Meet Janet Ivey—One of our Keynote Speakers at the 2014 TNSA Annual Conference!

Janet Ivey is the creator, producer and host of the public television program "Janet's Planet". Janet's Planet has won 12 Regional Emmys and 5 Gracie Allen Awards, a children's series that focuses on science, space, history and health.

Janet also co-hosts "Tennessee's Wild Side," a magazine format outdoors program in its 20th season. Janet's co-host, Bill Cody, will also share the stage with Janet on September 24 at Henry Horton State Park, kicking off our TNSA Annual Conference!

Janet is committed to enriching the lives of children through multi-media education and programming. She is such a passionate and inspirational motivator. She recently relayed to me the following:

"My real mission in life is to encourage young people to stand in their magnificence and to inspire future generations to use their intelligence and creativity and scientific savvy to take care of each other and our world.

To really get young people and (let's face it...) ANYONE to care about the 18,000 miles of rivers, lakes and streams in Tennessee, we have to give them a hands-on experience with clean-up along a riverbed, or a demonstration of what happens when we don't recycle, don't think about the cleansers, detergents, oils and other synthetic materials that will surely make their way into our drinking supply if we don't ACT.

What I find to be true is that ACTION requires relationship.

Whether we commune with nature, the birds, the fishes, the animals of the forest, we all know that real relationship happens one on one, so we must be willing to mentor and act and inspire those that happen to be in our own periphery.

When you have an experience with something, then you begin to create a relationship out of that experience, and once there's a relationship, then there can be advocacy and action; but first and foremost, we must work hard to provide and encourage experiences with the wild side of Tennessee if we hope to protect our water, our trees, our parks and our natural resources."

We're looking forward to listening to your inspiring words of wisdom, Janet!
Tennessee Healthy Watershed Initiative Announces $458,000 in Funding For New Projects

Five Innovative Projects Designed to Gain Knowledge, Protect, and Improve Tennessee’s Waters

The Tennessee Healthy Watershed Initiative announced today its plans to fund five new watershed improvement and protection projects, with a focus on new innovation and community-based initiatives.

The announced funding of $458,000 is in addition to the THWI’s support for its 11 previously funded projects. With the inclusion of today’s announced funding, the total investment by the THWI in these 16 projects amounts to $1,391,407. Projects will support several strategic investment areas of the Tennessee Healthy Watershed Initiative, and the projects will be implemented across the state beginning August 2014 through December 2016.

"With this latest round of funding, the THWI continues to demonstrate the power of this partnership to advance our stewardship of freshwater resources," said TDEC Commissioner Bob Martineau. “The program has already delivered needed improvements to streams and wetlands across the state, from Memphis to the Clinch River. The five newly funded projects will further our knowledge about healthy freshwater systems and help deliver better water quality to Tennesseans for the future.”

Launched in August 2011, the Initiative is a partnership among the TDEC, the Tennessee Valley Authority (TVA), the Tennessee Chapter of The Nature Conservancy (TNC), and the West Tennessee River Basin Authority (WTRBA). The Initiative’s primary goal is to maintain and improve water resources across the state by bringing together the public, landowners, resource management agencies, and conservation-focused organizations to promote communication, collaboration, and thoughtful water resources planning. “As stewards of the Tennessee River watershed, we recognize the importance of water quality, and we applaud these efforts to improve it,” said Rebecca Tolene, Vice President, Natural Resources and Real Property Services at TVA.

“Maintaining a healthy river system is critical for TVA and directly impacts the quality of life in the Valley. We make more of difference when we work together.”

