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THE FLOW OF... TRASH FREE WATERS

ISSUE 10

INSIDE THIS ISSUE

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?

Photos by NOAA Marine Debris Program

International Trash Free Waters

From the September G7 Environmental Ministerial held in Halifax, to the October *Our Ocean* Conference in Bali, everyone is talking about fixing the problem of marine trash. While EPA's participation in high-level dialogues and other meetings is important, we are also engaging meaningfully on the ground to turn talk into action.

EPA's engagement on marine litter has been mostly through the Trash Free Waters (TFW) program. EPA's Office of Water (OW) and the EPA Regions are implementing the TFW program domestically, and the Office of International and Tribal Affairs is engaging with key countries to implement the approach internationally. Our coordination with OW, the Office of Land and Emergency Management, and the Office of Research and Development shapes what we do and allows us to share domestic approaches that are applicable to other countries.

Marine litter is a growing problem in the Caribbean, and the US is obligated to address land-based sources of pollution, including marine litter, in the region. To do this, EPA is implementing the Trash Free Waters program in Peru, Jamaica and Panama. However, the largest contributors of trash into the environment are in Asia; EPA is working with other

federal agencies such as the National Oceanic and Atmospheric Administration (NOAA) and the U.S. State Department to effectively engage in that region by sharing tools and experiences. EPA recently participated in the Intergovernmental Review of the Global Program of Action for Land Based Sources of Pollution and the Asia Pacific Economic Cooperation Working Group Meeting on Marine Litter, and will join others for the UN Environment Ad Hoc Open-Ended Expert Group meeting in December. This meeting will provide recommendations for global coordination to the UN Environment Assembly in March 2019. Even the International Maritime Organization is stepping into the marine litter arena. It adopted a Marine Litter action plan at the recent Marine Environmental Protection Committee Meeting. The action plan is aimed at helping us better understand how much trash is coming from ships, and finding solutions to minimize it.

The US commitments to address marine litter go beyond government and include industry, NGOs, beverage companies, chemical companies, and others, with many focusing on reducing plastic pollution. We hope that all this attention and action leads not only to a real reduction in marine litter, but more importantly, real behavior change to make it last.

—Stephanie Adrian,
U.S. EPA Office of International and Tribal Affairs,
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NGO and industry attendees at a stakeholder breakfast with EPA Acting Administrator Andrew Wheeler (center) at the G7 Environment, Energy, and Ocean Ministers meeting in Halifax, Canada (September 2018).

G7 Nations Issue Marine Plastics Innovation Challenge

In September 2018, the G7 Environment, Energy, and Ocean Ministers convened in Halifax, Nova Scotia to discuss the theme *Working together on climate change, oceans and clean energy*. Following a session on plastics and marine litter, the G7 nations–including the United States–committed to an innovation challenge to the private sector, NGOs, and national and local governments to address marine plastic litter. The overall objective of the challenge is to reduce marine plastic pollution by providing incentives for the development of innovative social or technological solutions for a more sustainable management of plastics throughout their lifecycle.

In implementing the challenge, G7 initiatives will aim to:

- Leverage, build on, and complement existing initiatives throughout the plastics lifecycle;
- Leverage the strength of people and organizations with a diversity of expertise, including entrepreneurs, innovators, small to medium enterprises, researchers, non-profit organizations, and/or large multi-national companies;
- Support gender equality, women's empowerment and women's leadership;
- Encourage innovative solutions that are sustainable, feasible, lasting, economically viable, and scalable; and
- Develop and maximize effective relationships with international financial institutions such as the World Bank, Inter-American Development Bank, and Asian Development Bank, and also pursue approaches with philanthropic foundations.

Areas of innovation could include:

- Product design and waste prevention;
- Waste and wastewater management and clean-up; and
- Markets, education and awareness.

EPA's Trash Free Waters program, in conjunction with other EPA offices, is currently exploring ways to help the United States implement this challenge.

