigation
  - Benefits of green infrastructure
  - Stormwater and transportation systems
  - Operations and maintenance
  - Research in stormwater
  - Stormwater financing and funding strategies, and more...
- Opportunity to attend additional WEFTEC programming covering the entire water industry
- Stormwater Pavilion – located on the WEFTEC exhibition floor, filled exclusively with stormwater exhibitors, and includes numerous presentations, discussions, and networking events
- Full access to the WEFTEC 2015 Exhibition, featuring nearly 1,000 exhibiting companies

[www.weftec.org/stormwatercongress](http://www.weftec.org/stormwatercongress)  
Registration begins on March 31, 2015.  
"Best Rate" deadline is July 15.



## Meeting your Public Education Minimum Measure: Join the Tennessee Association of Broadcasters: TAB Program!



TNSA is continuing to work with the [Tennessee Association of Broadcasters](#) (TAB) and Stormwater Consultant, Tom Lawrence, P.E., to provide the TAB Stormwater Education Program for the 2015-2016 year.

The program works with TAB to distribute professionally developed radio and television Non-Commercial Sustaining Announcements (NCSAs) to television and radio stations throughout the State. TAB has over 330 television and radio station members in Tennessee.

Due to TNSA's relationship with TAB, all participating MS4s will be provided with NCSA airtime reporting, which can be included in your annual report as credit

toward your stormwater education and outreach program. TAB states that the return-on-investment in the average NCSA program can deliver 4 to 10 times the annual expenditures!

The cost of participation is based on the population within the MS4 (see table below). TAB uses the money received from TNSA for distribution, promotion, and tracking of the NCSAs. TNSA pools the money from the individual MS4s to contract with TAB for the program to negotiate additional airtime at lower costs.

Chris Masin, Shelby CountyMS4, enthusiastically promotes TAB: "Of course Shelby County MS4 would like to partici-

pate in the TAB program for 2015. The exposure that the radio ads give the stormwater program is invaluable. The effort level to receive TDEC accepted public education credits is as simple as approving the invoice and downloading the efficiently-sent, timely reports. And the amount of value that the airtime is worth compared to the minuscule cost is absolutely mind-blowing. Count me in!"

If you would like to get an invoice for the TAB Program and receive monthly airtime reports, please contact [Tom Lawrence](#) (901-237-4819) or [Charlene DeSha](#) (615-926-7094).

Tier Level	Population	Yearly Rate	Tier Level	Population	Yearly Rate
1	25,000 or less	\$400	4	100,000 or less	\$1,600
2	50,000 or less	\$800	5	Greater than 100,000	\$2,000
3	75,000 or less	\$1,200			

## Using a Watershed Approach to Improve Project Site Selection Can Pay Off

A new [handbook](#) by [The Environmental Law Institute](#) and [The Nature Conservancy](#) describes how using a watershed approach can improve site selection for wetland and stream restoration and protection projects, thereby improving their performance and maximizing conservation outcomes.

The handbook describes how using a watershed approach can offer a concrete, science-informed mechanism for improving site selection for wetland and stream restoration and protection projects, thereby improving their performance and maximizing conservation outcomes. By explicitly considering the issues and needs within a watershed and the various existing agency plans and goals (e.g., water quality goals, habitat protection goals) and making them relevant to wetland and stream restoration projects, multiple partners can work together to achieve them.

Watershed health is more likely to improve with an increased understanding of needs, better site selection for restoration and protection projects, and an alignment of

regulatory and nonregulatory wetland and stream restoration and protection efforts. "

This handbook can serve as a go-to manual for any group or agency working on wetland and stream restoration or protection projects," said Mark P. Smith, TNC's Deputy Director of the North America Freshwater Program. "The approach helps to coordinate protection and restoration projects across a wide variety of programs and groups, allowing each individual project to play a role in a larger effort to address the most pressing environmental needs and help achieve a larger overall environmental benefit. Equally important, using a watershed approach can ease the regulatory approval process—and thereby help ensure infrastructure projects like highways get their regulatory approvals more quickly."