For the five newly funded projects, the total funding of $458,000 is being matched with in-kind leverage estimated at $527,283. The applicants and projects announced today include:

- **Austin Peay State University (Middle TN, Applicable Throughout)** Determinations of the Currently Unknown Composition and Structure of Algae Assemblages in Middle Tennessee Streams Needed to Document and Monitor the Effects of Water Quality - $20,000 (In-kind Leverage: $155,000)
- **The Nature Conservancy, Virginia Chapter (East Tennessee)** Clinch Powell Clean Rivers Initiative-Enhancing Multi-Agency Coordination for Conservation Impacts Phase II - $100,000 (In-kind Leverage: $166,500)
- **University of Tennessee Knoxville (East Tennessee, Applicable Throughout)** Regenerative Stormwater Conveyances: An Innovative Watershed Management Tool for Tennessee - $113,000 (In-kind Leverage: $168,338)
- **University of Tennessee Knoxville (Applicable Throughout)** Enhancing widespread water quantity and quality control through implementation and dissemination of the Tennessee Runoff Reduction Assessment Tool (RRAT) to assist in the design and evaluation of runoff reduction Low Impact Development (LID) practices - $90,000 (In-kind Leverage: $30,002)
- **West Tennessee River Basin Authority (West Tennessee, Applicable Throughout)** Bailey Fork Creek Floodplain Restoration to Reduce Valley-Plug Expansion and Restore Bottomland Hardwood Forests - $135,000 (In-kind Leverage: $155,000)

To learn more about the Tennessee Healthy Watershed Initiative and for a detailed summary of today’s projects and those funded to date, please visit [https://www.tn.gov/environment/water/water_tnhealthy-watershed-initiative.shtml](https://www.tn.gov/environment/water/water_tnhealthy-watershed-initiative.shtml)

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**FOCUSED ON WATER, FOCUSED ON YOU.**

“The heart of LDA Engineering’s business is stewardship of our most critical natural resource - water.”

Lee Gentry, P.E.

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Pictured in the Belgard Ad is a site located:

**Salvation Army / Kroc Center, 800 East Parkway south Memphis, TN 38104**

**Details:**
- **Design Firm:** Ritchie Smith Associates
- **Scope:** 15000 SF of Aqua Bric Pavers
- **Installed:** Oct/Nov 2012
1. The EPA Office of Wastewater Management is pleased to announce the availability of $335,000 in technical assistance for communities seeking technical support to develop an integrated planning approach to meeting Clean Water Act requirements for municipal wastewater and stormwater management. The primary purpose of the technical assistance is to help EPA develop practical examples of how to implement the different steps in developing an integrated plan in order to provide useful information to communities across the nation who are interested in integrated planning.

Request for Letters of Interest must be received by June 27, 2014, 5:00 p.m. ET. If additional funding becomes available, EPA may return to the applicant pool identified through this request to select additional recipient communities.

2. USDA announces $33M for water quality projects

May 21 – USDA announced it will make $33 million available for improving water quality in 174 watersheds across the nation. Funding will be administered by USDA’s Natural Resources Conservation Service through the National Water Quality Initiative, a three-year program that targets conservation funding to priority watersheds.

3. 2014 EPA Greater Research Opportunities (GRO) Fellowships For Undergraduate Environmental Study

EPA, as part of its Greater Research Opportunities (GRO) Fellowships program, is offering undergraduate fellowships for bachelor level students in environmental fields of study. The deadline for receipt of applications is May 27, 2014, at 11:59:59 PM ET. Subject to availability of funding and other applicable considerations, the Agency plans to award approximately 34 new fellowships. Eligible students will receive support for their junior and senior years of undergraduate study and for an internship at an EPA facility during the summer of their junior year. The fellowship provides up to $20,700 per academic year of support and $8,600 of support for a three-month summer internship.

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**Funding Opportunities**

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**Video: Water Conservation and Green Stormwater Infrastructure Creates Jobs and Opportunity**

2.5 minute video on Water Conservation and Green Stormwater Infrastructure Creates Jobs and Opportunity. From the Metropolitan Sewer District of Greater Cincinnati’s 10th Stakeholder Breakfast and [www.greenforall.org](http://www.greenforall.org)

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**2014 TNSA East Tennessee Development Symposium: Call for Presentations, Sponsors & Exhibitors**

The 2014 East Tennessee Development Symposium (November 4 & 5) will focus on emerging planning, design, and regulatory issues affecting the land development industry. Session proposals built around low impact development design and economics; construction site management; emerging policy and regulatory information; innovative best management practices for during and post construction; case studies and research; and floodplain and drainage way management will be the most successful.