— Romell Nandi,
U.S. EPA Office of Water,
nandi.romell@epa.gov

EPA Research on Microplastics in Sediment

EPA Regions 1, 2, 3 and 9, along with EPA Office of Research and Deveopment (ORD) researchers from the Atlantic Ecology Division in Narragansett, Rhode Island, are collaborating on a Regional Applied Research Effort (RARE) project to quantify the recovery of microplastics in sediments with commonly-used methods published in the scientific literature.

While most plastic trash initially floats, over time the larger plastics degrade to microplastics (particles from 1- 1,000 microns). These microplastics become coated with biofilms which make them denser, and as a result they sink and reside in aquatic sediments. Microplastics have been found in sediments of every water body on the planet. In urban areas, the concentrations can be in the hundreds of plastic particles/kg of sediment.

There is concern that the presence of high concentrations of microplastics in benthic environments will have adverse ecological effects. To accurately quantify this risk, methods are needed to measure sediment microplastics. This RARE project will help determine the strengths and weaknesses of some of the more common published methods.

Currently, methods to isolate and extract microplastics from sediments differ vastly in their approach. For example, they use a range of filters, sieve sizes, aeration, physical mixing, chemical oxidation and density gradients to separate the microplastics from other sediment constituents (e.g., organic matter, inorganic particles). Recommendations from this project will allow the Regions, States and Tribes to choose methods that are appropriate for the particular objectives of their investigations. The draft report for this RARE project is expected in early 2019.

For more information contact Kay Ho at ho.kay@epa.gov or Robert Burgess at burgess.robert@epa.gov.

Restaurant Programs for Source Reduction

Across the country, restaurants are becoming important source reduction partners. A recent survey by the National Restaurant Association finds that environmental sustainability is a top trend in 2018 and chefs are paying close attention to sustainability, food waste reduction, and local sourcing.

In the Santa Monica Bay watershed, the Bay Foundation launched the Clean Bay Restaurant Certification program in 2008 to recognize restaurants that integrate sustainability and ocean-mindedness in their business practices. In Greenport, NY, four local eateries are participating in the Product Stewardship Institute's plastics source reduction project. Funded by USEPA Region 2, the project aims to decrease the number of disposable plastic items (cups, straws, take-out containers) that end up on Long Island's beaches. The Ocean Friendly Restaurants program offers restaurants a set of criteria they can follow to become recognized as ocean friendly – e.g., not using styrofoam, plastic tableware, or plastic bags, and offering straws on request only; offering discounts for customers who bring in reusable cups and mugs; and using water and energy conservation appliances. ReThink Disposable, which has worked with USEPA Regions 2 and 9 on Trash Free Waters source reduction projects, provides a technical assistance program that helps food business operators reduce waste and cut costs by minimizing disposable packaging items. These are just a few examples of how restaurants can make a big difference in moving toward trash free waters.

Learn more about restaurant sustainability at

https://www.restaurant.org/getattachment/News-Research/Research/State-of-Restaurant-Sustainability/Sustainability_FINAL_pdf.pdf.

Tijuana, Mexico Signs a Plastic Bag Reduction Ordinance

Photo by Margarita Díaz, Proyecto Fronterizo de Educación Ambiental

The global campaigns by EPA, NOAA, the UN Environment Programme, the Commission for Environmental Cooperation and others are raising awareness about land-based and other sources of plastic and having a positive impact. EPA's Border 2020 program has for many years worked with many NGOs, businesses, academics, and others in the border region supporting trash cleanups and raising awareness about the impacts of plastic. This includes the "Restaurantes Amigos" program, which advocates against single use containers and provides training on best practices to reduce waste.

On August 23, Tijuana became the first Mexican city on the border with the U.S. to approve a ban on disposable plastic bags. Located on the Pacific Coast, Tijuana is one of the fastest growing cities in Mexico. Border 2020 has recently awarded a grant to the Southwest Wetlands Interpretive Association (SWIA), a non-profit affiliated with the Tijuana River National Estuarine Research Reserve. Working with the city of Tijuana and many Mexican and binational NGOs and businesses, SWIA will continue an educational outreach effort about the new plastic bag ordinance and will work with partners to donate reusable bags to jump start the program.

These plastic reduction efforts are just the first step. Border 2020 will continue to support programs that help get the word out on the adverse impacts of plastic.