Funding for the development of the handbook was provided by the EPA. Private sources, including the Doris Duke Charitable Foundation and Joyce Foundation, supported three pilot watershed approach projects—one each in Georgia, Tennessee and Wisconsin.

On March 18, 2015, EPA's Watershed Academy sponsored a [free Webcast seminar on the ELI/ TNC Watershed Approach Handbook](#).

The Webcast can be viewed in archived form on YouTube. A [slide show](#) is also available for download in PDF.



Watershed Approach Handbook

Improving Outcomes and Increasing Benefits Associated with Wetland and Stream Restoration and Protection Projects

September 2014

The Nature Conservancy  
Protecting nature. Preserving life.

## Four New Reports Illustrate How Green Infrastructure Can Improve Communities

EPA is releasing four reports from the Greening America's Capitals Program. Greening America's Capitals helps state capitals develop an implementable vision of environmentally friendly neighborhoods that incorporate innovative green infrastructure strategies. In collaboration with the U.S. Department of Housing and Urban Development and the U.S. Department of Transportation through the Partnership for Sustainable Communities, EPA provides design assistance to help support sustainable communities that protect the environment, economy, and public health and to inspire state leaders to expand this work elsewhere.

The four cities that received assistance in this fourth round of Greening America's Capitals are:

◆ [Lansing, Michigan](#): The design options show how the city could transform a 10-acre parking lot between the state capitol and Hall of Justice into a public

park that incorporates green infrastructure to reduce flooding and water pollution and creates natural areas with native vegetation for people to enjoy. The park could become an amenity that spurs investment in nearby vacant and neglected property. The design options also make adjacent streets safer and more appealing to pedestrians and bicyclists.

◆ [Madison, Wisconsin](#): The design options show ways to make it easier for people of all abilities who live and work in the Triangle neighborhood, a diverse, low-income neighborhood, to get around within the neighborhood as well as reach other parts of the city. The options also show how green infrastructure, such as rain gardens and permeable paving, could capture and cleanse stormwater collected from the neighborhood and surrounding streets to improve water quality in Lake Monona.

◆ [Montpelier, Vermont](#): The design options explore how a missing link of a regional bike trail could be built in the downtown and how two intersections could work better for pedestrian, bicyclists, and drivers. Design options also illustrate how more plants and trees could be incorporated into streets and parking lots to make the downtown more attractive and reduce the runoff flowing into the Winooski River.

◆ [Olympia, Washington](#): The design options create a cohesive vision for Capitol Way, the city's main street downtown that links the state capitol with the popular Olympia Farmers Market. The city hopes that investing in street improvements will spur increased private investment and vitality in the downtown.

Read more about these and other Greening America's Capitals projects at <http://www2.epa.gov/smart-growth/greening-americas-capitals>.

## New Climate Adjustment Tool Strengthens Stormwater Management Model Projections

As part of President Obama's Climate Action Plan Virtual Climate Resilience Toolkit, the U.S. EPA released the Climate Adjustment Tool for [EPA's Stormwater Management Model \(SWMM\)](#), a downloadable stormwater simulation model used throughout the world for stormwater runoff reduction planning and analysis, as well as design of combined and sanitary sewers and other drainage systems.

The new Climate Adjustment Tool (CAT) allows engineers and planners to evaluate the performance of water infrastructure while considering future climate change projections, such as more frequent high-intensity storms and changes in evaporation rates of seasonal precipitation, to determine the benefits of resiliency decisions to reduce local economic burden and protect communities.

SWMM was recently updated to accept monthly adjustment factors for time series that could represent the potential impact of future changes in climatic conditions. CAT, a simple-to-use software utility, allows climate change projections to be incorporated into SWMM. This capability will enable users to add climate change scenarios (based on the

Intergovernmental Panel on Climate Change's projections) to existing simulations to determine the quality of water traveling through the traditional stormwater control infrastructure features such as gutters, storm drains, pipes, channels, collection tanks and storage devices. The tool can also model the performance of green infrastructure practices, including permeable pavement, rain gardens and green roofs. Engineers and planners can accurately represent any combination of traditional and green infrastructure practices within an area to determine how effectively they can manage stormwater and combined sewer overflows.

