

FEBRUARY 2022
1ST QUARTER



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TNSA Times

Tennessee Stormwater Association
Quarterly Newsletter

A Message From the TNSA President

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As the new year has begun and holiday festivities and hopeful resolutions get overshadowed by cloudy, cold, and dreary days filled with yet more illness, we can feel like we're in a season of life that is just drawn out and discouraging. Sometimes our work can feel that way, too; it's always going to rain and it's going to keep flowing downhill picking up trash along the way. Our job is never done, so how do we respond to the day-to-day tasks that seem never ending?



I'm the type of person that enjoys structure and change sort of scares me a bit, so it is a challenge for me to be excited about new stuff. But this coming year has plenty of challenges to look forward to and growth to work towards. Whether we're talking about proposed legislative rulings (WOTUS), forthcoming permits (NPDES), potential funding sources (ARP), or even local developments changing our own individual programs/businesses, we can choose how we're going to actively engage on these fronts. My hope is that in the midst of that, we focus on collaboration and teamwork as we cross the invisible lines placed between our departments, cities/counties, agencies, businesses, disciplines, and maybe even sports teams (big maybe there).

One of the things I'm most thankful for with TNSA is that it fosters those relationships... if we allow it to. Who do you have that you can reach out to with questions? Who do you go to for advice? (Don't say Google) Make the effort to put yourself in a group of good people. Attend the TNSA regional meetings (and other chapter meetings that you're a part of) and find out what work others are doing. Make it a point to share at least **one** thing that you're doing well and **one** thing that you're struggling to achieve. By sharing each other's experiences we gain knowledge and create space for synergy. Don't go at it alone for "there is wisdom in a multitude of counselors."

Respectfully,

Josh Rogers, City of Chattanooga, TNSA President 2022

Upcoming Regional Meetings

Regional meetings are held each quarter. You do not have to be a TNSA member to attend a meeting. Region meetings are a great way to keep updated within your area and the state. Meet like-minded professionals, network, learn about statewide events and new ideas within the stormwater community.

NOTE: All in-person region meetings are in person in 2022

- ♦ East: 8:30am-11:00am March 4, June 3, September 9, December 2
- ♦ West: 1pm-3pm March 1, June 7, September 6, December 6
- ♦ North West: 10am-11am March 2, June 8, September 7, December 7
- ♦ Middle: 11am-1pm March 3, June 9, September 8, December 8
- ♦ North East: 1pm-2pm March 8, June 2, September 15, December 1
- ♦ South East: March 9 11am-1pm

For updated meeting information visit our website event calendar.

**** Meeting Dates are subject to change ****

Email Charlene DeSha if you would like to be added to a specific region email list.

Committee Updates

Communication: Goal is to work on communication within and outside of the organization

Chair: Aaron Rogge, CDM Smith

The Communications Committee will have a 1st quarter meeting Thursday February 24th at 1pm Central time. Please let Aaron Rogge know if you are interested in serving on the committee. Email: roggea@cdmsmith.com

Public Outreach: Creates Education Resources

Chair: Tom Lawrence, Thomas Lawrence Engineering

The TNSA Public Education and Outreach Committee has continued to move forward, completing several important milestones. At the moment we are working on a Homeowners Association rack card or brochure. TNSA currently sells the Homeowner Guide to Clean Water & EPA "After the Storm" brochures and TNSI the Turtle Children's Activity booklet/stickers. To purchase visit: <https://www.tnstormwater.org/ed>

SCM: Standardizes Device Evaluation and Develops SCM Toolkit.

Chair: Jacob Dorman, Contech

In 2021, the rebranded SCM Committee:

1. Grew membership by 30% over prior year
2. Updated the TNSA Guide to Stormwater Manufactured Treatment Devices to reflect recent changes to the New Jersey Department of Environmental Protection (NJDEP) Hydrodynamic Separator (HDS) Protocol; and Created a membership survey that identified a need for additional guidance around SCM Design and Maintenance. The survey elicited over 50 responses! The results will serve as a foundation for 2022 Committee work and beyond.

The SCM Committee looks forward to providing TNSA membership with valuable SCM tools and guidance in 2022!

