



Office of Wastewater Management

2018 Annual Report



Message from the Director



Colleagues,

The work we do together in the Office of Wastewater Management impacts the lives of Americans every day. From building recreational capacity by ensuring water quality to rebuilding our nation's water infrastructure, we touch the lives of those who need us most in every corner of the United States.

In FY 2018, OWM looked toward the future. We worked to maintain the gains we've made in the past, but we also worked intentionally to prepare for and address the needs of the next generation. We're actively focusing on implementing OWM programs, enhancing the permitting process, and providing clarity and certainty for the regulated community.

We're not only in the business of ensuring adequate water infrastructure, we're problem solving for challenges of the future, such as affordability and lifecycle asset management. As our country's needs change, OWM's most important resource – our staff – will face these challenges and discover innovative solutions to meet them. It is my pride and pleasure to be a part of that effort.

A handwritten signature in black ink, appearing to read "A. S. Sanyal".

WHO WE ARE

The Office of Wastewater Management (OWM) is part of the U.S. Environmental Protection Agency's Office of Water. OWM partners with federal, state and local governments, industries and tribes to provide innovative solutions for our nation's water quality and quantity challenges.

OUR VISION

We envision a nation where all communities have access to clean water. By working with stakeholders, we develop approaches to manage water as a critical resource and prevent water pollution. Our programs and initiatives protect public health and the environment as we support a growing economy.



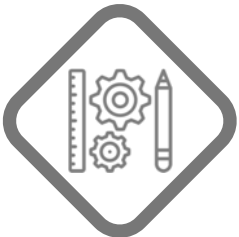
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Providing affordable financing to build water quality projects in communities. OWM identifies new and innovative approaches to financing water infrastructure that help existing dollars work smarter and harder.



Tools

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Promoting best practices, technical assistance, guidance, and training to help states, industries, and communities make informed decisions about managing water resources.



Permits

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Protecting water quality under the Clean Water Act through pollution control permits, rules, and oversight. OWM regulations are developed with extensive input from stakeholders, industry, and the public.



Partnerships

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Collaborating with stakeholders to encourage innovation and supplement regulatory programs with voluntary initiatives to protect water quality and quantity.

Funding



Did you know? To date, the WIFIA program issued over \$1B in credit assistance through water infrastructure loans.

WATER INFRASTRUCTURE FINANCE AND INNOVATION ACT

WIFIA Loan Closings

By the end of August 2018, the Water Infrastructure Finance and Innovation Act (WIFIA) program closed four transactions totaling over \$1 billion in loans to help finance \$2.1 billion for water infrastructure projects and create up to 5,500 jobs. In April 2018, the WIFIA program closed its first-ever loan to King County, Washington, to help finance its Georgetown Wet Weather Treatment Station. The project is estimated to cost \$275 million and EPA's WIFIA loan will help finance nearly half that—up to \$134.5 million. Other WIFIA loans include: City of Omaha's Saddle Creek Combined Sewer Overflow Retention Treatment Basin (\$69.7 million); San Francisco Public Utilities Commission's Southeast Water Pollution Control Plant Biosolids Digester Facilities Project (\$699 million); and Orange County Water District's Groundwater Replenishment System Final Expansion (\$135 million). Because the WIFIA program offers loans with low interest rates, WIFIA loans will save borrowers up to \$466 million.

2018 WIFIA Notice of Funding Availability

In April 2018, EPA [announced the availability of funding for \\$5.5 billion](#) in WIFIA loans in its second selection

round. EPA solicited letters of interest from utilities, governmental entities, State Revolving Fund programs, partnerships, and private corporations to fund water infrastructure projects expected to cost at least \$20 million or \$5 million for small communities (less than 25,000 people). EPA also named two priorities for this selection round: (1) to provide for clean and safe drinking water, including reducing exposure to lead and other contaminants in the nation's drinking water systems; and (2) to repair, rehabilitate, and replace aging infrastructure and conveyance systems.



2018 Letters of Interest

By the end of July 2018, the WIFIA program received [62 letters of interest](#) requesting \$9.1 billion in WIFIA loans from prospective borrowers for water infrastructure projects across the country. The letters of interest submitted reflect a wide diversity of projects, geographical locations, and prospective borrowers. Projects are located in 26 different states and territories – including Guam and the District of Columbia – and covered projects from wastewater, drinking water, water recycling, desalination, stormwater management, and combined approaches. While the majority of prospective borrowers are municipal government agencies, other prospective



borrowers include small communities, public-private partnerships, corporations, and a tribe.