More information about the tool is available in the [SWMM-CAT User's Guide](#).

### **CAT is One Tool in a Growing Toolbox**

CAT, in addition to other tools in the President's [Climate Action Plan Virtual Climate Resilience Toolkit](#), can help users make planning, analysis and design decisions that will guard against the effects of climate change.

Using these tools to choose the best adaptation options is an innovative and efficient way to promote healthy waters and support

more sustainable communities. Other EPA resources included in the Climate Resilience Toolkit can help protect communities against extreme weather and reduce the local economic burden after a natural disaster.

For example, the [National Stormwater Calculator](#) is a desktop application that homeowners, landscapers and developers use to estimate the amount of rainwater and the frequency of runoff on a specific site based on local soil conditions, land cover, historic rainfall records and climate change scenarios.

The EPA's [Climate Resilience Evaluation and Awareness Tool \(CREAT\)](#) is a software tool that helps drinking water and wastewater utility owners and operators understand potential climate change threats and assess the related risks.



## Ohio State projects finds there's money in those maples— [iTree](#)

### [Article from The Columbus Dispatch](#)

An Ohio State University project suggests that money really does grow on trees. "Why Trees Matter" takes a stroll along tree-lined streets to a whole new level by assigning dollar values to various arboreal services, such as carbon capture and energy efficiency.

James Chatfield, an OSU extension specialist and contributor to the project, said the goal is simple: "To give people an understanding that economic benefits of trees exist and to help people understand what the value of the community forest is." So how much are Columbus' trees worth? A 2010 audit by OSU researchers assigned an annual value of about \$8.6 million to the 90,696 trees.

"Why Trees Matter" incorporates a program called [iTree](#), developed by the U.S. Department of Agriculture Forest Service and a number of groups and companies including Kent, Ohio-based Davey Tree Expert Co.

[iTree](#) was created to provide researchers and urban planners tools to analyze the benefits of urban trees. For example, an American sycamore with a trunk 35 inches in diameter in Columbus provides about \$345 a year in services.

How? For one thing, its canopy can slow rainwater and aid in evaporating it after a rainfall, saving about \$165 in stormwater runoff prevention. And the shade it provides in summer and the windscreen it provides in winter can save \$85 on heating and cooling costs by providing shade in summer and a windscreen in winter.

Scott Maco, Davey Tree's director of research and development, said this sort of analysis is just the beginning.

"What we can do in [iTree](#) right now in terms of quantification is at best 5 or 10 percent of the benefits trees provide," he said.

Maco said experts can even calculate the value of reducing health issues such as asthma by cutting air pollution.

Mike Kuhn, a professor in the Wildland Resources Department at Utah State University, cited a study that suggests trees planted along curbs slow traffic and reduce crashes.

"These are just pieces of the puzzle of what a tree provides," Chatfield said. "We are beginning to get more robust in our understanding of the value of this living organism." Maco said assigning values to trees and using programs such as [iTree](#) allows people to better understand how the environment contributes to our everyday lives.

"Monetary value is certainly something that everyone can identify with, whether it's city managers or homeowners," he said.

Christina Voise, a specialist at Ohio State's Chadwick Arboretum, said the program helps bridge the gap between economists and conservationists. "It lets us speak the same language as everyone else — dollars and cents."

Maco said homeowners and municipal planners can use the [iTree](#) calculator to decide which trees to plant and where to plant them in order to capitalize on their monetary value. And it could motivate people to take better care of their trees.

"It describes how the benefits over time often outweigh the cost of planting and maintaining those trees," he said.

Chatfield said looking at neighborhoods and cities from this perspective should help champion trees.

"Putting value on trees lets people take environmental activism to political action," he said. And, "For city managers, it's all about competition. You have to be able to justify the budget. You have to be able to justify where those dollars go and the tangi-

ble benefits to the community."

Kuhn said that in some circles, economic value holds more weight than environmental value.

