



THE FLOW OF... TRASH FREE WATERS

ISSUE 17

INSIDE THIS ISSUE

TFW Program Icon.....	1
Bringing Reusable Foodware to Four U.S. Cities	1
Transforming U.S. Waste Management Through Bipartisan Infrastructure Law Grants.....	1
The Long Island Sound Marine Debris Action Plan.....	2
EPA Gulf of Mexico Division Trash Free Waters Awards	2
EPA Long Island Sound Study Report to Congress	3
Assessing Microplastics in Freshwater Urban Watersheds	3
Barneget Bay Outreach	4
Puerto Rico Marine Debris Strategic Plan.....	4
Trash Capture on the Delaware and Schuylkill Rivers	5
Long Island Sound Futures Fund 2022 Grant Slate	5
EPA-CEC Marine Litter Project in the Quad Cities.....	6
South Atlantic Strategy Resources	6
Reduction and Prevention of Trash in Texas.....	7
Sustainable Materials Management Along the Mississippi.....	8
New and Forthcoming Resources and Publications.....	8
In The News	10

This newsletter is intended to provide the latest information to all of our Trash Free Waters (TFW) partners and friends.

The Flow...of Trash Free Waters is our opportunity to highlight recent successes, as well as shine a spotlight on news and other related items. It is produced by the U.S. Environmental Protection Agency, with support from IEc. Mention of commercial products, publications, or Web sites in this newsletter does not constitute endorsement or recommendation for use by EPA, and shall not be used for advertising or product endorsement purposes.

HOW'S IT FLOWING?

Announcing the TFW Program Icon!

The TFW team is happy to announce the creation of our program icon. This icon has a simple and streamlined design while still evoking the connection between trash and our waterways. We plan on adding this design to our documents, project signage, and other resources in the future to let the public know what we are involved with, socialize our mission to prevent

trash from getting into our waterways and remove trash that is already in the environment, and remind people to be good stewards to help achieve this mission. TFW project partners should contact TFW National Program Lead Romell Nandi at nandi.romell@epa.gov if you are interested in using the new TFW icon on your materials.



The new TFW program icon.

Bringing Reusable Foodware to Four U.S. Cities

The TFW program has recently embarked on a partnership with the NGO [Perpetual](#) to help bring an immersive reuse experience to four select cities. This initiative will offer local municipalities the resources and expertise required to effectively design and implement reusable foodware systems citywide. Dozens of small-scale reuse pilot programs have been implemented across the country in recent years, but no single U.S. city offers reuse across all food service providers. A key goal of this initiative is to show proof of concept – that reuse systems can minimize environmental impacts from single-use plastic items while also being safe, aligned with city planning, equitable and accessible for users.

In the coming months, we will collaborate with leading marine debris and plastics researcher, Jenna Jambeck and her team in the New Materials Institute at the University of Georgia to conduct a [Circularity Assessment Protocol \(CAP\)](#) in each of the four cities. The findings of this research will help provide a deeper understanding of the potential systems contributing to plastic waste leakage into the local environment. This protocol has already been used to empower communities in ten countries and twenty-six cities around the world. In the new year, project partners plan to host in-depth discussions in each of the four partner cities to make stakeholder-driven decisions regarding system design logistics, ownership, packaging product types, and more.

Transforming U.S. Waste Management Through Bipartisan Infrastructure Law Grants

The Bipartisan Infrastructure Law provides unprecedented funding to support state and local waste management infrastructure and recycling programs and help meet Congress' goal to create a stronger, more resilient, and cost-effective U.S. municipal solid waste recycling system. In December 2022, EPA's Office of Resource Conservation and Recovery (ORCR) announced the availability of \$100 million in funding for the first year of grants for recycling infrastructure and other circular economy projects (the "Solid Waste Infrastructure for Recycling" or "SWIFR" grants) as well as for recycling education and outreach projects across the country. *(continued on p.2)*

HOW'S IT FLOWING?

(continued from p.1)

For SWIFR, \$30 million has been made available to support projects under the [SWIFR Grant Program for States and Territories](#) to improve solid waste management planning, data collection, and program implementation. An additional \$40 million will go towards funding [SWIFR Grant Program for Political Subdivisions](#) projects that improve materials management and infrastructure, including collection, transport, systems, and processes related to post-use materials that can be recovered, reused, recycled, repaired, refurbished, or composted. The deadline for political subdivisions to apply to the latter program is February 15, 2023. EPA plans on reviewing and evaluating applications and awarding grants by Summer/Fall 2023.

The [Consumer Recycling Education and Outreach Grant Program](#) will provide \$30 million in funding for projects to improve consumer education and outreach on waste prevention, reuse, recycling, and composting to reduce waste generation, decrease contamination in the recycling stream, and increase recycling rates across the country in an equitable manner. The deadline for applications is February 15, 2023. Award decisions will be made by Summer/Fall 2023.

Early in 2023, EPA will release an additional SWIFR funding opportunity for federally recognized tribes (including Alaskan Native Villages) and intertribal consortia. This funding will be to help to develop or update plans focused on encouraging environmentally sound post-consumer materials management; establish, increase, or expand materials management infrastructure, and identify, establish, or improve end-markets for the use of recycled materials.