To learn more about environmental projects along the border, visit https://www.epa.gov/border2020.

—Emily Pimentel,
U.S. EPA Region 9,
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Trash Pollution and Environmental Justice

From microplastic pollution to illegal dumping, mismanaged solid waste often disproportionately affects low-income and minority communities. Engagement opportunities around trash pollution can raise environmental literacy and pave the way for conversations around other water quality issues. Stewardship begins with the development of a place-identity because the feelings and attitudes we have for our environment affect our behaviors and actions.

Multi-faceted neighborhood beautification projects addressing trash pollution are being supported by grants from EPA's Urban Waters and Environmental Justice (EJ) programs in many Regions. For example:

- In Puerto Rico's Caño Martín Peña Watershed, upstream of the San Juan Bay Estuary, the Urban Waters Ambassador organized community groups to clear illegal dumpsites and turn them into community gardens.
- The "Trash for Peace Sustainability Education Program" in Portland, Oregon (within the Lower Columbia River Estuary) received an EPA 2017 EJ Small Grant to focus on youth education in affordable housing properties that do not have adequate solid waste infrastructure.
- With a grant from the Five Star and Urban Waters Grants Program, Partners for Clean Streams (PCS) in Toledo, OH will work to reduce trash in drinking water by continuing to organize more than 850 volunteers to remove litter from five major watersheds across northwest Ohio. As part of its Trash Amnesty Weeks, PCS will provide roll-off bins, free trash disposal, and educational materials in targeted zones around Toledo. By making free disposal options more readily available in low income, dense urban neighborhoods near parks and rivers, PCS anticipates reducing the amount of large item debris in the nearby rivers and riparian areas.

Learn more about EPA's Urban Waters program at https://www.epa.gov/urbanwaters. Information about EPA's Environmental Justice program is available at: https://www.epa.gov/environmentaljustice

—Emma Maschal,
ORISE Research Participant,
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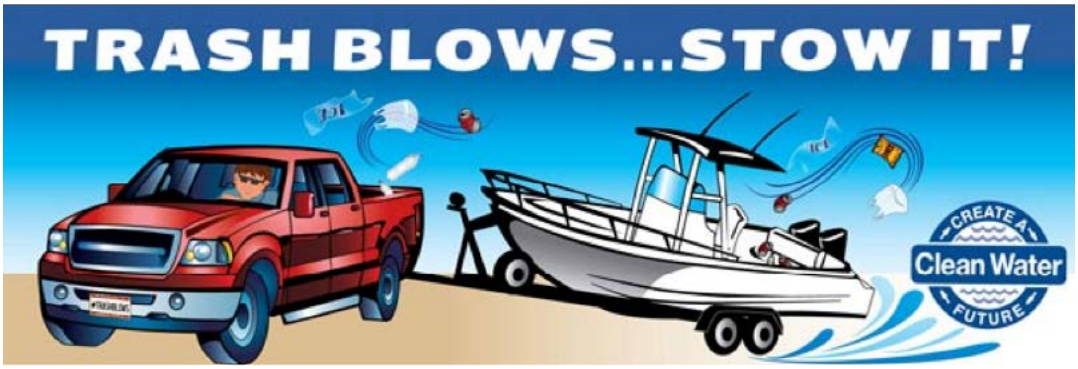
"Trash Blows" Campaign on Dauphin Island, Alabama



The Town of Dauphin Island and Mobile Bay National Estuary Program (MBNEP) partnered to raise awareness about litter blowing from truck beds and boats during this year's Alabama Deep Sea Fishing Rodeo, held July 20-22. The purpose of the campaign is to encourage anglers to stow their truck bed and boat trash to keep waterways clean. The Trash Blows message was spread throughout the Island during Rodeo weekend, as part of the Create a Clean Water Future Campaign (CCWF).

Visitors coming to the Island from Mobile passed a string of signs and banners that reminded drivers to stow the trash from their trucks and boats. Rodeo participants were given trash bags as they arrived at the launch site. They were also encouraged to join in on the #TrashBlows social media campaign by taking a selfie with all the trash they had "stowed," then posting it to Instagram or Twitter with the hashtag #TrashBlows. Participants were eligible for special prizes if they came by the Mobile Bay NEP table in the sponsors' tent.