"I think it's also worth having a dollar value so in the meeting with the engineers, the trees will have a more even footing."

Dave Carey, co-chairman of the Delaware Shade Tree Commission, said when he gives his annual presentation to the Delaware City Council, he always makes sure to include values.

"Folks in government are always talking in dollars and cents," he said. "It's easier to make an argument when you can say the investment you are making in city trees is paying you back and they're providing more to the city than they're costing the city." Some, however, are uncomfortable with putting price tags on nature.

"How can you put a value on something that's priceless?" said Voise, the OSU arboretum specialist.

Kuhn agrees. "It certainly takes away from the mythical quality of trees," he said. "To have to put a dollar value on it does seem like you've given up ... on society accepting that spiritual value can be equated with monetary value."

However, Chatfield said adding economics to the conversation is necessary. "It's important to begin to calculate what they do in addition to the aesthetic benefits we usually talk about," he said.

Maco said this kind of examination is important. "Trees pay us back," he said. "We invest in them, but they are giving back and making a healthier community and a better community in terms of places to live and work and play."

[rthebault@dispatch.com](mailto:rthebault@dispatch.com)

## EPA Makes Screening Tool Available to Public

A tool used by the Environmental Protection Agency to identify areas with potentially evaluated environmental issues and vulnerable populations is now available to the public. The agency June 10 made its EJSCREEN mapping tool available on its website. The agency uses the EJSCREEN tool, which combines high-resolution maps with demographic and environmental data, to identify candidates for

additional consideration, analysis and outreach as the EPA develops programs that could affect those communities. The tool helps identify areas with potential environmental quality issues and minority and low-income populations, but it isn't used to label areas as an "EJ community," according to the EPA website. EPA Administrator Gina McCarthy said in a June 10 statement that the EJSCREEN tool

will provide "essential information" about the effects of pollution in U.S. communities. The tool could prove useful for developing educational programs, community awareness efforts and grant proposals, the EPA said. Additional information on the EJSCREEN tool is available at <http://www2.epa.gov/ejscreen>.

## Free Webinar! Working with Schools for Waterways Education

How can environmental professionals work with schools to educate youth about waterways protection? And what about parents?

In this [webinar](#), we will review the findings of a recent research study with 800 K-12 teachers. You will learn what they had to say about incorporating waterways information into their classes, meeting federal and state standards, scheduling field trips,

and more. Then you will hear about how a county government successfully worked with the local school system to coax thousands of parents to promise to do their part to prevent sanitary sewer overflows!

**This FREE one-hour webinar will be offered twice:**

1. July 23 at 10:00 a.m. Eastern
2. July 29 at 1:00 p.m. Eastern

### Speakers:

- Margarete Heber, U.S. Environmental Protection Agency
- Mike Harris, New Castle County (DE) Department of Special Services
- Eric Eckl & Avia Huisman, Water Words That Work, LLC

[Register Here!](#)

## Free Webinar! New Directions for Clean Water: Intelligent Infrastructure

Learn about the future of stormwater management during this WEF eShowcase featuring OptiRTC!

07/22/2015 - 1:00 PM - 1:45 PM EDT

[Registration Link](#)

**Introduction:** Most existing infrastructure handles stormwater passively. These

systems, designed for a targeted event or average performance over the long term, often function poorly and contribute to negative environmental impacts including combined sewer overflows, poor water quality, and rapid runoffs. In this eShowcase, Marcus Quigley will share how Internet-of-Things technology can provide

intelligent, forecast-based controls to optimize the performance of stormwater infrastructure. Several case studies will highlight how cost-efficient retrofits result in optimized performance of existing infrastructure, keeping our water clean and our cities safe.

This eShowcase is sponsored by [Opti](#).

## Shelby County Selected to Continue to Phase II in the National Disaster Resilience Competition

In late June, U.S. Housing and Urban Development Secretary Julián Castro announced that 40 states and local communities will compete in the second and final phase of HUD's [National Disaster Resilience Competition](#) (NDRC). HUD's competition is designed to help states and local communities recover from past disasters while improving their ability to withstand future extreme events through strategic community investments.