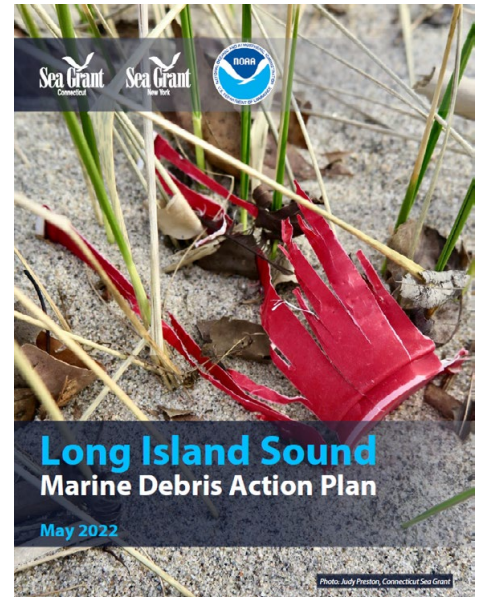
REGIONAL PROJECT SUCCESSES

The Long Island Sound Marine Debris Action Plan

The [Long Island Sound Marine Debris Action Plan](#) was published in May 2022. Led by Connecticut and New York Sea Grant, and funded by National Oceanic and Atmospheric Administration, the plan represents a comprehensive framework of strategic actions to mitigate the impacts of marine debris in Long Island Sound over the next five years (2022-2027). LISS memorialized the need to develop a comprehensive marine debris reduction plan in the 2020-2024 Comprehensive Conservation and Management Plan (CCMP) Update. The action plan is organized under three main goals:

1. Understand, Prevent and Mitigate the Impacts of Single-Use Plastic and Other Water/Land-based Consumer Debris;
2. Understand, Prevent and Mitigate the Impacts of Abandoned and Lost Fishing/Aquaculture Gear; and
3. Understand, Prevent and Mitigate the Impacts of Microplastics and Microfibers.

Long Island Sound stakeholders, including LISS partners, played an active role in the development of the plan by participating in workgroups related to each goal. Over 24 months, the workgroups met to discuss the goals, strategies, and actions that should



Cover of the 2022 Long Island Sound Study Marine Debris Action Plan.

be memorialized in the plan. After the development of the actions, stakeholders volunteered as leads and partners for each action. Over the next five years, tracking and monitoring of identified actions will help assess collective progress in decreasing marine debris pollution and its impact on Long Island Sound.

EPA Gulf of Mexico Division Trash Free Waters Awards

In 2022, EPA's Gulf of Mexico Division awarded \$3.48 million to support Trash Free Waters projects through the Healthy & Resilient Gulf of Mexico: Preventing More, Picking Up Less Request for Applications. This funding opportunity sought innovative projects focused on utilizing partnership expertise to prevent trash from reaching waterways. Here are the projects that were funded:

- Eckerd College (\$499,638) - Communities Count: Single-Use Plastic Data to Change Policy
- Mississippi State University (\$499,858) - Incentivizing and empowering communities to reduce litter
- City of Fort Myers (\$87,640) - City of Fort Myers Trash-Free Waters Program
- City of Tampa (\$500,000) - Trash Free Tampa Bay
- Clean Memphis Organization (\$485,559) - Targeted Source Reduction: Public Schools & Public Places in Memphis
- LSU (\$499,852) - A Multi-Pronged Approach to Trash Free Watersheds in Baton Rouge
- Coastal Bend Bays and Estuaries Program Inc. (\$406,377) - Up2U PLUS: Using an Empowering Anti-litter Message to Prevent Dumping
- Mississippi Rivers Cities and Towns Initiative (\$499,757) - A Community Driven Approach to Trash Free Waters in St. Louis

REGIONAL PROJECT SUCCESSES

EPA Long Island Sound Study Report to Congress

The Long Island Sound Study (LISS), established under Sections 320 and 119 of the Clean Water Act (CWA), is one of the inaugural EPA National Estuary Programs. First developed in 1994, the LISS issued a revised Comprehensive Conservation and Management Plan (CCMP) in 2015, which is organized around four major themes:

1. Clean Waters and Healthy Watersheds;
2. Thriving Habitats and Abundant Wildlife;
3. Sustainable and Resilient Communities; and
4. Sound Science and Inclusive Management.

The plan also sets 20 quantitative ecosystem targets to drive progress.

The study area of LISS is shared by the Long Island Sound Office (LISO) – an EPA Geographic Program – who took the lead in developing the LISS “Report to Congress 2022: Returning the Urban Sea to Abundance,” to inform Congress about progress made during the 2020-2021 period in implementing CCMP goals and to identify

next steps in addressing gaps in the program and restoring the health of Long Island Sound. The LISO worked jointly with LISS core program staff, as well as representatives from the New York State Department of Environmental Conservation, Connecticut Department of Energy and Environmental Protection, New England Interstate Water Pollution Control Commission (NEIWPCC), and Connecticut and New York Sea Grant, to gather, synthesize, and communicate progress in the form of success stories.