WIFIA Information Sessions

From November 2017-June 2018, the WIFIA program hosted a series of information sessions and webinars to explain the benefits of financing with WIFIA loans and to prepare prospective borrowers to submit letters of interest. The WIFIA program hosted over 150 participants at one-day information sessions in four cities: Lenexa, Kansas; Nashville, Tennessee; Denver, Colorado; and Washington, DC. The program provided the same information via webinar to nearly 400 additional people. Following the publication of the Notice of Funding Availability in April 2018, the WIFIA program held 5 more webinars reaching about 400 people. These presentations focused more specifically on how prospective borrowers could submit letters of interest and how EPA would review them. Presentations are available [online](#).

CLEAN WATER STATE REVOLVING FUND

30th Anniversary of the CWSRF Program

In November 2017, EPA celebrated the 30th anniversary of the Clean Water State Revolving Fund (CWSRF) program at an event in Indianapolis, Indiana. Over its 30-year history, the CWSRF program has been a reliable source of funding for a wide variety of high priority projects. Through the years, [over \\$69 billion](#) has gone towards secondary and advanced treatment. The CWSRF program has also contributed \$4.5 billion to

address various sources of non-point pollution by funding such projects as implementing Agricultural Best Management Practices (Ag BMPs), cleaning up brownfields, and repairing/replacing failing septic systems. In addition to funding environmentally important projects, the CWSRF program has passed on significant costs savings through its below market interest rates and by providing \$4.6 billion as additional subsidy (e.g., grants, negative interest loans, principal forgiveness). With its expanded project eligibilities and financing options resulting from the Water Resources Reform and Development Act of 2014, the CWSRF program will remain at the forefront of addressing this country's most pressing water quality needs.

Inter-Agency Collaboration on CWSRF

The CWSRF program coordinated with several offices at EPA this year. The program is working with the nonpoint source branch in the Office of Wetlands, Oceans, and Watersheds (OWOW) to develop a best practices guide for funding nonpoint source projects and a pilot in Vermont to develop a sponsorship program for nonpoint source projects. Also, the CWSRF program increased coordination with the National Estuary Program through speaking engagements, an updated fact sheet, and a planned webinar. The program also coordinated with the Office of Land and Emergency Management (OLEM) on an updated fact sheet on funding brownfields projects with the CWSRF and a compilation of case studies on cofunded brownfields and Superfund projects.

Focus Groups

This year, the CWSRF program continued to assist



interested state programs with surveys and focus groups to gain feedback on potential assistance recipients' perceptions of the CWSRF program. Nine states have participated in this effort, to date. The feedback from these surveys and focus groups helps to guide states in streamlining and marketing their programs so that they can increase assistance provided.

PISCES Recognition Program

Brought back by popular demand, OWM's [CWSRF PISCES Recognition Program](#) highlighted 28 projects from around the country in 2018 for their distinguished accomplishments in promoting human health and improving water quality. Five projects were celebrated in the Exceptional Projects category: Little Rock Sewer Line Replacement Program in Little Rock, AR; Yorklyn Brownfield – Wetland Project in Yorklyn, Delaware; Akron Storage Basin – Separation Project in Akron, Ohio; T.F. Green Airport Glycol Recovery System in Warwick, Rhode Island; and Tacoma -Pierce County Sewerage System Program in Tacoma, Washington.

AIS Site Visits and Outreach

As part of the American Iron and Steel (AIS) provision, EPA conducts outreach to SRF projects through site visits and training to ensure proper implementation of the AIS requirements.

In 2018, the AIS program completed 35 site visits across 10 states. The site visits provide an opportunity for

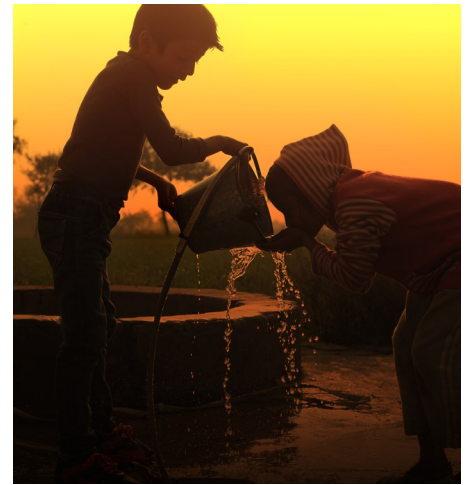
communities to ask project-specific AIS questions and receive EPA recommendations for improving their AIS documentation prior to project completion.

