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2ND QUARTER

TNSA Times

Tennessee Stormwater Association Quarterly Newsletter

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A Message From the TNSA President

"We Are the World"

There comes a time
When we heed a certain call
When the world must come together as one
There are people dying
Oh, and it's time to lend a hand to life
The greatest gift of all
We can't go on
Pretending day-by-day
That someone, somewhere soon make a change
We're all a part of God's great big family
And the truth, you know, love is all we need
We are the world
We are the children
We are the ones who make a brighter day, so let's start giving
There's a choice we're making
We're saving our own lives
It's true we'll make a better day, just you and me
Oh, send them your heart
So they know that someone cares
And their lives will be stronger and free
As God has shown us by turning stones to bread
And so we all must lend a helping hand…..

Recently we have witnessed severe destruction from localized tornadoes, as well as the COVID-19 pandemic, where we have all witnessed loss of property and life, it may have left many of us possibly scared and confused or just uncertain as to what our future brings. The above song may help you take a deep breath and confirm that we as a country, have dealt with many hardships in the past, just none quite like this. Please take time to encourage and pray for one another during this pandemic and beyond. We all are members of a great TNSA organization and many of us are close colleagues and friends. This past Conference in Montgomery Bell, I personally appreciated the friendship everyone shared as a group and I do look forward to this again in 2020.

Thanks goes out to all of our first responders, medical personnel as well as essential individuals that have responded and stood up to the continued challenges we face.

TNSA will continue to encourage electronic correspondence with members until the pandemic has subsided and approval received by appropriate officials, we do thank everyone for the understanding and cooperation. The Board will be holding a ZOOM discussion on the following topics and possible scheduling changes that may perceivably occur due to the worlds state of affairs and any information gathered, will be passed on as soon as possible to all members.

Stormwater Basics Class (April 7-8, April 28-29, May 20-21)
Urban 5K Runoff (August 1)
TNSA Conference (Oct 20-22)
Trail Runoff (Nov 7)

Deuteronomy 31:8
The LORD himself goes before you and will be with you; he will never leave you nor forsake you. Do not be afraid; do not be discouraged."

On behalf of the board, thank all of you for your continued support and engagement in TNSA. Your active involvement in committees and regional meetings helps to create a collaborative atmosphere and build a meaningful organization in TNSA.

Warren C. Garrett

Goodlettsville, Tn. MS4 Stormwater Coordinator/TNSA President 2020

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. Meet professionals who have like minds, network, learn about statewide events and new ideas within the stormwater community.

NOTE: Meetings will only be held if COVID-19 bans are lifted by these dates.

- East: First Friday 8:30am-11:30am June 5, Sept 4, December 4
- West: First Tuesday 1pm-3pm June 2, Sept 1 , December 1
- North West: First Wednesday 10am-12pm June 3, Sept 2, December 2
- Middle: First Thursday 10am-12pm June 4, Sept 3, December 3
- North East: Second Thursday 1pm-2pm June 11, Sept 10, December 10
- South East next meeting will be held June 2020.

For updated meeting information visit our website event calendar.

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

TNSA 2020 EVENTS

August 1: Urban Runoff 5K
7:30am, Shelby Bottom Park Nashville, TN

October 20-22: 2020 TNSA ANNUAL CONFERENCE
Montgomery Bell State Park Dickson, TN

November 7: West Region Trail Run
International Harvester Managerial Park Lakeland, TN

DATES MAY CHANGE DUE TO COVID-19 RESTRICTIONS

Committee Updates

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

Chair: Aaron Rogge, CDM Smith

The Communication Committee is working on the next two videos in the legislative series, "Why do I care?" and "What's being done?". The first video "What is Stormwater?" can be viewed on the Tennessee Stormwater Association's You Tube page.

Public Outreach: Creates Education Resources

Chair: Tom Lawrence, Thomas Lawrence Engineering

The Public Outreach Committee will print a children's education activity book this year and will be offered at a very low discounted price for free to TNSA members. We are waiting to heard back concerning grant funds for this project.

Do you have a nice looking, informative Hot Spot brochure or rack card you would like to share? Please email Charlene@tnstormwater.org.

Committee Updates Continued…

Conference: Organize Annual Conference

Co-Chair: Rebecca Dohn, Metro Nashville **Co-Chair: Jennifer Watson, City of Gallatin**

TNSA ANNUAL CONFERENCE "GOING THE DISTANCE IN 2020".
October 20-22, 2020. Montgomery Bell State Park, 1000 Hotel Avenue Burns, TN 37027
Abstracts being accepted until June 1, 2020
REGISTRATION & SPONSORSHIPS, NOW AVAILABLE!