Under the Sustainable and Resilient Communities theme, LISS highlights the progress made on the Marine Debris Ecosystem Target – to decrease the mass of debris in the Sound by 2035. Progress on the target is evaluated by the amount of trash collected per Sound shoreline during the fall International Coastal Cleanup, compared to the 2013 baseline of 475 pounds collected per mile. Currently, the achievement of this ecosystem target is on-track; the current five-year running average (2017-2021) in the mass of trash collected is 141 pounds per mile, a 70

percent decrease from the baseline showing the amount of trash along the shoreline is going down.

LISS also used the Ocean Conservancy’s Trash Information and Data for Education and Solutions database to find a significant decrease in the number of plastic bags collected per mile during coastal clean-ups. Over the past five years, the number of plastic bags collected has decreased by 93 percent, from 106.4 plastic bags per mile in 2013 to 7.9 in 2021. This decline coincides with various plastic bag bans implemented in New York and Connecticut municipalities.

The transmittal to Congress, scheduled for December 2022, will showcase these achievements to demonstrate the importance of the program and therefore continue to support and increase funding in the future. After the transmittal of the Report to Congress, LISS will upload the report on their website: <https://longisland-soundstudy.net/>.

Assessing Microplastics in Freshwater Urban Watersheds

The main goal of this joint research project is to identify, quantify, and characterize microplastics present in urban freshwater areas in states falling within the areas of EPA Regions 3 and 7. Pilot microplastic water sampling was completed along the Missouri River after developing an EPA Office of Research Development (ORD)-approved standard operating procedure. Samples were then shared with ORD, where ColSpec Stereo Microscopes, Flow and Spectral Flow Cytometry, and LIDAR were used for imaging and analysis. Microplastics were detected in all five initial samples.

On September 14, 2022 another sampling event was conducted at ten sites in urban areas along the Missouri River, Blue River, and Kansas River. The samples were collected along 36.5 total miles of water to test for microplastics upstream and downstream of wastewater treatment discharge sites during a low-flow event. Project partners are awaiting results from the ORD analysis. Another round of microplastic sampling took place in October 2022 during a high-flow event.



Microplastics sampling along the Missouri River.

REGIONAL PROJECT SUCCESSES

Barnegat Bay Is Worth More Than One Use



Digital billboard ad displayed on a boat.

The reuse outreach campaign, “Barnegat Bay is Worth More Than One Use,” took place from June to September 2022 and was rolled out in the Barnegat Bay Partnership (BBP) study area – one of 28 National Estuary Programs – thanks to support from TFW. The primary goal of this initiative was to educate residents and visitors about reusable substitutes for single-use packaging and encourage behavioral changes to reduce intentional and unintentional litter that flows into Barnegat Bay, harming aquatic life, polluting the water, persisting in the environment, and spoiling recreation. This message was conveyed through the use of a radio public service announcement, social media posts, posters in English and Spanish, and a digital billboard ad displayed on a boat.

BBP has already decided to rerun the campaign in the summer-fall of 2023 using lessons learned from year one of the campaign. TFW will eventually develop a summary report on the details of the campaign, including results, and publish that report on the TFW website.



Campaign poster outlining how to care for Barnegat Bay by bringing your own cup/bottle/bag.

Puerto Rico Marine Debris Strategic Plan

In 2022, EPA Region 2’s TFW team partnered with the NOAA Marine Debris Program to host a workshop to develop a Marine Debris Strategic Plan for Puerto Rico. The NOAA Marine Debris Program has developed Marine Debris Action Plans for 14 geographical regions in the U.S. These plans provide a strategic framework for partners across a specific state or area to address the problem of marine debris. Puerto Rico’s plan is the first plan that will be co-led between NOAA and EPA’s TFW Program and will incorporate stakeholder priorities on aquatic trash.

EPA and NOAA hosted their first collaborative workshop in June to establish Strategic Plan priorities and action items. A joint multi-day workshop was later held from Dec 5-9th to further flesh out specific actions related to marine debris prevention, removal and disposal, and emergency response and to get feedback on what has currently been written for the Puerto Rico Marine Debris Strategic Plan. Around 50 different stakeholder groups representing non-government organizations, partnership organizations, the private sector, Puerto Rico’s Central Government Offices, and federal agencies were invited to attend. NOAA and EPA plan to synthesize the information gathered during this winter workshop into an updated draft of the Marine Debris Action Plan for Puerto Rico for release in 2023.

REGIONAL PROJECT SUCCESSES

Trash Capture on the Delaware and Schuylkill Rivers

In Spring 2022, the EPA Region 3 TFW team launched a partnership with an Australian tech start-up company, Seabin Project, and the Partnership for the Delaware Estuary (PDE) to install a network of floating trash capture devices called Seabins™ in the Delaware River watershed. TFW provided funding to support this pilot project encompassing litter removal, data collection, trash monitoring, and water quality monitoring. Seabin Project, which is the company that manufactures and sells Seabins, provides hardware and technical support for the installation, maintenance, and monitoring of the Seabins. PDE supports project implementation, including public outreach and education efforts associated with this project.