The NDRC is a \$1 billion competition that could be a potential funding source for addressing unmet needs from the 2011 severe storms and flooding and long-term resilience efforts, including

potential implementation of the Mid-South Regional Greenprint. The maximum grant award available at the end of Phase 2 will be \$500 million and the minimum will be \$1 million.

A series of three severe storm systems in April 2011 caused significant damage in Shelby County. Due to the severity of the damages and flooding, Shelby County was identified by the U.S. Department of Housing and Urban Development (HUD) as Tennessee's most impacted area. These three events resulted in Presidential Disaster Declarations and serve as the basis for the County's eligibility to participate in the NDRC.

The breadth of the impact across Shelby County from the April 2011 storms impact emphasizes the need for a thoughtful and comprehensive long-term recovery process. The County is in the process of assessing remaining recovery needs in the fields of housing, infrastructure, economic revitalization, and the natural environment and analyzing the risks and vulnerabilities that face Shelby County as well as how they will change over time.

**"Building a more resilient Shelby County is critical as we seek to address safety for our citizens and create a more livable community,"** said Mayor Mark H. Luttrell, Jr.

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## Schedule a Regional Training Opportunity: Stormwater Administrative Hearings Course

How do you defend and collect penalties? How do you avoid problems if a decision is appealed?

This class provides municipal/ county attorneys, public officials and municipal staff an understanding of administrative law and the fundamental components of administrative hearings, as well as how to better present evidence to boards. Instructors will discuss

procedures of particular hearings such as: stormwater, water and wastewater and property maintenance.

During this highly interactive class, participants will view a video of administrative hearing procedures and witness a mock session that will illustrate the dos and don'ts of administrative hearings. With the administrative penalty process, you can assess

much higher penalties than preciously thought – in the case of stormwater, for example, \$5,000 per day per violation.

This important class is recommended for elected officials, appointed officials, city attorneys, city recorders, codes enforcement officials and utility and public works directors and managers. Schedule your class by contacting John Charlson at 731-423-3710.

**Register now! Tennessee's Permanent Stormwater Management Design Courses!**

**Permanent Stormwater Management Design Course**



**Course Description:** This one-day course is designed for engineers, landscape architects, stormwater plans preparers and local government plan reviewers. The course describes how to create stormwater management systems using green infrastructure and evaluate performance with the Tennessee Runoff Reduction Assessment Tool (TNRRAT) so that stormwater management plans for new and redevelopment projects meet the requirements of the TN MS4 permit.

**Dates & Location:**

- Knoxville – June 18, 2015, Rothchild Conference Center, 8807 Kingston Pike
- Memphis – July 28, 2015, Ensafe Office , 5724 Summer Trees Dr.
- Nashville – July 30, 2015, One Century Conference Ctr., 26 Century Blvd.

**Times:** Course begins at 8:00 a.m. – 5:00 p.m. Lunch provided.

**Costs:** \$200 per person

**Professional Development Hours:** Certificates of Attendance for 8.0 PDHs will be issued and mailed to all attendees.

**Materials Required:** All attendees should bring a laptop loaded with the basic version of the TN Runoff Reduction Assessment Tool (TNRRAT). The TNRRAT can be downloaded from the TN Stormwater Training website [www.tnstormwatertraining.org](http://www.tnstormwatertraining.org). Attendees will be granted design level access to the TNRRAT during the course.

**Registration:** Course registration is limited to 30 persons and can be completed at the training website [www.tnstormwatertraining.org](http://www.tnstormwatertraining.org). NOTE: You must download the TNRRAT from the website before you can register for the course. You are encouraged to view the tutorial videos available on the website to assist with the download process. Course confirmation and information for credit card authorization forms and invoices will be automatically be emailed to you once registration is complete. If you have any questions regarding registration contact Kellie Caughom at [kcaughor@utk.edu](mailto:kcaughor@utk.edu). For information on course content or assistance with TNRRAT download contact [info@tnpermanentstormwater.org](mailto:info@tnpermanentstormwater.org).