The AIS program also conducted five trainings in Oklahoma (1), West Virginia (1), Florida (2), and Wisconsin (1), providing technical assistance to engineers, contractors, suppliers, and manufacturers involved with CWSRF projects. The trainings explain how AIS requirements apply to SRF projects and outline the responsibilities of each stakeholder, including federal and state governments, in its implementation. They also provide an opportunity for engineers, contractors, suppliers, and manufacturers to note project-specific or product-specific AIS obstacles and receive EPA feedback on potential solutions. The program has an open offer for EPA-led AIS trainings to all state SRF programs.

AIS Waiver Requests

While the vast majority of the country's water infrastructure projects use iron and steel made in America and there is a strong preference for using American-made products in EPA-funded projects, SRF projects are permitted to request a project-specific waiver through their state for products of foreign or unknown origin. In 2018, EPA received and processed [17 CWSRF project-specific waiver requests](#), of which, 1 was approved, 8 were withdrawn or denied, 2 are currently in process, and 6 await management decision. The AIS program continues to work with the states and its CWSRF projects





to identify domestic alternatives that meet project specifications. EPA may grant a waiver in instances where (1) applying these requirements would be inconsistent with the public interest; (2) iron and steel products are not produced in the U.S. in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

Coordination of AIS Requirements Across the Federal Government

AIS requirements have been incorporated into various other programs. This year, the AIS program continued collaborating with the U.S. Department of Agriculture (USDA) and the WIFIA program through trainings and site visits. Because the AIS requirements are identical, the CWSRF AIS program is supporting its consistent implementation across these federal programs. As part of the same Office, the CWSRF AIS program is supporting the WIFIA program with general AIS implementation.

Through an Interagency Agreement (IAA), the USDA and EPA hold bi-weekly calls to discuss AIS-related inquiries and project-specific waivers, provide updates on national waivers, and share AIS resources. The AIS program participated in USDA AIS trainings in Utah, Minnesota, Ohio, and South Carolina to help answer questions from USDA state engineers and other stakeholders on AIS implementation. USDA state engineers were invited to attend CWSRF site visits for observation and have attended several site visits in multiple states.

WATER INFRASTRUCTURE AND RESILIENCY FINANCE CENTER

EFAB Meetings

The [Environmental Financial Advisory Board](#) (EFAB) is an advisory committee chartered under the Federal Advisory Committee Act to provide advice and recommendations to EPA on creative approaches to funding environmental programs, projects, and activities. In FY 2018, OWM hosted two EFAB meetings to hear from experts on environmental finance issues, presidential initiatives, and EPA priorities. The group also discussed progress on current agency charges and preliminary recommendations from the workgroups.

February 2018 Meeting in Washington, DC:

Environmental finance discussions covered the White House Infrastructure Plan and EPA 2018 priorities. Specific financial questions were finalized as agency charges to the Board to provide recommendations to EPA. These five charges included: Pre-Disaster Resiliency Investment and Financing, Public-Private Partnerships Predevelopment Practices, Regionalization Financing Strategies, Chesapeake Bay Metrics of Success, and Alaska Waste Backhaul Financing Strategies.

August 2018 Meeting in Chicago, IL: Environmental finance discussions focused on nutrient financing in EPA Region 5 and water infrastructure financing for Chicago's drinking water and wastewater utility, the Metropolitan Water Reclamation District of Greater Chicago. Draft recommendations for the five agency charges discussed



at the February 2018 meeting were discussed with agency representatives.

Water Finance Forums

Over the past few years OWM's Water Finance Center has held regional [Water Finance Forums](#) in partnership with EPA's Regional Offices and the regional Environmental Finance Centers. This suite of forums was completed for all 10 regions in 2018. These forums brought together communities with water infrastructure financing needs in an interactive peer-to-peer networking format to share how local utilities have financed water infrastructure projects. The forums also provided an opportunity for local decision makers to meet key state funding and technical assistance experts. In 2018, forums were held in:

Casper, WY (April 2018): Collaborated with EPA Region 8 and National Rural Water Association Environmental Finance Center. Topics included ways small drinking water and wastewater systems can increase financial viability and get access to funding, develop operational resiliency, and build stakeholder understanding and support.