The project involves a six-month field pilot study in which five Seabins were deployed – three on docks at the Pier 3 Marina on the Delaware River in Center City Philadelphia and two at Bartram’s Garden on the Schuylkill River in Southwest Philadelphia. Devices have been in the water, running 24 hours a day, seven days a week, since May 3 and were recently pulled out due to the winter season. Every day, Seabin environmental technicians weighed the debris each

device captured. Seabin and EPA staff then sorted and categorized the collected trash. Macro debris was grouped into categories including food packaging, tobacco products, balloons, plastic bags, and foam. Seabins also collected microplastics as small as 2 millimeters in size, including pre-production plastic pellets (nurdles), hard plastic fragments, small pieces of foam, and microfibers found sticking to organic material. From May to July, the three devices at Pier 3 Marina captured more than 2,500 pounds of marine litter. Among that debris were 139,310 pieces of plastic. Of that, 108,333 pieces were microplastics.

This initiative supports the project partners’ efforts to establish clean water and healthier communities, with a focus on how this issue affects the watershed’s most vulnerable populations. During a press event, Adam Ortiz, EPA Mid-Atlantic Regional Administrator shared “Partnerships like this lead to innovation and accelerate progress... Not only is it [this device] pretty cool to watch, but the monitoring and maintenance of the devices can create jobs in public works and sciences.” As the project continues, the project champions hope to engage local



A Seabin Environmental Technician fishes out a device from the Delaware River in Philadelphia during a demonstration in June.

communities to educate them about litter and aquatic trash. Local community members and students have the opportunity to get involved in the data collection process by contacting hayden@seabinproject.com.

Long Island Sound Futures Fund 2022 Grant Slate

In mid-December 2022, top federal and state environmental agencies and officials from New England and New York, including the National Fish and Wildlife Foundation (NFWF) and the U.S. Fish and Wildlife Service (FWS), announced [41 grants totaling \\$10.3 million](#) to organizations and local governments to improve the environment of Long Island Sound. The grants are matched by \$5.8 million from the grantees themselves, resulting in \$16.1 million combined total funding for conservation projects in New York, Connecticut, Massachusetts, New Hampshire, and Vermont. In all, these Long Island Sound Futures Fund

2022 grants will reach 319,000 people through environmental education programs. Water quality improvement projects will prevent 5.3 million gallons of polluted stormwater from flowing into Long Island Sound waters. The projects will also remove 8,000 pounds of marine debris from multiple towns in New York and Connecticut bordering the Sound. Several funded projects will expand marine debris education for students in the Long Island Sound watershed. One initiative, “Plastic Avengers: Education, Arts, and Action for Students in a Community of Long Island Sound” will deliver classroom and field-

based studies for middle and high school schools in tandem with stewardship activities and events for the community in the Bronx, New York. The project will build awareness about the impacts of plastic pollution and climate change on the health of Long Island Sound and its communities. Another project involves beach cleanups in multiple Sound communities, and a third involves educating students in Groton and New London, CT about the nature of plastic pollution and effective ways from keep it out of the environment.

REGIONAL PROJECT SUCCESSES

EPA-CEC Marine Litter Project in the Quad Cities

In 2022, EPA embarked on a Marine Litter Project with the Commission for Environmental Cooperation to prevent marine litter by demonstrating, educating, and communicating about the flow of marine litter from inland communities to the marine environment. The city of Davenport, Iowa was selected as one of three North American sites for this pilot project, the others including Sumidero Canyon National Park near Tuxtla Gutierrez in Mexico, and Rideau Canal in Ottawa, Canada. As a part of this initiative, a company called the Osprey Initiative installed four "Litter Gitter" trash capture devices in three different Davenport creeks in Summer 2022. Throughout the fall, the Osprey Initiative maintained and collected data from the devices. In October, project partners joined forces with Xstream Cleanup and the Mississippi River Cities and Towns Initiative (MRCTI) to host a community cleanup and data collection event. The next phases of the project will



Osprey Initiative installing a litter boom in a local Davenport creek.

include citizen science engagement and community workshops to raise public awareness of the impacts of land-based

sources of litter. Each of the three project sites will also create a local action plan for addressing trash in their community.

South Atlantic Strategy Resources

As discussed in the [May 2022 issue of the Flow](#), in 2021-2022, the TFW program at headquarters and EPA Region 4 hosted a series of workshops that eventually led to the development of the [South Atlantic Strategy](#) (SAS) to address trash loadings into waterways in North Carolina, South Carolina, and the eastern regions of Georgia and Florida which drain into the Atlantic Ocean.

During stakeholder engagement meetings, limits to funding and capacity were repeatedly mentioned as a key challenge and barrier to addressing aquatic trash pollution in the southeast. As a result, EPA has now developed a [SAS Funding Compendium](#). This tool outlines over 90 funding opportunities which can be filtered by source (federal, state, nonprofit, commercial, etc.), applicable location (nationwide, regional, or state), award size, and relevant SAS goal. The intention behind this

tool was to help regional stakeholders access a broader range of potential funding opportunities to support SAS implementation. This funding compendium is a living document that will be updated periodically so be sure to check back occasionally for new grants.