We welcome proposals from land development stakeholders (developers, engineers, surveyors, City/County staff, retailers, lending institutions, legal representatives and State/Federal regulators, etc.)

Please visit our website for more information, sponsorship opportunities, and registration.

If you have any questions regarding the 2014 TNSA East Tennessee Development Symposium, please contact Parci Gibson by phone or email. (865) 215-5861 or parci.gibson@knoxcounty.org

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**Updated! EPA’s online Catalog of Federal Funding Sources for Watershed Protection**

EPA’s online Catalog of Federal Funding Sources for Watershed Protection was recently updated in April 2014 to include the latest information about FY2014 federal funding allocations for programs focusing on watershed protection and restoration. The site houses an easy-to-use, searchable database of 85 programs in which financial assistance sources, including grants, loans and cost-sharing, are available to fund a variety of watershed activities. Information about each funding source includes a program description, details on program contacts, funding history, typical past award amounts, eligibility requirements, application deadlines, and matching funds/criteria requirements. Users can search by keyword, type of assistance, match-requirement, and more. Visit the Catalog website at [www.epa.gov/watershedfunding](http://www.epa.gov/watershedfunding).
Water Policy Report: Advocates Plan MS4 Permit Suits After Justices Uphold Key Stormwater Case

Posted: May 16, 2014

Environmentalists are renewing their focus on challenging municipal stormwater permits as a way to drive stormwater retention requirements after the Supreme Court let stand a ruling in a high-profile enforcement action holding a county stormwater agency strictly liable for all stormwater pollution at its monitoring stations regardless of the pollutants’ origin.

The Supreme Court May 5 denied a petition from local government agencies to review Los Angeles County Flood Control District, et al. v. Natural Resources Defense Council (NRDC), allowing the long-running case to enter the remedy phase.

Environmentalists say they plan to seek stormwater controls in judicial and administrative venues to renew arguments that permit writers are required by the Clean Water Act (CWA) to set retention standards in MS4 discharge permits.

"With a trove of 21st century green infrastructure solutions, the county has no excuse not to ensure this pollution is addressed immediately," NRDC’s Steven Fleischli said in a press release after the high court’s rejection of the Los Angeles case. The Supreme Court in the Los Angeles case rejected the flood control district’s claims that the U.S. Court of Appeals for the 9th Circuit misinterpreted the permit at issue, ending a years-long dispute over whether any single entity could be held liable for high pollution levels in the MS4 that Los Angeles shares with dozens of upstream municipalities.

With liability established, the attorney says, NRDC and its allies will argue that the CWA mandate for MS4s to reduce pollution at their monitoring stations regardless of the pollutants’ origin.

"There’s a lot of advocacy in different states on this. . . . We have basically put them on notice that these issues need to be dealt with,” says an environmentalist attorney. The attorney says environmentalists see the remedy phase of the Los Angeles suit, along with still-pending challenges to other permits, as venues to renew arguments that permit writers are required by the Clean Water Act (CWA) to set retention standards in MS4 discharge permits.

Halls High School is first Knox County School approved for a rainwater harvesting system

Rainwater Resources is pleased to announce Halls High School as the first Knox County School approved for a rainwater harvesting system! We are excited to partner with Halls High School on this project.

The system is a project of the Beaver Creek Watershed Association, an alliance of 21 agencies, institutions and utilities now in its 15th year of cooperation to improve and protect the creek’s 86 square mile drainage.

Halls High School is located on the banks of Beaver Creek and already the site of an outdoor classroom focused on watershed conservation.