Findlay, OH (June 2018): Collaborated with EPA Region 5 and Great Lakes Environmental Finance Center. Topics focused on funding sources for small drinking water systems, value of water communication, financing private lead line service replacement, regionalization, water tank maintenance, and succession planning & operator recruitment.

Water Finance Clearinghouse New Addition: Water Finance Learning Modules

The [Water Finance Clearinghouse](#) was released in July 2017 and received over 45,000 site visits by the end of FY 2018. This year the Water Finance Center saw a demand for additional information on how to access funding sources and finance specific types of infrastructure projects. To meet this need, the Center began collaborating with external stakeholders to develop web-based learning modules on different water finance topics to include in the Clearinghouse.

The Septic Financing learning module was released in September 2018. This web-based learning module is a modern learning experience that can be used as a new way for local decision makers/borrowers to make decisions for their water infrastructure investments. Additional water finance topics will come out in FY 2019 that focus on the SRFs, WIFIA, financing water loss control, cost benefits of municipal/agricultural partnerships, and financing stormwater management.

WATER POLLUTION CONTROL PROGRAM GRANTS

Section 106 Program Success

Section 106 of the Clean Water Act authorizes EPA to provide federal assistance to states, territories, the District of Columbia, interstate agencies, and eligible tribes to establish and implement water pollution control programs. This funding supports ambient water quality monitoring, water quality standard and total maximum daily load development, NPDES permitting and



enforcement, training and public information. EPA provided approximately \$225 million in section 106 funding to prevent and control water pollution in FY 2018.

State and Interstate Water Pollution Control Grants

EPA provided \$182 million in section 106 grant funding to state and interstate agencies to protect and restore water bodies. Increasingly, EPA and states are working together to develop basin-wide approaches to water quality management. The grant program encourages states to take a watershed protection approach which looks at state water quality problems holistically and targets finances to the most important problems.

Tribal Water Pollution Control Grants

Section 106 grants are a crucial, dedicated source of funding for developing, maintaining, and expanding tribal programs designed to prevent, control, and eliminate water pollution. In FY 2018, the tribal set-aside was approximately \$25.4 million. Of the 565 federally recognized tribes, approximately 330 meet the criteria to receive section 106 funding, and 273 of these tribes were eligible to receive grants in FY 2018.

State and Tribal Water Monitoring Initiative

Using approximately \$17.4 million in FY 2018, OWM and the Office of Wetlands, Oceans and Watersheds (OWOW) continue to work with states and tribes to enhance their water quality monitoring programs and implement a multi-year, statistically valid survey of the nation's waters. In FY 2018, states and tribes conducted sampling and reported water quality monitoring data for

the National Rivers and Streams Conditions Assessment. The monitoring initiative allows EPA, states, and tribes to enhance their water quality monitoring programs and implement a multi-year, statistically valid survey of the nation's waters. In FY 2018, states and tribes conducted sampling and reported water quality monitoring data for the National Rivers and Streams Conditions Assessment. The monitoring initiative allows EPA, states, and tribes to report on the condition of the nation's waters and make progress toward assessing trends in water condition in a scientifically defensible manner.

Long Term Monitoring Authorized Under the Water Infrastructure Improvement for the Nation (WIIN) Act

Section 5004(d) of the WIIN Act enacted in December 2016 provides that EPA, "in conjunction with affected States, Indian tribes and local governments, shall, subject to the availability of appropriations, develop and implement a program for long-term water quality monitoring of rivers contaminated by the Gold King Mine release." In FY 2018, \$4 million was appropriated for the program. OWM, working with OWOW; Regions 6, 8, and 9; and impacted states and tribes, developed a long-term monitoring strategy, including identifying short-term monitoring priorities and a long-term approach for determining state and tribal grant funding levels. In FY 2018, OWM released grant guidance for the award of WIIN Act funding to states and tribes using CWA Section 106 authority.



GRANTS & UNDERSERVED COMMUNITIES' INFRASTRUCTURE

Tribal Set-Aside Annual Accomplishments

In FY 2018, OWM committed \$2 million of [Clean Water Indian Set-Aside](#) (CWISA) funds through an interagency agreement with Indian Health Service (IHS) for education, training, and technical assistance for tribal wastewater treatment operators. IHS plans to hire up to six additional utility consultants, award contracts, and deliver trainings.