During the Summer 2022 workshops, participants also expressed interest in a SAS Online Implementation Tool as an opportunity to learn from one another and to keep track of projects being implemented in the southeast in alignment with the SAS. EPA has since established the framework for this tool and is now soliciting project information from partners so their efforts can be characterized in this resource and made publicly available. This database will feature SAS project information including relevant SAS action number, project champion name and contact info, a short project description, and eventually

Grant Source/ Agency	Program/Grant Name	Grant Type	Federal/ State/ Private	Possible Award Size
EPA	Solid Waste Infrastructure for Recycling - State and Territory Grant Program	Government	Federal	TBD
EPA	Solid Waste Infrastructure for Recycling - Political Subdivisions Grant Program	Government	Federal	\$500,000
EPA	Solid Waste Infrastructure for Recycling - Tribes and International Consortia Grant Program	Government	Federal	Under \$500,000
EPA	Recycling Education and Outreach Grants	Government	Federal	\$250,000
EPA	Exchange Network Grant Program	Government	Federal	\$50,000
EPA	Environmental Education Grant	Government	Federal	\$50,000

South Atlantic Strategy Funding Compendium.

project outcomes. The [survey questionnaire](#) was shared in December 2022 and can still be filled out.

EPA expects to hold an open invitation discussion for SAS stakeholders in Spring 2023 to foster further peer-to-peer learning about impactful projects.

REGIONAL PROJECT SUCCESSES

Reduction and Prevention of Trash in Texas

In September 2020, Keep Texas Beautiful (KTB) was awarded over \$400,000 through an EPA Gulf of Mexico Trash Free Waters grant. KTB leveraged partners from its existing affiliate network and chose three unique Texas communities in the Gulf of Mexico watershed to provide funding and technical assistance to create benchmark programs for litter cleanup and prevention that can be shared throughout Texas and beyond – the Rio Grande Valley Region, Central Texas Region, and Houston-Galveston Region. These projects promote education, infrastructure, and cleanup activities with the end goal of reducing litter and its eventual flow into the Gulf of Mexico.

In the Rio Grande Valley Region, KTB, Keep McAllen Beautiful, and the City of McAllen partnered to invest in various trash capture devices to prevent the downstream flow of debris into the Gulf, including a boom system, a netting capture system, and sewer inlet covers along their busy downtown district. Keep McAllen Beautiful also invested in BigBelly trash units to help increase trash capacity with hopes of keeping debris off the streets where it can enter the stormwater nexus. As of September 2022, partners have hosted eight cleanup events, engaging 837 volunteers and collecting approximately 30,742 lbs of litter from the community.

In Central Texas, KTB focused on San Marcos, a college town about an hour south of Austin. This town is home to the San Marcos River which features endangered flora and fauna like Texas wild rice, Texas blind salamanders, San Marcos gambusias, and fountain darters. KTB partnered with Keep San Marcos Beautiful to accomplish a variety of activities including creating an educational mural near San Marcos' busiest recreation entrance. This mural depicts two of the endangered fauna as cute cartoon characters and encourages visitors, "For the love of the river, pick up your litter!" These characters will also be featured in a youth



Litter boom system installed in the Houston-Galveston watershed.



Educational mural in San Marcos.

education and activity book currently in production. Other San Marcos projects include the construction of a gabion wall behind a busy truck stop that was polluting a major feeder creek and conducting various hot spot cleanups and litter audits throughout the community. Partners also engaged with the local university, Texas State University, to spread more awareness and increase litter and recycling programs on campus. As of September 2022, three waterway cleanups have been hosted in the area, engaging 56 volunteers and resulting in the collection of 1,077 lbs of litter.

In the Houston-Galveston region, KTB-led projects concentrated on the area's bayou system by partnering with the Buffalo Bayou Partnership to install boom systems to capture and divert trash. Litter collected via the Partnership's specialized vacuuming

vessel and other methods were audited and studied by Black Cat GIS to create a methodology that will be shared with peers and students throughout Texas. KTB also partnered with the Galveston Bay Foundation to improve and promote the [Galveston Bay Action Network](#) (GBAN). GBAN allows citizens to report litter hot spots, abandoned vessels and traps, illegal dumping, and other pollution in the four counties that surround Galveston Bay. Through a questionnaire, reports are automatically sent to the appropriate agency for cleanup and action. As of fall 2022, five groups making up 265 total volunteers have participated in 25 Houston waterway cleanup events since the project's start, removing approximately 6,039 lbs of litter. An additional 9,000 lbs of litter has been diverted by the boom system.

REGIONAL PROJECT SUCCESSES

Sustainable Materials Management Along the Mississippi

EPA Regions 4, 5, 6, and 7 have joined efforts to implement “Developing Community-Specific Models and Methods for Sustainable Materials Management Implementation Using a Pilot Study of Plastic Waste Along the Mississippi River.” The total funding for this Regional Office of Research and Development Applied Research Program (ROAR) grant is \$180,000. This project will develop reproducible methods to assist communities with scoping and planning for community-based solutions to materials management challenges, including the use of Community-Based Social Marketing (CBSM). CBSM principles have been used effectively to change behavior in other outreach initiatives around the country, such as the TFW-Washington DC [Curbside Disposal Education Campaign](#) pilot and the [Joyful Send-Off balloon litter reduction campaign](#) pilot in Virginia.