Policy: Works with TDEC to share and update members on state and EPA regulations and policies;

Chair: David Mason, CDM Smith

The policy committee is looking for new committee members. Please contact Charlene DeSha if you are interested in participating.

Committee Updates Continued...

INTERESTED IN BEING MORE INVOLVED? CONSIDER PARTICIPATING IN A COMMITTEE. POLICY, CONFERENCE, EDUCATION, COMMUNICATION, SCM AND PUBLIC OUTREACH CONTACT CHARLENE FOR MORE INFORMATION

Education: Manages and Creates Educational Training and Resources

Chair: Tim Gangaware, UT Water Resources Research Center

The education committee is currently working on Erosion Days in the South East and East regions, Stormwater Basics for TN MS4's for South East, North East and North West regions, TNSA Talks and two 5K's this year.

UPCOMING TNSA TALKS ON ZOOM. INCLUDES 1 PDH.

Thursday, February 17, 1pm CST: 2NDNATURE Software-Cloud Software for Stormwater Program Success

Thursday, April 7, 1pm CST: Assessing your Audit Awareness

To register for the current talk visit <https://www.tnstormwater.org/tnsatalks>

Stormwater Basics for TN MS4's—FREE CLASS

April 28-29, City of Alcoa, 8:30am-4pm, PDH and Lunch included.

Only 10 spots left!

To register: <https://www.tnstormwater.org/stormwaterbasicsclass>

BOARD MEMBER UPDATES

Outgoing Members

Greg Buckner-City of Lenoir City-East Region

Warren Garrett-Middle Region

Emily Harrell-City of Lakeland-At Large

Ryan Jackwood-Harpeth Conservancy-Associate

Tracy Jones-Knox County-At Large

Maria Price-City of Chattanooga-At Large

Justin Teague-EnSafe-Private

Adrian Ward-Barge Design Solutions-Private

Incoming Members

Samantha Farmer-City of Bristol-North East

Tim Gangaware-UT WRRC-Associate (EDUCATION COMMITTEE CHAIR)

Kaitlyn Klema-Knox County-East Region

Jason Mann-GeoServices-Private

Jennifer Stone-Thompson Engineering-Private (NEW SECRETARY)

Lance Wagner-City of Gallatin-Middle

2022 Conferences

Tennessee American Society of Landscape Architects Conference

May 5-6, 2022, Knoxville

KY/TN Water Professionals Conference July 17-20, 2022 Lexington, KY

Tennessee Municipal League Conference August 13-16, 2022 Gatlinburg

StormCon September 26-28, 2022 National Harbor, MD

TN Engineers Conference September 18-20, 2022 Franklin

SESWA October 5-7, 2022

TNSA Annual Conference October 18-20, 2022 Burns

TN Environmental Conference October 24-26, 2022, Kingsport

Manatees are starving in Florida. Wildlife agencies are scrambling to save them

In Florida, an ecological disaster has led to the deaths of more than 1,000 manatees. The large, slow-moving marine mammals graze on seagrass in shallow coastal areas, but a massive die-off of seagrass has left them without enough to eat.

The lack of food is most acute in Indian River Lagoon. That's a 150-mile-long saltwater estuary where more than 90% of the seagrass, the manatee's main food source, has died. The record number of manatee deaths this year is an estimated 10% of the total Florida population.

Manatees are susceptible to cold and congregate in the lagoon during winter. In the past, the main threats to them have been collisions with boats, toxic algae and cold weather.

This year, starvation became a major factor, leading the federal government to designate it an "unusual mortality event" and join with other wildlife agencies and conservation groups to respond.

Large numbers of starving manatees have been rescued, but Jon Peterson, who heads the rescue operation at SeaWorld Orlando, says rehabilitating an emaciated manatee is a slow process. "You slowly stretch the stomach, get it used to food again," Peterson says. "A starvation event animal, we're looking at four to nine months before they're ready to go back out."

The large number of emaciated and distressed manatees is severely taxing a network of wildlife agencies, zoos and research groups that rehabilitate them and eventually reintroduce them into the wild. SeaWorld has expanded its rehabilitation facilities. Other aquariums and marine parks are also scrambling to add more water space.