In FY 2018, OWM used \$31 million to fund 59 construction projects improving wastewater sanitation services for more than 10,000 homes. OWM leveraged an additional \$36 million with contributions from other federal partners and tribes. Decentralized/on-site treatment projects were the most common type of project funded, but the majority of funds were used for collection piping, which has the greatest impact when measured by number of homes.

Alaska Native Villages Program

In 2018, OWM's [Alaska Native Villages](#) (ANV) program will distribute \$20 million in calendar year 2018 to fund ten drinking water and wastewater projects to improve water services to nearly 2,000 homes. It is estimated that two hundred gallons of raw sewage per day are eliminated from the environment for each household connection made to adequate wastewater services. The ANV program also delivered training and technical assistance services to ANV communities.

In the past two years, more than 16,000 tribal homes were provided with improved wastewater sanitation service in coordination with other federal partners. However, the need remains. There are more than 63,000 tribal homes lacking access to basic sanitation services which costs an estimated \$1 billion to address. (Data source: IHS data - December 2017)

Small and Rural Community Technical Assistance Grants

Congress provides funding through a yearly appropriation of approximately \$1 million for nonprofit organizations to provide technical assistance to small and rural communities for managing their wastewater and decentralized treatment systems. This appropriated funding is competed and awarded as a grant to the most suitable applicant. EPA awarded the FY 2016 appropriated funding grant to Rural Community Assistance Partnership (RCAP), which is using this funding to provide technical assistance to 36 small wastewater systems and three communities using decentralized systems. RCAP has also conducted 13 trainings to small publicly owned wastewater systems and nine trainings to communities using decentralized systems.

For the FYs 2017 and 2018 appropriated funding, EPA conducted a competition for a combined grant of \$2.2 million to provide technical assistance to small wastewater treatment systems. Through this competition, EPA selected RCAP to receive the grant and awarded it in July 2018.



U.S.-Mexico Border Water Infrastructure Program FY 2017 Annual Report

Working closely with U.S. and Mexican federal, state, and local partners, OWM's [U.S.-Mexico Border Water Infrastructure Program \(BWIP\)](#) provided access to safe drinking water to 70,000 homes and wastewater collection and treatment services to 673,000 homes for the first time. OWM released an accomplishments report for the U.S.-Mexico Border program: "U.S.-Mexico Border Water Infrastructure Program FY 2017 Annual Report." This report highlights specific projects including recent data on homes served. From FY 2003-FY 2017, the BWIP funded 128 projects; 108 of the projects have completed construction. The program has developed the capacity to treat approximately 280 million gallons per day of raw wastewater in the border area, improving the quality of surface and groundwater along the border.

Brownsville, Texas, Wastewater Collection System and Residential Connections

Approximately 2,600 Brownsville residents benefit from a wastewater collection and residential connections project to the Farm to Market road (FM) 511-802 Colonia homes in Cameron County that is partially funded via OWM's U.S.-Mexico Border Program. Most homes' onsite systems were not in regulatory compliance due to small lot sizes, high water tables, soil conditions, and poor stormwater drainage. The project included construction of a wastewater collection system, installation of yard-line connections for over 650 homes, and decommissioning of the malfunctioning onsite systems. This project provides

access to first-time wastewater services, eliminates exposure to untreated or inadequately treated wastewater discharges of approximately 0.21 million gallons per day, and reduces water pollution and the risk of waterborne diseases. The total cost of the project is \$29.6 million. EPA leverages \$3.6 million of federal funds with \$25.3 million from the Texas Water Development Board and \$0.7 million from the City of Brownsville. Construction is scheduled to be completed by September 30, 2018.

2017 Annual Report for the Clean Water & Drinking Water Grants to Territories & DC

In FY 2018, EPA released a joint [FY 2017 clean water and drinking water grant program accomplishments report for the U.S. Territories and the District of Columbia](#). The report highlights completed projects or projects begun in FY 2017 in the U.S. Territories of American Samoa, Guam, Commonwealth of Northern Mariana Islands, and U.S. Virgin Islands as well as the District of Columbia. Projects detailed in this report include water loss reduction, low impact development retrofits, nitrogen discharge reduction, reducing pathogens through water system improvements, and asset management. The report also provides contextual background on the programs as well as the FY 2017 allotments, which total over \$46 million in available funding for these communities.