A case study of plastic pollution along the Mississippi River will be used to identify areas of both commonality and uniqueness in the factors that drive key decision-making at the community scale, such

as goals/objectives, stakeholder knowledge and perceptions, resources and logistical support, and data availability. This project will identify and engage key decision makers and stakeholders in four pilot cities along the Mississippi River, with a focus on their underserved communities, including Memphis, TN; St. Paul, MN; Baton Rouge, LA; and St. Louis, MO. This project will build off the successes of the Mississippi River Plastic Pollution Initiative, led by the Mississippi River Cities and Towns Initiative (MRCTI) in partnership with the United Nations Environment Program and the University of Georgia. During community engagement, project partners will work to identify potential actions to address plastic waste and develop community-specific models and methods to support future project implementation. The initiative will use data collection and analysis, material flow modeling, and community engagement techniques drawn from CBSM to answer questions regarding the sources and types of plastic found in the River, barriers and benefits to reducing plastic waste and moving towards a circular economy,

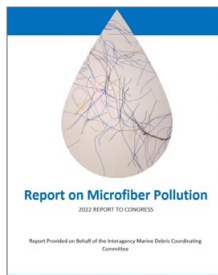
plastic reduction behaviors to target, and strategic partners in the watershed. unintentional leakage associated with curbside municipal trash collection. A total of 8,000 DPW-serviced, single-family homes in four target D.C. neighborhoods were selected to receive a campaign sticker articulating four simple actions to reduce unintentional trash spillage. After 22 weeks of data collection in the target communities, our analysis suggests that this educational pilot program had an overall positive impact. In particular, there was a statistically significant reduction in the number of overflowing and open cans across all neighborhoods – behaviors which were specifically mentioned on the campaign sticker due to their correlation with trash spillage. An executive summary is available on the TFW website for a quick overview of the project scope and findings. A more thorough review of the data collection methodology, analysis, results, and recommendations coming out of this pilot is also available for those interested in adopting a similar campaign approach in other communities.

NEW AND FORTHCOMING RESOURCES & PUBLICATIONS

Managing Microfibers and Tire Wear Particles

TFW, in collaboration with NOAA’s Marine Debris Program, led the development of the draft [Report on Microfiber Pollution](#) on behalf of the Interagency Marine Debris Coordinating Committee (IMDCC).

This is a Report to Congress as mandated by Section 132 of the [Save Our Seas 2.0 Act](#) (2020). The draft report was developed with input from representatives of twelve Federal agencies. The aim of this document



is to provide Congress with an overview of the microfiber pollution issue, while also outlining a path forward for Federal agencies, in partnership with other stakeholders, to address this problem over a 5-year period. The public comment period closed on October 17, 2022, and the report is being revised based on these comments. The final report should be released sometime in the first half of 2023.

Because of the emerging threat of tire wear particles in waterways, TFW convened a workshop in the form of two roundtable discussions in Spring 2022 that included

stakeholders from a range of sectors, including academia, the tire industry, municipalities, and wastewater utilities. Each of these discussions had the same format, which was structured to facilitate the sharing of information without committing participants to a specific course of action. Participants discussed a set of questions centered on better understanding current barriers and opportunities to effectively manage tire wear particles in waterways. TFW is developing a summary report of these roundtable discussions which will be made publicly available by Winter 2023.

NEW AND FORTHCOMING RESOURCES & PUBLICATIONS

Recent Additions to the TFW Webinar Series

TFW has added three webinars to the TFW webinar series since Spring 2022. The first was titled "[Using Clean Water Act Programs to Reduce Trash in Waterways](#)" and included guest speakers from EPA's Standards and Total Maximum Daily Load (TMDL) Section and Permits Section as well as a Section Chief from Baltimore City Department of Public Works. In this webinar, attendees learned how several states in the Mid-Atlantic region are addressing trash pollution using Clean Water Act programs, including the Water Quality Standards (WQS), TMDL, Nonpoint

Source (NPS), and National Pollutant Discharge Elimination System (NPDES) programs. Speakers discussed the opportunities and limitations associated with various programmatic approaches to addressing trash loadings into waterways.

A second webinar, "[Illegal Dumping - Best Practices to Address a Complex and Persistent Problem](#)," was hosted in July. This event featured expert researchers and local government leaders who provided an overview of illegal dumping, what we know about the underlying causes, and the

challenges that communities face in responding to and preventing illegally dumped waste.

Our latest webinar, the tenth in the TFW webinar series, covered the complexities of bioplastics – what they are, how they are and can be utilized, how they are disposed of, and their role in a sustainable environment. Over 200 people were in attendance. A recording of the event will be posted on the [TFW webinar archive](#) in the coming weeks. The next TFW webinar will be hosted in early 2023 on Extended Producer Responsibility.