Peterson says manatee rescue teams are bringing in a large number of orphaned calves. Mothers who can't find enough food for themselves feed their babies until they're no longer able. Rehabilitating orphan calves, Peterson says, takes three to four years.

"You've got a year of just bottle feeding ... every three hours around the clock," he says. "And then you have to transfer them over to eating lettuce. And once they start eating lettuce more, then you transfer them into understanding that they're a manatee." Peterson says the good news is that his team has a 96% success rate in raising calves and returning them to the environment.

Efforts are underway to improve water quality — addressing issues caused by septic tanks, sewage and fertilizer runoff in Indian River Lagoon. But restoring the once-lush seagrass beds there may take years. In the meantime, many want wildlife agencies to begin an emergency feeding program to prevent more deaths from starvation.

"What we're pressing hard for is to supplement the diet, especially to get those manatees that are already malnourished, and prevent them from reaching the point of starvation," says Patrick Rose, the executive director of the Save the Manatee Club.

That raises questions for wildlife agencies that typically discourage people from feeding manatees and other animals in the wild. But the prospect of several hundred more dead manatees has convinced Florida's Fish and Wildlife Conservation Commission that a supplemental feeding program is necessary. So far, the U. S. Fish and Wildlife Service hasn't signed on. Research needs to be done to determine what food would be best and how it would be delivered. And, Rose says, it needs to begin soon.

"We may actually be reduced primarily to looking at feeding them much like you do in captivity with lettuce or cabbage or other forms of greens," he says. "But again, it's frustrating because we can't even get this tested yet."

Asked about its plans for manatees, the U.S. Fish and Wildlife Service says no decision has been made on supplemental feeding and there's no timeline for when a decision is expected.

Ad information: <https://www.npr.org/2021/12/02/1060439776/manatees-starving-seagrass-dying-florida>



A manatee swims amid seagrass in the Homosassa River on Oct. 5 in Homosassa, Fla. Conservationists are planting seagrass in the area to help restore the natural habitat for manatees and provide a feeding ground for the mammals, following a record year in manatee deaths in Florida. The deaths were primarily from starvation due to the loss of seagrass beds.

TDEC Updates

NPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) Permit No. TNS000000

The small MS4 permit expired on September 30, 2021. This means that the current (2016) permit will be administratively continued until the new permit is in effect. Permittees who were already covered under the current (2016) permit will continue to be covered. When the new permit is issued these programs will need to submit a Notice of Intent (NOI). This process will be detailed in the new permit. To be clear, an NOI is not required until the **new** permit requires it.

Draft 2022 List of Impaired and Threatened Waters in Tennessee

The draft 2022 List of Impaired and Threatened Waters in Tennessee is now available for public review and comments. This document, developed by the Tennessee Department of Environment and Conservation, compiles waterbody segments that violate one or more water quality criteria or are documented as threatened by pollutants.

Public Notice and Notice of Public Hearing

Draft 2022 List of Impaired and Threatened Waters

Comments on the draft list will be accepted through February 25, 2022 and should be directed to Richard.Cochran@tn.gov.

To further facilitate public review and comments, a public hearing was held on January 11, 2022. Please see the public notice document for additional information.

American Rescue Plan (ARP)

In March of 2021, Congress passed the American Rescue Plan (ARP) Act. This Act provided \$1.9 trillion in COVID-19 relief for state and local governments, hard-hit industries, and communities; tax changes affecting individuals and business; and other provisions. ARP will provide Tennessee state government with \$3.91 billion and Tennessee local governments will receive \$2.28 billion between cities and counties.

One way that ARP funds may be used is for necessary investments in water infrastructure. Addressing Tennessee's drinking water, wastewater, and stormwater infrastructure is a critical need. Reports produced by various sources cite necessary investment in Tennessee drinking water, wastewater, and stormwater infrastructure ranging from \$5 to 15 billion dollars between now and 2040.