Tools



Did you know? This year, OWM trained almost 500 professionals in the fundamentals of federal pretreatment standards, developing local limits, issuing user permits, performing compliance oversight activities, and performing enforcement responsibilities.

TRAINING

National Stormwater and Pretreatment Workshops

The Office of Water awarded a five-year grant to the Association of Clean Water Administrators (ACWA) to plan and conduct training workshops across the United States for state permitting authorities. In FY 2018, ACWA conducted a stormwater training in February 2018 in Atlanta, Georgia, and a pretreatment training in April 2018 in Washington, D.C., which was attended by more than 80 attendees from 25 states, the Office of Water, the Office of Enforcement and Compliance Assurance, and 9 EPA Regions.

Decentralized Wastewater Webcast Series

EPA's Decentralized Wastewater Management MOU Partnership sponsors [webcasts](#) to discuss topics of interest to the decentralized community. This year, the webinars highlighted an innovative septic finance program in Suffolk County, New York and State septic system data management practices.

Suffolk County, New York Septic Improvement Program (March 2018): Representatives from Suffolk County shared information on their Septic Improvement Program, a grant program that assists homeowners with replacing their conventional septic systems with advanced treatment units to significantly reduce nitrogen pollution.

State Examples of Septic System Data (August 2018):

Lack of comprehensive septic system data has hampered progress in septic system management. This webinar highlighted three state examples of managing septic system data. Staff at the Virginia Department of Health, Florida Department of Health, and the Minnesota Pollution Control Agency showcased their databases and outlined approaches to standardizing data and the benefits of having readily available data.

Training POTW's on Pretreatment Implementation

In FY 2018, OWM reinvigorated its publicly owned treatment works (POTW) [pretreatment training efforts and held three workshops](#) for nearly 460 professionals charged with the day-to-day implementation of a state or EPA authorized POTW pretreatment program. The workshops included presentations on the fundamentals of federal pretreatment standards, developing local limits, issuing user permits, performing compliance oversight activities, and performing enforcement responsibilities.

NPDES Permit Writers' Training Course

In FY 2018, OWM continued to support new state and EPA Regional National Pollutant Discharge Elimination System (NPDES) permit writers through the [NPDES Permit Writers' Course](#). The NPDES Permit Writers' Course has trained thousands of permit writers over more than two decades on the fundamentals of NPDES permit development. This training helps permit writers ensure that NPDES permits are technically and legally sound and



correctly implement applicable technology and water quality standards. OWM conducted four week-long NPDES permit writers' courses at sites across the country and updated course material to reflect new tools available to permit writers, such as the U.S. Geological Survey/ EPA Surface Water Toolbox (SWToolbox) for streamflow calculations.

NPDES Whole Effluent Toxicity Training Course

OWM continues to provide its [NPDES Whole Effluent Toxicity \(WET\) course](#) to EPA Regions and states in support of new permit writers. The course continues to be well received by EPA Regions and states. This year, EPA provided the course to Idaho who became the 47th NPDES authorized state. Idaho requested this course for its permitting staff and to kick off its NPDES WET program. The course comprehensively covered NPDES WET permitting implementation including how WET tests are conducted, data interpretation and diagnostic

approaches for identifying possible sources of toxicity. The course provided both instructional presentations and innovative hands on teaching approaches such as viewing the actual test species and group exercises. Continuing to train generations of new permit writers is essential to water quality protection.