Recent TFW Presentations

[GovLove](#), a podcast produced by Engaging Local Government Leaders (ELGL), recently hosted Layne Marshall of the TFW team and Julie Patton Lawson, Workforce Program Analyst for the Washington D.C. government and project champion, to discuss the [Curbside Disposal Education Campaign Pilot](#). The primary goal of this pilot was to educate D.C. residents about proper waste containment and encourage behavioral changes to reduce unintentional leakage associated with curbside municipal trash collection. A total of 8,000 D.C. Department of Public Works-serviced, single-family homes in four target neighborhoods were selected to receive a campaign sticker that articulated four concise actions. The promising findings of this study are detailed in a [case study](#) report released in Spring 2022. The 37-minute [podcast](#) featured a discussion about the project's methodology, results, and implications for future educational campaigns regarding waste disposal and containment. Those interested in listening in on this episode or others related to various local government topics can subscribe to GovLove on [Apple](#), [Google](#), and [Spotify](#).

In Fall 2022, Layne Marshall traveled to Virginia Beach to present during the Virginia Marine Debris Summit hosted by Clean

Virginia Waterways of Longwood University. Her presentation provided a more thorough background on the scope of the pilot project and its findings.

Layne also teamed up with project partners Julie Patton-Lawson and Lorena Kowalewski from the D.C. government on a joint presentation with Katie Register of Clean Virginia Waterways for the 2022 Chesapeake Watershed Forum. Katie opened the "Addressing Pollution Through Social Marketing Campaigns" presentation with an introduction to Community-Based Social Marketing (CBSM) and several examples of successful campaigns related to reducing balloon litter in the Mid-Atlantic. After EPA and the D.C. government provided a summary of the Curbside Disposal Education Campaign Pilot as an additional example of CBSM in practice, session attendees split into small groups to discuss human behaviors they were working to influence to improve the Chesapeake Bay.

The TFW team also presented during the 7th International Marine Debris Conference, held in Busan, Republic of South Korea in September 2022. TFW's partners from NOAA's Marine Debris Program presented on the draft [Report on Microfiber Pollution](#) and TFW presented on our [Microplastic](#)

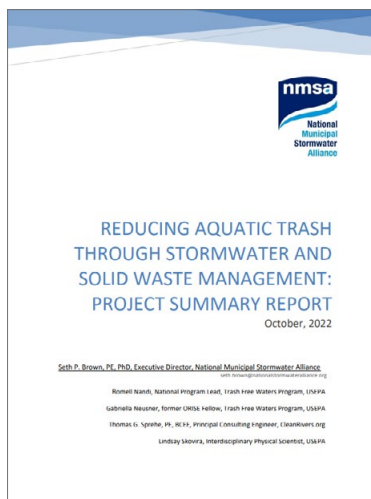


Layne Marshall presenting on the Curbside Disposal Education Campaign Pilot at the Virginia Marine Debris Summit.

[Beach Protocol](#) (MPBP) and our [Report on Priority Microplastics Research Needs](#).

TFW provided insight during the "citizen science" session on the MPBP, a citizen science tool that can be used to characterize and quantify microplastics along freshwater and marine beaches and shorelines. Since the protocol was made publicly accessible via the Marine Debris Tracker app in Fall 2021, it has been used to catalog over 3,128 items via 154 cleanup events across the world. The most common item type found so far are plastic fragments (81 percent), which result from the breakdown of larger macroplastic materials.

NEW AND FORTHCOMING RESOURCES & PUBLICATIONS



Stormwater and Solid Waste Management Report

As described in the [May 2022 issue of the Flow](#), in 2021 the TFW program collaborated with the National Municipal Stormwater Alliance (NMSA), KCI Technologies, and the American Chemistry Council (ACC) to hold three stakeholder dialogue sessions to identify major challenges that municipal stormwater and solid waste departments face when trying to more effectively address the issue of trash in waterways. Following these meetings, the project partners compiled an [inventory](#) of existing resources and information that municipalities might find helpful, given the types of challenges that they tend to have in common. The "[Reducing Aquatic Trash Through Stormwater and Solid Waste Management: Project Summary Report](#)" was released in October 2022 and provides an overview of the project goals, objectives, and activities as well as key discussion takeaways and recommendations coming out of the stakeholder meetings.

Cover of the Stormwater and Solid Waste Management Project Summary Report.

IN THE NEWS

Protecting Communities from Plastics Act

Late last year, a new bill, the [Protecting Communities from Plastics Act](#), was introduced in the Senate by Representative Jared Huffman (D-CA) and Senator Cory Booker (D-NJ), along with Break Free from Plastic Pollution Act champions Senator Jeff Merkley (D-OR) and Representative Alan Lowenthal (D-CA). The bill seeks to reduce the environmental justice impacts associated with the lifecycle of plastics. If passed, the bill would direct EPA to create targets for plastic source reduction and reuse for all single-use plastic packaging and foodservice ware by the end of 2027, including setting a minimum 25% source reduction target and minimum 30% reuse and refill target by 2032. It would also create incentives, like a grant program, for expanding alternatives to single-use plastics like reuse and refill programs. In addition, the bill would temporarily pause permitting for plastic production facilities and proposes restricting the use of certain chemical additives under the [Toxic Substances Control Act](#) (TSCA). This bill also calls for a nationwide study on the presence and sources of microplastics in food and beverage products as well as the creation of a pilot program to test the efficacy and cost-effectiveness of various microplastic removal and prevention technologies and techniques.