**Permanent Stormwater Management Design Course**



**Agenda**

Time	Topic
8:00 am	Welcome and Introductions
8:15 am	TN Runoff Reduction Assessment Tool (TNRRAT) <ul style="list-style-type: none"> <li>Runoff reduction performance standards</li> <li>Soils, climate, and special conditions</li> <li>Model Fundamentals</li> </ul>
9:30 am	Runoff Reduction Achieved with Smart Site Design <ul style="list-style-type: none"> <li>LID concepts to avoid, minimize, and manage</li> </ul>
10:00 am	Break
10:15 am	Basic Design with TNRRAT <ul style="list-style-type: none"> <li>Residential site examples (passive and sub-basin structural controls)</li> <li>Subdivision development design using block approach</li> <li>Small commercial simple site example</li> </ul>
12:00 pm	Lunch – Install Design Level Template
12:45 pm	Stormwater Control Measures (SCMs) & Managements <ul style="list-style-type: none"> <li>Overview of SCMs</li> <li>Establishing management</li> <li>Design considerations</li> <li>Selection for success</li> </ul>
1:45 pm	Inlet/Outlet and Bypass Design
2:30 pm	Break
2:45 pm	Advanced Design with TNRRAT <ul style="list-style-type: none"> <li>Redevelopment with incentives</li> <li>Site-constrained design with infiltration limitations</li> <li>Multituse plan with variable soils and special conditions</li> </ul>
4:00 pm	Helpful Hints, Tips, and Addressing Barriers <ul style="list-style-type: none"> <li>Saving files</li> <li>Reporting</li> <li>Barriers to implementation</li> </ul>
4:30 pm	Adjourn

The Design Level access in TNRRAT will provide designers additional flexibility in SCM specifications by allowing them to change the engineering specifications from the standard set of specifications. For example, they may change the thickness and composition of media layers in bioretention applications or permeable pavement. Designers will also have access to additional model outputs such as time series data on storage and outflow rates from SCMs.

**Workshop Sponsored By:**






**Level I & II TNEPSC Course and TN-HDT Course Schedule**

TNEPSC <u>Level I</u> Certification Course	
July 31, 2015	Nashville
September 2, 2015	Knoxville
September 22, 2015	Nashville
October 8, 2015	Chattanooga
November 4, 2015	Memphis
November 12, 2015	Johnson City

TNEPSC <u>Level II</u> Certification Course	
September 9 & 10, 2015	Cookeville
October 29 & 30, 2015	Nashville
November 17 & 18, 2015	Chattanooga

  

TN Hydrologic Determination Training (TN-HDT)	
August 10-12, 2015	Montgomery Bell State Park

Please contact [Tim Gangaware](mailto:Tim.Gangaware) with questions or visit the website: <http://tnstormwatertraining.org/> or <http://tnhdt.org/>.

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## U.S. Supreme Court agrees to hear groundwater dispute between Mississippi and Tennessee

### [National Groundwater Association](#)

The U.S. Supreme Court on June 29 granted Mississippi's request to file a new lawsuit claiming Memphis is stealing its water, keeping alive a legal battle now in its 11th year. Mississippi filed a 300-plus-page motion with the court early in 2014, requesting permission to file a new complaint seeking at least \$615 million in damages. The proposed complaint names Memphis, the city-owned Memphis Light, Gas and Water Division, and the state of Tennessee as defendants.

Mississippi claims through its intense pumping of more than 140 million gallons daily, Memphis is drawing groundwater that belongs to Mississippi. Memphis' wells have created "cones of depression" in the water table that suck water across state lines into Tennessee, according to the filing, which estimates 252 billion gallons have been "forcibly" taken since 1985.

The *Commercial Appeal* in Memphis reports attorneys for the city, MLGW, and Tennessee filed motions responding to Mississippi's complaint. They contend the Mississippi claims run counter to legal precedence and science. The deep, high-quality aquifer known alternately as the Memphis Sand and the Sparta Sand is an interstate resource, they say, and Mississippi cannot claim ownership of any part of it without a formal process in which the aquifer is apportioned among states.