The Tennessee Department of Environment and Conservation (TDEC) is charged with administering the water, wastewater, and **stormwater** infrastructure component of the State of Tennessee's allocation of American Rescue Plan (ARP) Act funds. More information about the Tennessee's ARP and **Water Infrastructure Investment Plan** can be found on TDEC's website at [ARP \(tn.gov\)](https://www.tn.gov/arp).

Direct questions about the water, wastewater, and stormwater elements of Tennessee's ARP funds to: TDEC.ARP@tn.gov.

Online Videos Resources

NPDES Stormwater Permitting Program - REGULATORY BACKGROUND

Desktop Review of Water Resources (This video introduces Tennessee legal definitions of streams and wetlands and showcases tools anyone can use for a desktop review of stream and wetland indicators.)

Construction Stormwater Permit Overview (Video-overview of the requirements under the CGP.)

TMSP Overview (This video provides a brief overview of the requirements under the Tennessee Multi-Sector General Permit for Industrial Activities)

TMSP No Exposure Certification (This video provides an overview of the applicability of the Tennessee Multi-Sector General Permit "no exposure" exemption.)

NetDMR and Electronic Reporting (tn.gov) The Division of Water Resources is in the process of launching the new MyTDEC Forms online portal for submission of permit applications and reports.

Ann Morbitt | Integrated Water Resources Consultant:
Tennessee Department of Environment & Conservation Division of Water Resources
711 R.S. Gass Blvd., Nashville, TN 37216 (615) 687-7119



The Tennessee Stormwater Association is Tennessee's premier membership organization for stormwater professionals. TNSA's mission is to assist members with their local efforts to comply with State and Federal clean water laws; including stormwater regulations through EPA and TDEC (Tennessee Department of Environment and Conservation). TNSA's goal is to protect and improve the quality of the waters of Tennessee through the exchange of information and knowledge regarding design, construction, maintenance, administration and operation of stormwater facilities.

** MS4 MINIMUM CONTROL MEASURES QUARTERLY NEW SERIES **

The Tennessee Stormwater Management Program and CEC are presenting a recurring series each newsletter to highlight approaches that communities across the State are taking to manage their stormwater program and address the Six Minimum Control Measures (MCMs) that are required for compliance with the Statewide Phase II Small Municipal Separate Storm Sewer System Permit.

Public Education and Outreach

Public Involvement/Participation

Illicit Discharge Detection and Elimination

Construction Site Stormwater Runoff Pollutant Control

Permanent Stormwater Management at New Development and Redevelopment Projects

Pollution Prevention/Good Housekeeping for Municipal Operations

This Quarter we highlight work being done by the Town of Farragut to inspect, evaluate, and map existing stormwater infrastructure. MCM Three requires that all permittees develop, update, and maintain, a storm sewer system map that shows the location of system outfalls where the municipal storm sewer system discharges into waters of the State or to storm sewer systems owned or operated by another MS4 jurisdiction. This criterion may be met with a range of tools, from a hand drawn map hanging in your office to a Geographic Information System (GIS) linked to an inventory management system. While the latter is certainly a more significant investment of effort up front, it can provide value to management and maintenance of your stormwater inventory in the long term.

In July of 2019, the Town of Farragut solicited statements of qualifications to: provide visual inspection of the Town's stormwater infrastructure, compile the data into a GIS, and to develop a searchable database. They also asked that the selected firm develop a rating system to indicate the overall condition of existing infrastructure and develop a long-term repair and replacement plan for aging and/or damaged infrastructure, including suggested methods for repair and estimated costs.

One of the limiting factors that may keep some programs from tackling a project like this is the scale. Not to mention the potential uncertainty in that scale (i.e. how much data will need to be collected and synthesized). The selected consulting team worked with the Town to develop a data collection approach including a tailored attribute list specific to the Town's needs. This included identifying the limits of the study, which was performed as a pilot program to inform additional mapping to be completed in subsequent years. Data were then collected, characterized, reviewed and uploaded to the Town's server using ESRI ArcMap as well as traditional survey equipment.