System Description - Rainwater Harvesting System supplies potable water for greenhouse plant watering and student scientific rainwater related studies. Due to the use of spray watering, water is treated with UV light to potable water standards with automatic shut-off safeties in place in the event of a power outage.

Catchment - Catchment area is 1/2 of the outdoor classroom building and greenhouse roof. Total catchment area = 1080 sq. ft.

Tank size - Water storage is a 1550 gallon storage system located on a slab to the west of the greenhouse.

Components – System is designed using Rainwater Resources’ 11-Step Sustainable System. This system will provide an odor free, slime free, tank with very little maintenance requirements.

Average Annual Collected Rainfall – Roughly 34,000 gallons of water.

Our 11-Step Sustainable System will provide odor free, slime free water taken from the greenhouse roof with very little maintenance requirements and put that water back into the greenhouse as controlled irrigation.

Project contributor Ruth Anne Hanahan, Senior Research Associate, Tennessee Water Resources Research Center, Institute for a Secure and Sustainable Environment at University of Tennessee –Knoxville said, "Rainwater harvesting, as part of an array of responses to reduce stormwater runoff, is of great interest to community leaders."

Halls High School is located on a 30 acre campus at 4321 Emory Road, Knoxville, TN 37938. http://www.rainwaterresources.com/halls-high-school-outdoor-classroom

"Rain water harvesting, as part of an array of responses to reduce stormwater runoff, is of great interest to community leaders."

- Ruth Anne Hanahan, UT-WRRC
**Training Opportunity:** Meeting a portion of your MS4 Minimum Measure # 6: “Good Housekeeping”

John Chlarson with UT-MTAS has acquired ExCal Visual LLP’s Training video “Rain Check – Stormwater Pollution Prevention for MS4s” and is available to show it to Municipalities and conduct a pre- and post- test, as well as document employee attendance and participation.

Section 4.2.6 of the MS4 permit states that the MS4 must develop and implement an operation and maintenance program that has the ultimate goal of preventing or reducing pollutant runoff from municipal operations. The program must include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance.

**Summary of the Video:** One element of the MS4 permit is preventing stormwater pollution by municipal facilities such as fleet maintenance shops, bus barns, sanitation facilities, parks and street sweeping operations. “Rain Check - Stormwater Pollution Prevention for MS4s” shows municipal employees how to practice good housekeeping, spill response, materials management, vehicle fueling and washing and the other Best Management Practices (BMPs) profiled in the U.S. EPA’s “National Menu of BMPs”

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**2014 Governor’s Environmental Stewardship Awards Announced**

Friday, May 16, 2014—TDEC

Tennessee Gov. Bill Haslam and Environment and Conservation Commissioner Bob Martineau announced the winners of the 2014 Governor’s Environmental Stewardship Awards today. The 11 winners will be recognized for their achievements and positive impact on the state’s natural resources in an awards ceremony to be held in Nashville on June 23.

“Today’s announcement celebrates Tennesseans who are committed to our environment,” Haslam said. “Recognizing these innovative efforts that help conserve and protect our natural resources is important in keeping our communities strong and economically viable. I am proud to work alongside each and every one of the winners announced today.”

The Governor’s Environmental Stewardship Awards program recognizes exceptional voluntary actions that improve or protect our environment and natural resources with projects or initiatives not required by law or regulation. In its 28th year, this year’s awards program covers nine categories: Building Green; Clean Air, Energy and Renewable Resources; Environmental Education and Outreach; Environmental Education and Outreach (school category); Land Use; Materials Management; Natural Heritage; and Sustainable Performance.

The 2014 awards roster includes one Pursuit of Excellence Award, which recognizes past award winners who continue to demonstrate a high regard for environmental stewardship practices. The winner of one additional honor, the Robert Sparks Walker Lifetime Achievement Award, will be announced at the awards ceremony in June.

A panel of 21 professionals representing agricultural, conservation, forestry, environmental and academic professionals judged more than 75 nominations and selected this year’s award recipients based on criteria including on-the-ground achievement, innovation and public education.