Setting the Standard for Trash Capture

The American Society for Testing and Materials (ASTM) recently published E3332, a Standard Test Method for Determining Trash and/or Debris Capture Performance of Stormwater Control Measures. This standard aims to reduce complexities for manufacturers to test different devices and produce credible and consistent performance data that end users can trust and interpret easily. The standard introduces a reproducible mass-based trash "recipe" built off of earlier work conducted by CalTrans, the California Department of Transportation. It contains guidelines on testing for hydraulics, mesh/screen blocking, trash capture, plastic bead capture, debris capture, and scour. Instead of providing pass/fail criteria, the standard provides data for verification. Certification, which allows the verified technology to be deployed, is up to the Authority Having Jurisdiction (AHJ) jurisdiction. The new standard is available for purchase on the [ASTM website](#). This was a project endorsed by municipal stakeholders during the dialogues which led to the [Reducing Aquatic Trash Through Stormwater and Solid Waste Management: Project Summary Report](#) described on page 13.

IN THE NEWS

Extended Producer Responsibility Laws Expand Across the Country

In July 2022, California became the fourth state in the nation to enact an Extended Producer Responsibility (EPR) law for packaging, titled SB54: Plastic Pollution Prevention and Packaging Producer Responsibility Act. EPR shifts the burden of disposal from governments and taxpayers to packaging producers and brand owners. EPR programs have proven successful in Europe by increasing recovery rates, reducing confusion and contamination, bolstering recycling infrastructure, and growing markets for recycled material. This

California EPR law covers single-use packaging and food serviceware and includes enforceable recycling targets that will increase over time, reaching 65% by 2032. Over the past two years, Maine, Oregon, and Colorado have also passed expansive EPR laws. Dozens of additional packaging EPR bills were under consideration in other states in 2022. The new year will likely bring additional proposals for packaging EPR. Several resources are available on this topic including the Sustainable Packaging Coalition's [Guide to](#)

[EPR Proposals](#), reports and [toolkits](#) developed by the Product Stewardship Institute, and [model policy](#) for packaging EPR legislation produced by Upstream. In 2022, the National Caucus of Environmental Legislators also announced the formation of an [EPR for Packaging Network](#) – a group of state lawmakers which have joined forces to exchange policy ideas, strategies, and lessons learned. The eleventh webinar in the [TFW webinar series](#) will focus on EPR in the new year.

Reuse Gains Momentum in the States

While reuse has become more prevalent in Europe over the past several years as a solution to plastic pollution, the U.S. has more recently begun investing in this space. [The Global Landscape of Reusable Solutions](#), created by Moss & Mollusk Consulting, compiles information on the evolution, current state, and potential environmental benefits of reuse and refill solutions being provided in nine distinct categories. As of Summer 2022, the Landscape identified 1,196 programs, advocacy initiatives, and campaigns operating in 119 countries. The top three types of programs, advocacy initiatives, and campaigns were package-free shops, reuse advocacy, and reusable cup and container programs.

There are over [300 reuse and refill programs](#), advocacy initiatives, and campaigns operating in the United States, specifically. California is currently the only state with specific reuse targets in place, and those do not take effect until 2030. However, there are a growing number of state and local laws and policies in place

that have helped create a favorable environment for reuse and refill systems. These include laws that require the use of compostable packaging (which can make reusable foodware more cost competitive with disposable options), laws that ban single-use water bottles and shopping bags, laws that require customers to ask for disposable utensils, and Extender Producer Responsibility laws for packaging. There are also over 200 funding sources within the US for reuse initiatives, and a large and growing number of US companies specifically designing for reuse.

The U.S. Plastics Pact, in collaboration with Closed Loop Partners, the Reusable Packaging Association, and World Wildlife Fund (WWF) launched a [Reuse Catalyst Program](#) in September 2022. The program is “designed to support and develop innovators that have scalable reuse and refill solutions for the U.S.” through shared learnings, expertise, connectivity, and amplification, according to a press release. This effort is being rolled out in support of

the U.S. Plastics Pact’s goal to make all plastic packaging 100% reusable, recyclable, or compostable by 2025. The application period for [Google for Startups Accelerator: Circular Economy](#) closed in November 2022. This program for startups and non-profit organizations in Asia-Pacific and North America will focus on using technology to solve circularity challenges, including reuse.

Upstream now hosts a [National Reuse Network](#), a national collaboration and learning hub to promote reuse and reduce single-use food and beverage packaging. In 2022, the Sustainable Packaging Coalition (SPC) published [Guidance for Reusable Packaging](#), which synthesized varied definitions, discussed roles and consumer interactions, and proposed considerations and best practices for designing effective reusable packaging. SPC also kicked off a [Reusable Packaging Collaborative](#) to discuss challenges and opportunities for reusable packaging in the sustainable packaging space.

The Rapids

Join the TFW contact list to receive the Flow newsletter and Rapids email blast in your inbox! Our Rapids email is published on the first Monday of each month, providing helpful insight on funding opportunities, upcoming webinars, a summary of recent microplastics research, and more. If you aren't currently receiving this info, [sign up here](#).