For the first time during the Alabama Deep Sea Fishing Rodeo, recycling opportunities were available to those vising the island. This service was provided through a collaboration between the Mobile Bay National Estuary Program, Thompson Engineering, Earth Resources Recycling, and the City of Dauphin Island. Learn more at http://www.mobilebaynep.com/news/trash_blows_campaign_rollout_at_adsfr.

Bring Your Own Reusable to the Park: Hydration Stations in NY and NJ

In 2016, EPA Region 2 provided NY and NJ grant funds to implement projects that would reduce regional aquatic plastic pollution. Both states had the option of choosing their own strategies and projects; however, each state decided to tackle single-use plastic bottle pollution and set forth installing bottle refill water fountains in public parks that have access to recreational surface waters.

By mid-2019, a total of thirty-seven fountains will be installed across both states. In each case, parks were selected based on number of visitors and the potential for the greatest reduction in single-use plastic bottle aquatic pollution. As an example, two fountains installed at the Niagara Falls (NY) visitor centers eliminated nearly 17,000 single-use plastic bottles between January and April of 2018.

Recently, the New York Times published a piece on New York City's Bring It campaign aimed at reducing waste by challenging citizens to remember their reusable water bottles when they are on the go. S'well, in partnership with the Mayor's Office of Sustainability, is donating 320,000 reusable bottles to NYC public school students to cut down on plastic waste and litter. This sort of investment is expected to lead to 54 million fewer single-use drinks, and that's a lot of packaging.

Both approaches – installation of bottle refill fountains in parks and reusable bottle donation – are proceeding in parallel. Call it

source reduction, sustainable materials management education, public-private partnership, drinking water infrastructure, or public health through clean water access – Trash Free Waters projects are interconnected, so each of our efforts to reduce trash pollution will provide multiple benefits to communities. Learn more about the reusable water campaign at:

https://www.nytimes.com/2018/09/23/nyregion/swell-water-bottles-nyc-high-schools.html

—Josh Kogan,
U.S. EPA Region 2,
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Tourism and Trash

The Save Our Seas (SOS) Act of 2018 (S. 3508) recently passed both houses of Congress and was signed into law by the President. The SOS Act reauthorizes the NOAA Marine Debris Program and renews the U.S. commitment to reducing marine debris and solid waste from land-based sources.

By drawing the connection between marine debris and the recreation and tourism economy, the SOS Act also highlights the relationship between environmental protection and economic prosperity. Source reduction measures are gaining ground in communities with high visitor rates because beautification and public health are key to attracting tourists. Investing in preventive measures can also be more cost effective than expanding waste management and trash pollution remediation systems.

Another approach to reduce marine debris in these recreational areas is to foster stewardship among tourists. Participating in educational experiences and service projects, such as cleanup and trash monitoring events, can help tourists develop environmental literacy.

—Emma Maschal,
ORISE Research Participant,
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U.S. Commitments Announced at *Our Ocean* Conference

During the *Our Ocean* Conference in Bali, Indonesia on October 29-30, 2018, the United States announced 15 commitments. Together, these commitments will strengthen sustainable management of marine resources; prevent plastic and other debris from entering the ocean; support research and observation of ocean ecosystems; and foster partnerships promoting maritime security and a sustainable blue economy.

Among the U.S commitments were several related to marine trash:

- One million dollars in funding over two years, 2018-2020, to help prevent marine debris from entering the ocean through the development of environmentally sustainable waste management systems and reductions in the amount of fishing gear abandoned, lost, or otherwise discarded in the ocean.
- Two new grants under USAID's Municipal Waste Recycling Program to reduce plastics in marine protected areas in Raja Ampat, Indonesia, and the Palawan Island in the Philippines. Anticipated level of funding, subject to the availability of funds, is $500,000 over two years, 2018-2020.