“It’s important that we recognize the people and organizations that work so hard to protect our environment, while also teaching others about sustainability,” added TDEC Commissioner Bob Martineau. “The better we take care of our environment, the better our quality of life, which directly impacts how Tennesseans live, work and play.”

The 2014 Governor’s Environmental Stewardship Award winners are:

- **Category: Excellence in Building Green:** Crash Pad Hospitality (Hamilton County)
- **Category: Excellence in Clean Air:** City of Kingsport (Hawkins and Sullivan Counties)
- **Category: Excellence in Energy and Renewable Resources:** Whites Creek High School (Davidson County)
- **Category: Excellence in Environmental Education and Outreach:** Boone Watershed Partners (Carter, Sullivan and Washington Counties)
- **Category: Excellence in Environmental Education and Outreach/ Schools:** Jackson Madison County (Madison County)
- **Category: Excellence in Land Use:** J.A. Street & Associates, Inc. (Sullivan County)
- **Category: Excellence in Materials Management:** Cormetech, Inc. (Bradley County)
- **Category: Excellence in Natural Heritage:** CRJA-IBI Group – High Ground Park (Knox County)
- **Category: Excellence in Sustainable Performances:** Bridgestone Americas: Tires4Ward Program (Davidson County)
- **Pursuit of Excellence Recognition:** Chattanooga Airport: Pursuit of Excellence (Hamilton County)
tion in stormwater discharges "to the maximum extent practicable (MEP)" effectively requires stormwater retention in most areas, because the technology has been shown to be "both practical and effective" as a way to control pollution.

Environmentalists are focusing on permit-by-permit litigation to establish retention standards after EPA has twice rejected regulatory measures that would have established regional or national requirements. The agency’s "post-construction" rule for stormwater runoff was expected to set retention standards for all new construction and redevelopment, but EPA has indefinitely shelved the rulemaking effort (Water Policy Report, March 24).

At the same time, NRDC and other groups petitioned the agency to use its rarely exercised residual designation authority to require property owners to add stormwater retention capacity through retrofits at thousands of commercial and industrial developments, but officials in three EPA regions largely rejected the requests, leaving federal regulators with few, if any, new regulatory tools to curb runoff beyond site-specific enforcement agreements and MS4 permits (Water Policy Report, March 24).

"States have an obligation in each permit to determine what is the maximum extent practicable, and states have been doing that. They haven’t all been doing it, and that’s why there’s the need for a rule. But if EPA isn’t going to do a rule, we are going to keep seeing permits that are illegally lax," the attorney says.

Advocates on all sides are likely to see more chances to litigate the issue in the near future, because a large segment of municipal stormwater permits are due for replacement. According to a March 20 presentation by Holly Galavotti, of EPA’s Office of Water, 26 percent of permits issued under the agency’s phase I stormwater rules are expired, as are 48 percent of general permits issued under the phase II stormwater rules.

The next arena for litigation over MS4 permit policy is likely to be NRDC v. New York State Department of Environmental Conservation, a challenge to a state-issued general permit for small MS4s that is currently pending before the New York Court of Appeals, New York’s highest civil court.

NRDC is asking judges to impose strict monitoring requirements and discharge limits in the permit, as well as to require on-site retention to control runoff -- which the state currently recommends, but does not mandate, through its stormwater management handbook.

Similarly, in a Feb. 4 petition asking New Jersey to revise its general stormwater permits, NRDC argues that permit-holders should be required to reduce stormwater runoff to pre-development levels, if not to even more stringent standards.

"In many cases, replicating pre-development hydrology may not even be sufficient to protect water quality, because even if the post-development runoff volume is the same, it will carry more pollutants than the same amount of runoff from undeveloped land in a natural state," the petition says.