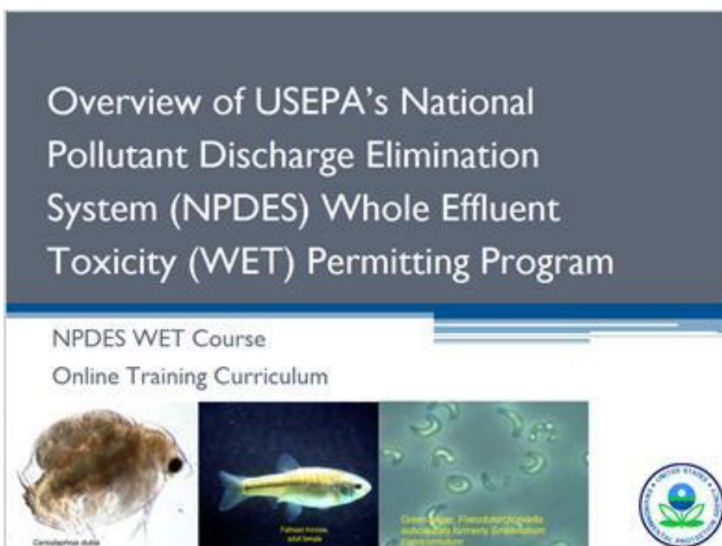
Green Infrastructure Webcasts

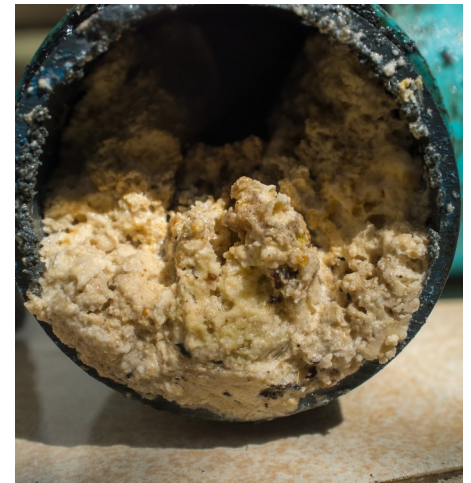
OWM continued the Green Infrastructure Program's [Green Infrastructure webcast series](#). Initiated in 2014, the series is geared toward public officials and other stakeholders that are interested in implementing green infrastructure for the first time or augmenting an established program. Attendees have the opportunity to learn from and interact with leading researchers and industry practitioners on a variety of topics that highlight the environmental, economic, and social benefits of green infrastructure.

SUSTAINABLE WATER UTILITIES

Effective Utility Management Partnership

In FY 2018, OWM continued to assist wastewater utilities with access to infrastructure funding and continued to ensure these utilities are effectively managed. This helps protect our infrastructure investments and promotes sustainable operations over the long term. These efforts are part of a larger partnership with major water sector associations and other stakeholders. The centerpiece of this work is [Effective Utility Management \(EUM\)](#), which is based on the Attributes of Effectively Managed Utilities. EUM practices are the foundation for building and sustaining the technical, managerial, and financial





capacity of the drinking water, wastewater, and stormwater systems that make up the water sector. EPA works with leading water sector organizations to support the water sector in developing and implementing these practices.

Compendium of Effective Utility Management Case Studies

Together with EUM partner organizations, EPA completed a compendium of EUM Case Studies. These case studies highlight for water utilities various improvements their peers have seen as a result of implementing EUM. For example, OWM played an important leadership role in bringing together water sector leaders to address other critical issues. EPA also planned and co-hosted a major convening of utilities, associations, educators, and community service organizations to identify actions that could be taken at the national level to help address the most pressing workforce issues facing the water sector.

Effective Utility Management Workshops

EPA, with support from ten water sector organizations, completed nine Effective Utility Management workshops with utilities around the country in FY 2018. These workshops help utilities assess their operations and develop a plan for improving performance based on the EUM Attributes. EPA also hosted a major convening and a follow-up meeting of utility leaders on ways to enhance peer-to-peer learning opportunities by enabling higher capacity utilities to help those with lower capacity.

FRAMEWORK & ASSISTANCE

Water Reuse/Resource Recovery

OWM assisted Office of Groundwater and Drinking Water (OGWDW) with development of the 2017 [Potable Reuse Compendium](#) as a supplement to the 2012 EPA Guidelines for Water Reuse document, which was released in January 2018. This document focuses on providing updated information and guidance on both direct and indirect potable reuse practices, including a series of seven case studies.



Permits



Did you know? A NPDES permit is required for the discharge of pollutants from any point source into waters of the US. Currently, EPA estimates that approximately 999,000 discharges are covered by NPDES permits—about 95 percent are covered by general permits and 5 percent are covered by individual permits.