Learn more about the commitments made at the Our Ocean Conference at: http://ourocean2018.org/?l=our-ocean-commitments

The Rapids: News Drops

NEWS/PUBLICATIONS/EVENTS

Microplastics in Coral

The impact that microplastics have on scleractinian coral is largely unknown. A study investigating calcification effects, size limits, and retention times of microbeads and microfibers in two Caribbean coral species has been published in Marine Pollution Bulletin. *Scleractinian coral microplastic ingestion: Potential calcification effects, size limits, and retention* was co-authored by Cheryl Hankins, Allyn Duffy, and Kathryn Drisco of the USEPA National Health and Environmental Effects Lab and USEPA Region 2. This study was supported by the USEPA Office of Research and Development's RARE program. The article is available at: https://www.sciencedirect.com/science/article/pii/S0025326X18305551

FUNDING OPPORTUNITIES

16th Annual P3 Awards: A National Student Design Competition Focusing on People, Prosperity and the Planet

Deadline: Dec. 11, 2018

EPA announces the release of the 16th Annual P3 Awards: A National Student Design Competition Focusing on People, Prosperity and the Planet (P3), Phase I Request for Applications (RFA). This collegiate design competition promotes the use of scientific and engineering principles in creating innovative projects to address environmental challenges and develop real-world solutions. This RFA is seeking applications in the research areas of Air Quality, Safe and Sustainable Water Resources, Sustainable and Healthy Communities, and Chemical Safety.

Learn more at: https://www.epa.gov/research-grants/16th-annual-p3-awards-national-student-design-competition-focusing-people-prosperity

NOAA Marine Debris Research Grants

Deadline: December 14, 2018

The NOAA Marine Debris Program (MDP), authorized in the Marine Debris Act (33 U.S.C. 1951-1958), provides funding to support eligible organizations to conduct research directly related to marine debris through field, laboratory, and modeling experiments. The MDP invites applications for research funding in any of three areas of focus: research that explores the ecological risk associated with marine debris and determines debris exposure levels; research that examines the fate and transport of marine debris; and/or research that quantifies habitat impacts resulting from marine debris and the gains in ecosystem services that result when debris is removed. Projects may address one or more of these research priorities and should be original, hypothesis-driven projects that have not previously been addressed to scientific standards.

Successful proposals through this solicitation will be funded through cooperative agreements. Funding of up to $1,500,000 is expected to be available for Marine Debris Research grants in Fiscal Year 2019 (FY19). Typical awards will range from $150,000 - $250,000. Funding for this grant competition comes through the NOAA Marine Debris Program as appropriations to the Office of Response and Restoration, National Ocean Service.

Grants.gov: https://www.grants.gov/web/grants/view-opportunity.html?oppId=309025

USDA Water and Environmental Programs Grants

Deadline: December 31, 2018

The USDA Rural Development Office's Water and Environmental Programs National Office coordinates Solid Waste Management Grants for rural areas and towns that reduce or eliminate pollution of water resources by providing funding for organizations that provide technical assistance or training to improve the planning and management of solid waste sites. These grants can be used for source reduction efforts as well as for the proper management of solid waste. For more information, visit: https://www.rd.usda.gov/programs-services/solid-waste-management-grants

Five Star and Urban Waters Restoration Grant Program 2019 Request for Proposals

Full Proposal Due Date: Thursday, January 31, 2019

The National Fish and Wildlife Foundation (NFWF) and the Wildlife Habitat Council (WHC), in cooperation with the U.S EPA, U.S. Forest Service, U.S. Fish and Wildlife Service and others, is soliciting applications for the 2019 Five Star and Urban Waters Restoration program. The program will award approximately $1.7 million in grants.

This grant program seeks to develop community capacity to sustain local natural resources for future generations by providing modest financial assistance to diverse local partnerships focused on improving water quality, watersheds and the species and habitats they support. Projects may include a variety of ecological improvements along with targeted community outreach, education and stewardship. Ecological improvements may include wetland, riparian, forest and coastal habitat restoration; wildlife conservation; community tree canopy enhancement; water quality monitoring; and green infrastructure best management practices for managing run-off. Projects should also increase access to the benefits of nature, reduce the impact of environmental hazards and engage local communities, particularly underserved communities, in project planning, outreach and implementation.