The information collected included coordinates, invert elevations, condition ratings, materials, dimensions, and flow direction. Images for each asset were also collected and linked within the Town's database. Following completion of this task, the consulting team reviewed and characterized closed circuit televised survey of seventeen separate pipe crossings consisting of approximately 2,000 linear feet of corrugated metal storm sewer pipe ranging from 24 inches to 60 inches in diameter. Following review and characterization, the consulting team developed a pipe rehabilitation work scope consisting mostly of trenchless repair via Cured-in-place pipe (CIPP) using data collected in the field during the previous phase of work for development of plans and bid quantities.

Getting started with a stormwater infrastructure mapping and inventory project can be understandably intimidating, but by breaking the work into phases and carefully scoping the work with your consulting partners, the process can be more manageable. Additionally, the benefits of developing a storm sewer system map extend beyond permit compliance as this proactive approach to infrastructure management leads to long-term level of service and cost benefits to operators and citizens.

For additional information please contact Lori Saal at the Town of Farragut (Isaal@townoffarragut.org) or John Greer at Civil and Environmental Consultants (jgreer@cecinc.com).

Community Riparian Restoration Project for Tennessee (CRRP)

The **Community Riparian Restoration Project for Tennessee (CRRP)** is an initiative undertaken by The University of Tennessee Departments of Forestry, Wildlife and Fisheries, Biosystems Engineering and Soil Science, Agriculture Leadership, Education and Communication and Civil and Environmental Engineering in partnership with Tennessee Department of Agriculture, Division of Forestry. The ultimate goal of this initiative is to raise awareness through education and technical understanding of riparian systems through applied research across the state of Tennessee.

Current goals of the program will focus on compiling riparian buffer and water quality data from MS4s and other sources in East Tennessee, especially those indicated to be "high-need" according to the 2010 Forest Action Plan (see map). This data will be used to create a cohesive baseline map of riparian buffer quality across the region to highlight areas in need of remediation, and to improve post-restoration monitoring.

Current counties of interest include: **Sullivan, Cumberland, Washington, Greene, Jefferson, Knox, Roane, Loudon, Bradley, and Hamilton counties.**

More information will be coming soon at riparian.utk.edu.

If you are interested in sharing data, or have questions/suggestions related to the program, please reach out to Maddy Johnson, maddyjohnson@utk.edu.

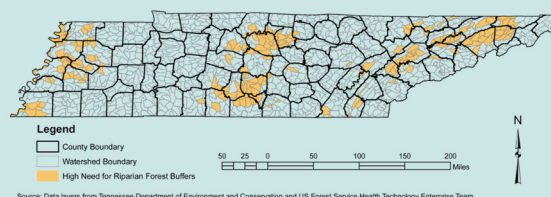


Figure 1. Riparian Buffers in "high needs area" across the state of TN

9th Annual Nashville Urban Runoff!

Call for WQ Booths & Sponsorships!

Join us August 6, 2022, at Shelby Park for the 9th Anniversary of the Nashville's Urban Runoff 5K! Nashville's Metro Water Services, TDEC and the Tennessee Stormwater Association have teamed up together once again to host the Urban Runoff 5K and Water Quality Festival!

Dogs on leashes and strollers welcome! We'll have a fun and educational Water Quality Festival for the whole family to enjoy from 6:30-10:30.

For more information about the race, please visit our Facebook Page or our TNSA 5K webpage. Thank you to all our Sponsors over the last 8 years!

If you are interested in Sponsorship Opportunities or participating in our Water Quality Festival visit <https://www.tnstormwater.org/urban-runoff-5k>. Please contact Charlene DeSha (charlene@tnstormwater.org) if you have any questions.



TENNESSEE STORMWATER ASSOCIATION



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SAVE THE DATE 2022 TNSA ANNUAL CONFERENCE Montgomery Bell State Park October 18-20, 2022

Pre-Conference Workshop Monday, October 17
<https://www.tnstormwater.org/tnsa-conference>



2022 Governor's Environmental Stewardship Awards

Nominations are currently being
accepted until March 31, 2022

Award recipients will be
announced in the summer of 2022

<https://www.tn.gov/environment/program-areas/opsp-policy-and-sustainable-practices/governor-s-environmental-stewardship-awards.html>