The arguments echo environmentalists’ claims in an amicus brief to EPA’s Environmental Appeals Board, where NRDC and other groups supported the agency’s authority to include a “pre-development” standard in MS4 permits for Department of Defense (DOD) installations in Colorado and Washington state. The case, In re: Buckley Air Force Base, has been stayed until June 30 while EPA and DOD work out implementation of a settlement agreement, averting a ruling that could have set a new precedent on whether the agency can set strict stormwater retention mandates in permits for municipal storm sewers (Water Policy Report, May 5).

But industry groups, led by the National Association of Home Builders, have countered that regardless of the MEP standard, EPA has no authority to require stormwater retention because it can only regulate the discharge of pollutants, and not the discharge of stormwater itself. -- David LaRoss

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**TNSA Compiling Comments on Tennessee’s TMSP Permit Re-Issuance**

Tennessee’s TMSP General Permit recently expired (May 14, 2014). TDEC will begin working on the draft re-issuance in the near future.

Please send me (Jennifer@tnstormwater.org) any comments you would like addressed during the drafting of this permit. I will compile these comments into a single document and send it on behalf of TNSA to the Division of Water Resources.
Upcoming Events

Please email Jennifer Watson with your upcoming events:

MAY

May 28 - EPA Hosts Webinar for Water Utilities on Financing Climate Adaptation (1:00-2:15 p.m. ET)
EPA’s Climate Ready Water Utilities Initiative will host a webinar on how different water utilities around the country are effectively financing and implementing adaptation strategies. Register

May 29 - River Talks, Cumberland River Compact, Nashville (See Below) Four Years Later-the 2010 Flood and What We’ve Learned

May 29 1:00-2:00 PM - American Rivers Dam Removal Presentation: Room 405 of the John D. Tickle Engineering Building, University of Tennessee. Erin Singer McCombs, Associate Director of Southeast Conservation, American Rivers, will present on dams and dam removal. Erin will cover an overview of dams, how dams affect streams, how to approach a dam removal project, and finally, dam removal case studies from the Southeast. General steps for a dam removal will be covered including initial reconnaissance, site visits, planning meetings, fundraising, design and engineering, community outreach, permitting, project implementation, and monitoring. This presentation is appropriate for a wide variety of disciplines including but not limited to students, faculty, and individuals in engineering, ecology, biology, nonprofits, natural resource management, state and federal agencies, or just the plain curious.

JUNE

June 3 - Hamilton County, Cleveland, & Bradley County Project WET Training 8:00AM -4:30 PM Registration: EVENTBRITE, Password: WET

June 3 -Western Region TNSA Meeting is scheduled at 1:30 PM June 3, 2014 at the City of Bartlett City Hall Annex Conference Room, 6382 Stage Road, Bartlett TN 38134-3799

June 4 - Cookeville Public Works APWA/TNSA quarterly meeting of the middle Tennessee chapters, lunch is provided, for information and to RSVP, call Sherry Montgomery at (615) 851-3460 by June 1, 2014. Updates from TDEC, TNSA, APWA, and the retrofitting of a former Ford dealership into a city’s Public Works facility. Green Infrastructure implementation and water quality improvements will be highlighted. Following lunch we will tour the facility.

June 4&5 - TNEPSC Level II: Two days Knoxville – Rothchild Conference Center, 8807 Kingston Pike

June 7 - 12th Annual Catfish Rodeo Lake Sevier, Shelby Park. Presented by: Cumberland River Compact & Tennessee Wildlife Resources Agency Schedule of Events The Rodeo is free and open to the first 600 registered juniors aged 5-16. A fishing license is not required.