TNSA Member Registration Early Bird Rate: $225 (Sept 1 regular rate $250)
Non-Member Registration Early Bird Rate: $275 (Sept 1 regular rate $325)
One-Day Registration: $150
Book your room today. Visit website: https://www.tnstormwater.org/tnsa-conference

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Education: Manages and Creates Educational Training and Resources

Chair: Tim Gangaware, UT Tennessee Water Resources Research Center

Thank you to the members who have volunteered for the Education Committee. Our goal is to have at least one member for each Region participate. Tim will be organizing a conference call sometime in April.

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

Chair: David Mason, CDM Smith

In light of the coronavirus pandemic that has led to stay at home orders or directives in many of our communities, EPA has recognized that these orders may make it more difficult for the regulated community to remain in full compliance with their regulatory obligations. In response, EPA issued a memo titled "COVID-19 Implications for EPA's Enforcement and Compliance Assurance Program" (link: https://www.epa.gov/enforcement/covid-19-implications-epas-enforcement-and-compliance-assurance-program) on March 26, 2020 that states EPA will exercise enforcement discretion for non-compliance for a temporary period of time as it relates to COVID-19. Please note this policy pertains only to permittees that EPA regulates directly. Authorized states (such as TN) may take a different approach under their own authorities. TDEC has not issued any state-wide guidance regarding MS4s at this time. TNSA's Policy Committee suggests that if you anticipate an instance where your permit compliance may be in jeopardy due to the COVID-19 pandemic, please contact your local field office or TDEC central office to discuss.

How do the 2019 Tennessee Stream Mitigation Guidelines Affect Your Project?

A Practitioner's Point of View on Implementing the 2019 Tennessee Stream Mitigation Guidelines

Nearly one year following the release of the 2019 Tennessee Stream Mitigation Guidelines (Guidelines) and subsequent adoption of the Tennessee Stream Quantification Tool (TNSQT), Civil & Environmental Consultants, Inc. (CEC)
has been involved in a wide range of projects requiring mitigation assessments, Clean Water Act (CWA) permitting, and practical implementation of the Guidelines and TNSQT. Although the Guidelines do appear to result in a more cumbersome permitting process and give rise to increasing mitigation credit prices, there are several ways permit applicants can use the Guidelines to their benefit and limit effects of CWA permitting and mitigation on their project.

Overview of New Permitting Process

While the 2019 Guidelines apply directly to the jurisdiction of the State, both Tennessee Department of Environment and Conservation (TDEC) and the Nashville District of the Army Corps of Engineers (Corps) were involved in its development and apply its methods and tools to both State and Federal CWA permitting and mitigation processes.

The most significant transformation is the change in methodology for determining mitigation requirements and credit determinations from a simple ratio based system to a quantitative method that measures stream function with the TNSQT. This change has added several steps to the permitting process with the incorporation of the Debit Tool. The Debit Tool is an Excel-based tool that permit applicants must complete to determine the debits (functional loss) for their proposed impact activities. Debits are essentially how many mitigation credits will be needed to offset the proposed impact.

The first step in calculating debits is to determine the existing condition score of the stream proposed for impact. The Debit Tool allows the permit applicant to choose one of three options for determining existing condition scores.

Option 1: Complete an existing condition assessment of all the required parameters and metrics.

Option 2: Estimate the existing condition score by assessing some, but not all, of the required metrics.

Option 3: Use a standard existing condition score (1.0 for Exceptional Tennessee or Outstanding Natural Resource Waters and 0.8 for other waters as a default).

Option 1 and Option 2 require field assessments of each stream proposed for impact using the Rapid Assessment Method in the TNSQT, whereas Option 3 requires no field assessment. Each option results in an existing condition score, which is multiplied by the length of impact in order to determine existing functional feet.

Next, a proposed condition score must be assigned by determining an impact severity tier. The impact severity tier is a categorical determination of the amount of adverse impact an activity will have on stream functions and are based on the type of impact proposed (i.e. culvert vs. span bridge). Impact severity tiers range from 0-6 where 0 represents no appreciable permanent loss (0%) of stream functions and 6 would result in a significant loss (100%) of
stream functions such as loss of stream footage. Each tier results in a proposed condition score, which is multiplied by the length of impact to determine the proposed functional feet.

Lastly, the difference in proposed functional feet (PFF) and existing functional feet (EFF) is the number of debits resulting from the proposed impact, which translates to credits required to mitigate the proposed impact.

Example Project

Presented herein is realistic example project detailing the wide range of results that can be encountered on a single project dependent upon the option chosen for determining existing condition scores and impact severity tiers.

A new commercial or residential development proposes four intermittent stream crossings totaling 220 linear feet of stream impact, which would require an Individual Aquatic Resources Alteration Permit (ARAP) from TDEC. For simplicity, a representative existing condition score is applied for Option 1 and Option 2, although in reality they would require separate assessments for each point of impact. It should be noted that the Guidelines state that no stream will be assessed as having an existing condition score lower than 0.40 to ensure minimal protection for all streams. Example proposed conditions under each option are a 3-sided box culvert terminating outside of the stream banks (Tier 3) and a 48" CMP culvert (Tier 5). Both impact severity tiers in the example assume no loss of stream footage due to impact.