For more information, visit: https://www.nfwf.org/fivestar/Pages/2019rfp.aspx

NOAA Coral Reef Conservation Program

Deadline: February 14, 2019

The NOAA Coral Reef Conservation Program, as authorized by the Coral Reef Conservation Act of 2000, provides matching awards of financial assistance to resource management agencies that have been appointed by their Governors to serve as the primary point of contact for coral reef conservation activities in American Samoa, Florida, the Commonwealth of the Northern Mariana Islands, Guam, Hawaii, Puerto Rico, and the U.S. Virgin Islands. The objective of these cooperative agreements is to support coral reef management, monitoring, and conservation projects that seek to improve the condition of coral reef ecosystem resources in these seven jurisdictions. Funding for this program is subject to the availability of FY 2019 and future Congressional appropriations and is expected to range between $3,500,000 and $4,500,000 in FY 2019. Funding made available from NOAA's Coral Reef Conservation Program is intended to support priority coral reef management activities, which include reduction of land-based sources of pollution and marine debris. For more information, visit: https://coast.noaa.gov/data/docs/funding/NOAA-NOS-OCM-2019-2005750.pdf

Environmental Justice Collaborative Problem-Solving Cooperative Agreement Program 2018 Request for Proposals

Deadline: February 16, 2018

The Environmental Justice Collaborative Problem-Solving (EJCPS) Cooperative Agreement Program provides funding to support community-based organizations in their efforts to collaborate with local stakeholder groups as they develop and implement solutions that address environmental and/or public health issues for underserved communities. Applying organizations should have a direct connection to the underserved community impacted by the environmental harms and risks detailed in the workplan. The long-term goals of the EJCPS Program are to help build the capacity of communities with environmental justice concerns and to create self-sustaining, community-based partnerships that will continue to improve local environments in the future. For more information, visit: https://www.epa.gov/environmentaljustice/ej-collaborative-problem-solving-cooperative-agreement-program-fy-2018-request

Residential Curbside Recycling Systems Grant Request for Proposals

Deadline: open call for applications

Communities are encouraged to apply in advance of a cart-based recycling transition. This grant program is meant to accelerate the local level adoption of recycling best management practices through funding and technical assistance. Cart-based collection systems paired with education and community outreach programs will reduce the amount of mismanaged waste by addressing community needs. For more information, visit: https://recycling-partnership.org/wp-content/uploads/2018/05/recycling-cart-grant-2018-1.pdf

Keep America Beautiful's Community Restoration and Resiliency Fund

Deadline: rolling

The Keep America Beautiful (KAB) Community Restoration and Resiliency Fund benefits KAB Affiliates that serve communities directly affected by natural and environmental disasters. The fund provides immediate and long-term support for initial and ongoing cleanup efforts and helps rebuild vital public spaces: parks, greenways, community gateways, Main Street/downtown areas, open spaces and more. For more information, visit https://www.surveymonkey.com/r/CRRFapp

UPCOMING CONFERENCES

Partnership for the Delaware Estuary (PDE) 2019 Science and Environmental Summit

January 27-30, 2019
Cape May, New Jersey

PDE is hosting their 2019 Science and Environmental Summit in Cape May, NJ from January 27-30, 2019 in Cape May, New Jersey. The theme is *Estuary 2029: Saving Our System Through Collaboration*. The summit convenes every other year to bridge scientific disciplines and sectors. The goal is to foster sharing and networking in support of more holistic, ecosystem-based science, management, restoration and outreach in the Delaware Estuary and vicinity. For more information, visit: http://www.delawareestuary.org/delaware-estuary-science-and-environmental-summit/

Algalita's 8th Annual POPS International Youth Summit

February 22-24, 2019
Dana Point, California

Plastic Ocean Pollution Solutions (POPS) Youth Summit is for students ages 11-18 interested in making a difference and becoming leaders in the global puzzle to solve plastic pollution. Every person combating plastic pollution has a unique and important story to tell, so this summit is intended to help strengthen personal storytelling skills and build support networks for students with innovative ideas. For more information, visit: http://algalitayouthsummit.org/

Have a TFW Story to Share?

The Flow is always looking for TFW articles, news and event information.
Contact the editor at mayio.alice@epa.gov for submission deadlines.