The Mississippi motion is the latest in a legal battle dating to 2005, according to the *Commercial Appeal*, when Mississippi Attorney General Jim Hood filed suit against Memphis and MLGW in federal court in Oxford, Mississippi. That suit sought up to \$1.3 billion in damages and could have required

the city to draw some of its water from the Mississippi River.

In February 2008, U.S. District Judge Glen H. Davidson ruled his court lacked jurisdiction because the state of Tennessee, though not named as a defendant, must be brought in as a "necessary and indispensable" party. In such a dispute between states, the arbiter must be the Supreme Court, he said. Davidson's ruling was upheld by the Fifth Circuit Court of Appeals. In January 2010, the Supreme Court, without comment, denied Mississippi's motion to overturn an appellate court's ruling and rejected the state's motion to file a new suit.

With this session of the Supreme Court concluding on June 29, the case will likely be heard in October of 2015 with a ruling in the summer of 2016.

For more information [Click Here](#)

## Multi-State Version of Rain Garden App Now Available

A great resource for rain garden fans: the University of Connecticut's [Rain Garden smartphone app](#) is now a multi-state app. Plant, sizing, and soils information has been added for 13 states (so far).

### Background:

Originally developed for CT with funding from CT Sea Grant, the Rain Garden mobile application walks a user through how to properly site, size, install, and maintain a rain

garden. It includes a series of video tutorials, a google maps based sizing tool, NRCS soils data, a plant selector tool, and a personalized database to manage rain garden projects. It is available for both [iOS](#) and [Android](#) devices (just search for "Rain Garden" in your favorite app store). Oh, and its Free!

### Multi-State:

With funding from the USDA NIFA Wa-

ter program and help from our wonderful partners in other states, we have reconfigured the app to allow for state specific information. Users can now search for rain garden plants native to (or at least well adapted to) their state, size their rain garden based on local standards, and view USDA soils data for their location.

We hope to include Tennessee data soon!

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**Purpose**

The mission of the Tennessee Stormwater Association (TNSA) is to assist local government entities in their efforts to comply with State and Federal clean water laws and Stormwater Regulations promulgated by the Environmental Protection Agency and the Tennessee Department of Environment and Conservation; and through such assistance, to protect and improve the quality of the waters of Tennessee. This mission will be accomplished through TNSA members' exchange of information and knowledge regarding the design, construction, maintenance, administration and operation of stormwater facilities. The TNSA will promote the dissemination of information in stormwater control measures and the adoption of improved practices in stormwater administration.

**Members**

TNSA membership is composed of designated Municipal Separate Storm Sewer Systems (MS4s) including local governments (city and county), universities, military installations, and other entities such as TN Department of Transportation (TDOT). Associate members include environmental advocacy groups, non-profits, Tennessee State, sub-state or federal government entities consultants. Private sector membership is available to for-profit engineering, scientific and management firms or other organizations with an interest in stormwater.

**West Tennessee Rain Gardens Installation**

The Memphis-Shelby County Office of Sustainability and the West Tennessee Chapter of the American Society of Landscape Architects designed and installed (along with 40 volunteers) four rain gardens in late June at the Peggy Edmiston Administration Building in Shelby County using grant funds.

This has already aided in the mitigation of stormwater during the recent heavy down-falls.



**Tennessee Concrete Association Stormwater Solutions**



**Tennessee Concrete Association Stormwater Solutions**

TCA campus in Nashville, Tenn. showcases ways to use pervious concrete, conventional concrete and ingenuity to reduce stormwater runoff from their urban campus.

[YOUTUBE.COM](http://YOUTUBE.COM)

**EPA's EnviroAtlas**

EnviroAtlas is a collection of interactive tools and resources that allows users to explore the many benefits people receive from nature, often referred to as ecosystem

services. Though critically important to human well-being, ecosystem services are often overlooked. Using EnviroAtlas, many types of users can access,

view, and analyze diverse information to better understand how various decisions can affect an array of ecological and human health outcomes.