Option 1: Complete an existing condition assessment of all the required parameters and metrics. For this example, a representative existing condition score is 0.60.

Table 1. Option 1 Example

Impact Severity Tier	Existing Stream Length (LF)	Existing Condition Score (ECS)	Existing Functional Feet (EFF)	Impact Severity Factor	Proposed Condition Score (PCS)	Proposed Functional Feet (PFF)	Functional Loss (PFF – EFF) (Debits)
Tier 3	220	0.60	132	0.52	0.31	68.20	-63.8
Tier 5	220	0.60	132	0.12	0.07	15.4	-116.60

In CEC's recent experiences, rare situations would warrant the implementation of Option 1 due to the extensive efforts and increased costs associated with the full assessment of all parameters within the TNSQT.

Stream Mitigation Guidelines (continued)

Option 2: Estimate the existing condition score by assessing some, but not all, of the required metrics. For this example, a representative existing condition score is 0.40.

Table 2. Option 2 Example

Impact Severity Tier	Existing Stream Length (LF)	Existing Condition Score (ECS)	Existing Functional Feet (EFF)	Impact Severity Factor	Proposed Condition Score (PCS)	Proposed Functional Feet (PFF)	Functional Loss (PFF – EFF) (Debits)
Tier 3	220	0.40	88	0.52	0.21	46.20	-41.80
Tier 5	220	0.40	88	0.12	0.05	11	-77

Option 2 has proven to be the most favorable option for permit applicants. It provides the flexibility to only assess the parameters the applicant feels are warranted, as well as the option to accept default scores for parameters that may otherwise score higher.

Option 3: Use a standard existing condition score (1.0 for Exceptional Tennessee or Outstanding Natural Resource Waters and 0.8 for other waters as a default).

Table 3. Option 3 Example

Impact Severity Tier	Existing Stream Length (LF)	Existing Condition Score (ECS)	Existing Functional Feet (EFF)	Impact Severity Factor	Proposed Condition Score (PCS)	Proposed Functional Feet (PFF)	Functional Loss (PFF – EFF) (Debit)
Tier 3	220	0.80	176	0.52	0.42	92.40	-83.6
Tier 5	220	0.80	176	0.12	0.10	22	-154

Option 3 is commonly used on large streams or rivers that are not feasible to assess under Option 1 or Option 2.

Due to the nature of the TNSQT, the value of steam mitigation credits varies widely for individual mitigation sites, across watersheds and physiographic regions. Current stream mitigation credit values range from approximately $1,200 – $2,200 per functional foot credit. Given the various possible outcomes in the example project above, mitigation costs for a single project can vary from $50,160 – $338,800 depending on the existing condition scores of the feature being impacted, proposed impact severity tiers, and the credit prices currently established by mitigation banks and in-lieu fee programs.

A positive aspect of the Guidelines is that it does give some control and discretion back to the permit applicants. Rather than applying a single impact ratio to all streams of various quality proposed for a range of different impacts, applicants now have the option to prove the quality of the stream and evaluate different types of impacts in an effort to reduce their mitigation requirements. Below are the most notable ways applicants may reduce costs and take advantage of options given in the new Guidelines:

- Conduct stream assessments to reduce existing condition scores
- Impact severity tiers – evaluate cost efficiency of proposed structures vs. mitigation costs
- Use stream assessments and structure vs mitigation cost analysis as leverage in your detailed alternatives analysis

It is CEC's experience that applicants proceeding under Option 2 to assess existing conditions of streams proposed for impact are the most likely to reduce their mitigation costs by the greatest margins, and additional structure analyses may reduce costs even more. While the upfront costs of permitting may increase by performing SQT stream assessments, the potential savings in mitigation costs are sure to exceed.

CEC is happy to answer any questions you may have regarding the new permitting process or provide a brief review and consultation of your project.

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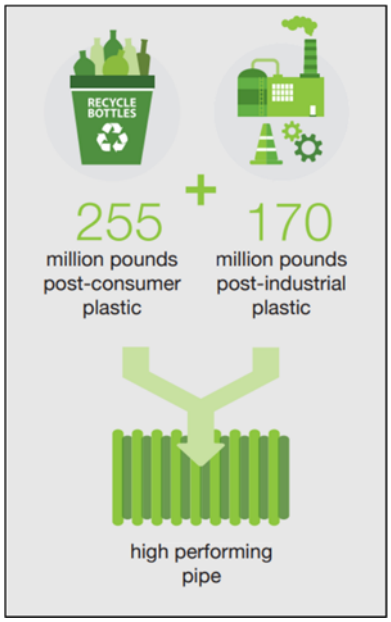
Civil & Environmental Consultants, Inc.