June 9 - 10AM-2PM Southeast TNSA Regional Meeting. Location: Enterprise South Nature Park (8015 Volkswagen Drive, Chattanooga, TN 37421) Volkswagen Group of America has developed a great education program around a wetland area on their site. They’ve offered to take us on a tour of this pristine wetland, which is available to school groups, as our afternoon outing. Please plan to bring a pair of boots for an afternoon hike. We’ll have bottled water and sunscreen. Bring a cam-era. The views are breathtaking. Lunch will be provided, please indicate in your RSVP if you have dietary restrictions. Leah Crisp at leahc@hamiltontn.gov 423-209-7857

June 10 - Recertification Course (4 hour course with am session only) Bartlett Performing Arts Center, 3663 Appling Rd

June 14 10-12PM Rain Barrels Workshop. Church of the Good Shepard, 5337 Jacksboro Pike Knoxville, TN Cost is $40 per barrel; advance registration required; payment due day of workshop (cash or check only). Please contact Parci Gibson, Knox County SW Management Stormwater@knoxcounty.org; 865-215-5861

June 23 - Sumner County / Wilson County Stormwater Group monthly meeting in Gallatin. 11:30 a.m. We will have a guest speaker from the legal field joining us. Lunch on your own. Call Amy Murray for more information at (615) 859-2740.

City of Kingsport Presents Stormwater Management Award to Littlejohn Engineering

On April 15, 2014, the City of Kingsport presented its first annual Stormwater Management Award to Littlejohn Engineering, Associates, Inc. who used rain gardens to mitigate runoff from the parking lot of a new Burger King franchise.

This location was a narrow, space-challenged site that demonstrated how 4 bio-retention areas (rain gardens) can be strategically located so as not to deter parking while complying with stormwater quality and contributing to landscape requirements.
**Tennessee Stormwater Association**

**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.

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**Solar Powered Water Wheel Trash Interceptor**

*Baltimore’s Solar-Powered Water Wheel Can Devour 50,000 Pounds*

After a successful prototype and securing the support of the Waterfront Partnership of Baltimore, the world’s first Water Wheel was constructed in just seven months with a crew of less than four men.

Every year, stormwater runoff carries tons of trash and debris from the streets and streams of the Jones Fall watershed down into the mouth of the Jones Falls stream and out into the Baltimore Harbor. "I was tired of always hearing tourists say ‘ugh, this harbor’s disgusting,’" says Water Wheel co-founder John Kellett. "I thought, ‘there’s got to be a better way than collecting trash on our front doorstep.’"

After a successful prototype and securing the support of the Waterfront Partnership of Baltimore, the world’s first Water Wheel was constructed in just seven months with a crew of less than four men.

Here’s how it works: two orange booms help funnel debris towards the Water Wheel, where spring-loaded leaf rakes intercept the trash and push it onto a moving conveyer belt which empties out into a 16 yard dumpster, located on top of a floating dock. Once the dumpster is full, the dock is detached, hooked up to a boat, and then taken to a RESCO waste-to-energy plant, where the trash is incinerated and turned into electrical energy. The solar-powered pumps move 20,000 gallons of water an hour onto the rotating waterwheel that turns the conveyer belt.

In addition to cleaning up the harbor, the Water Wheel also provides other benefits. The constant rotation of the waterwheel puts much needed oxygen back into the water, helping to attract schools of fish and improve habitat conditions and water quality. The trash collector also removes organic waste, which if left to decompose, causes oxygen depletion and releases ammonia.

As a project of the Healthy Harbor Living Laboratory, the Water Wheel also serves to educate people about stormwater management and the Inner Harbor.

"Baltimore will soon pass a trash TMDL (total maximum daily load) or ‘pollution diet,’ that will legally require the city to remove a certain amount of trash from the water bodies a year," says Adam Lindquist, Healthy Harbor Manager. “Our hope is to put the Water Wheel out of business.”

While the Water Wheel will be a permanent fixture of Baltimore for now, there are talks of adding another one to the mouth of Washington D.C.’s trash-clogged Anacostia River. You can check out more pictures of the amazing Water Wheel in our gallery!

Video of Water Wheel in operation on May 16, 2014: [https://www.youtube.com/watch?v=v5l7s6wC50g&feature=youtu.be](https://www.youtube.com/watch?v=v5l7s6wC50g&feature=youtu.be)