ADS: Utilizing Recycled Plastics into 100 yr Service Life Infrastructure…HDPE Pipe!

In this age of single use containers, throw away societies and plastic oceans, wouldn't it be nice to hear some GOOD news about effective and sustainable use of recyclable plastics? Absolutely – so read on! The plastic pipe industry utilizes hundreds of millions of pounds of recycled High-Density Polyethylene (HDPE - #2 plastics) material in the manufacture of HDPE drainage pipe used across the country and worldwide. ADS alone, a top 3 recycler and the top re-user of recycled HDPE in the nation, integrates over 400 million pounds annually into our pipe products while still exceeding National Performance Standards for plastic pipe. HDPE pipe manufacturers can use your pigmented consumer bottles (think Tide detergent or Heinz mustard) and manufacturing waste (post-industrial) in combination with virgin resins to produce new pipe that can effectively service our infrastructure for 100 years or more, while typical recycling efforts reproduce more consumer products like Tide bottles with about a 6-month to 2-year shelf life. At an approximate 30% HDPE recycling rate across the US – ADS is putting a third of that vicious cycle to work for over 100 years serving our country. The amount going back into recycled Tide bottles is essentially lost after 6 years. Makes you think, doesn't it? Reuse, Reduce, Recycle at its best!



Sustainability is the name of the game these days – make things last, stretch your dollars, preserve our environment, conserve and protect to sustain quality of life – people, planet, profit. Did you know that, compared to Metal, PVC, and Concrete pipe, HDPE pipe generates the least amount of greenhouse gasses in production, disposal or recycling? True! Less impact on production, lower emissions due to lower freight cost (distance and linear feet per truckload) and pulling product from the waste stream and into long term service for national infrastructure desperate for upgrading. It's a win-win-win proposition.

ADS and other members of the Plastic Pipe Institute want to be part of the solutions to lead us into a better, healthier, and more sustainable future. For those that feel that their recycling efforts are a waste of time from reading stories about dried up sources for sale – have hope! There are good things happening and great opportunities to make a difference. Keep recycling, keep doing your part, keep your eyes on the future and let innovation and technology move us into a better and healthier place!

Sandy Camargo
ADS Zone Engineer

Chattanooga's SCM I&M Certification Requirement

Stormwater certifications can be a great way for someone to be quickly recognized as a vetted/tested professional, but they are not always a requirement of local jurisdictions especially when it comes to the inspection and maintenance of post-construction stormwater control measures (SCMs). The City of Chattanooga passed an ordinance in 2019 requiring all post-construction SCM inspectors to be certified by January 1, 2021. "Certification" is a two-class process. Inspectors must attend the City's stormwater introduction course which address why the certification is now required, how to properly complete a quarterly inspection, and what is expected in the submission of a site's annual report. This City course is free and is only 2 hours long. The technical side of the certification is earned by successful completion of the State of TN's post-construction SCM course. This course is 1.5 days of in-class learning and field visits. Attendees must pass a test at the end of the course before a certification number is given. Both the City and the State certifications are good for 3 years before recertification is required.

Visit the City's Water Quality homepage at www.chattanooga.gov/waterquality to get more information.

A Message from our Executive Director

Dear TNSA Members,

COVID-19 has impacted all of us in so many different ways. It is a time for us to come together even during social distancing. Within the U.S., face-to-face meetings have been cancelled and state or local laws have prohibited different size gatherings. For others, the organizers felt that they wanted to contribute to social distancing to slow the spread of COVID-19. Whatever the case, TNSA stands ready to bring our group together for networking and education whether or not we can meet in person.

We understand that you are either working from home, dealing with limited on-hand resources/ employees, or going into the office and worried about keeping your area safe and clean, while still being productive.

In the coming months, we plan to provide you with valuable resources that you have grown accustomed to expect from our association. The delivery mechanisms may be different. Sometimes events like these force businesses to do things differently while still meeting the needs of their members or customers. We hope to exceed your expectations. To this end, we encourage you to provide us with your feedback about what your current and immediate needs are so we can best serve you during this pandemic and beyond.

Know that TNSA is open for business and we are working to keep you informed and exploring ways to educate you during these difficult and uncertain times.

Please feel free to reach out to me with any specific needs you may have.

Stay safe and take care,
Charlene DeSha

TNSA RESOURCES

**** NEW ** Webinars are listed on a new TNSA Website Page**
Link: https://www.tnstormwater.org/webinars

Job Openings are listed on TNSA Website
Link: https://www.tnstormwater.org/job-openings

TNSA Members have access to the Tresorit File Sharing program. Please let Charlene DeSha know if you would like access. Access links were sent out in July 2019 and December 2019.

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.

TENNESSEE STORMWATER ASSOCIATION

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