Final MS4 General Permit Remand Rule

OWM continues to work with permit writers in EPA Regions and states to assist them in developing municipal separate storm sewer systems (MS4) permits that are consistent with the [MS4 General Permit Remand Rule](#). In December 2016, OWM finalized modifications to the Phase II stormwater regulations relating to the use of general permits for small MS4s in response to a Ninth Circuit remand of these regulations. The rule ensures that the requirements of all small MS4 permits are subject to the necessary permitting authority review and the public participation steps as defined in the Clean Water Act. The rule clarifies that the permitting authority – and not the small MS4 – must determine what permit terms and conditions are necessary to meet the applicable permit standard. The rule also specifies that permit terms and conditions must be expressed in a “clear, specific, and measurable” manner.

NPDES Idaho Delegation

On June 5, [EPA approved Idaho’s application](#) to run the NPDES program. The State became the 47th to obtain approval to administer its own program and now has the authority to regulate point source discharges occurring within the State but not from tribal lands or into tribal waters. Idaho will be phasing in the administration of the program over four years, starting with individual municipal permits and the pretreatment program. This approval was the culmination of a collaborative review process

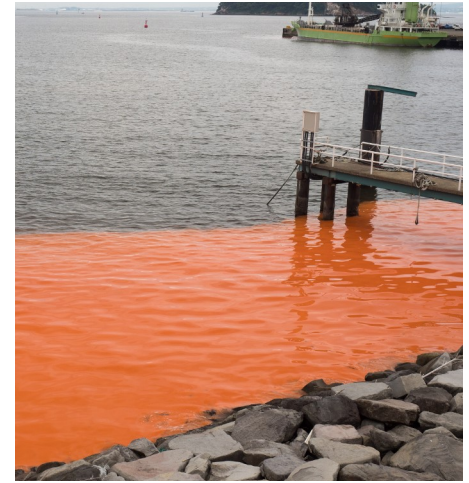
conducted by a Region 10-led workgroup that included staff from OWM, the Office of the General Counsel, and the Office of Enforcement and Compliance Assurance.

Protecting U.S. Waters from Non-Recreational Vessel Discharges

In 2018, OWM continued to lead the development and administration of the [Vessel General Permit](#) and as of January, assumed responsibility for administration of the [Small Vessel General Permit](#). These two permits address 27 different types of non-recreational vessels that include commercial fishing, tankers, container ships, cargo ships, cruise ships, barges, etc. There are approximately 200,000 domestic and foreign vessels subject to such a regulatory scheme and their permits include a range of terms and conditions such as required best management practices, numeric effluent limitations, inspection, monitoring, reporting, and recordkeeping. The goal of these two permits is to protect U.S. waters from negative effects from discharges, including potentially invasive species from ballast water and hull fouling, from non-recreational vessels (e.g., commercial fishing, tankers, container ships, cargo ships, cruises ships, barges). As part of permit administration, OWM operates and supports an electronic reporting system, processing 70,000 reports annually.

Animal Agriculture Implementation

In FY 2018, OWM continued its efforts to protect water quality from adverse impacts of animal manure. OWM



supported Regions' and states' efforts to implement the NPDES program for concentrated animal feeding operations by providing assistance with regulatory interpretation, development of general permit and state program language, and resolution of watershed-based technical and permitting issues.

Final Rule: Public Notification for CSOs in the Great Lakes

On January 8, EPA published the final rule, Public Notification Requirements for Combined Sewer Overflows to the Great Lakes. The rule implements Section 425 of the Consolidated Appropriations Act of 2016, which requires EPA to work with the Great Lakes States to establish public notification requirements for combined sewer discharges to the Great Lakes. The requirements address signage, initial notification of local public health departments and other potentially affected entities, initial notification of the public, annual notice provisions, and requires the development of a public notification plan.

This rule protects public health by ensuring timely notification to the public and to public health departments, public drinking water facilities and other potentially affected public entities, including Indian tribes. It provides additional specificity beyond existing public notification requirements to ensure timely and consistent communication to the public regarding combined sewer overflow (CSO) discharges to the Great Lakes Basin. Timely notice may allow the public and affected public entities to take steps to reduce the public's potential exposure to pathogens associated with human sewage.

Multi-Sector General Permit for Industrial Stormwater Discharges

Industrial stormwater can come from a range of industrial sectors conveying stormwater pollutants. EPA is funding a study by the National Academies of Sciences, Engineering, and Medicine (NASEM) to receive input on the [Multi-Sector General Permit \(MSGP\)](#) and its effectiveness in protecting waterways from industrial stormwater impacts. The study has three major focus areas: 1) the adequacy of stormwater benchmark monitoring requirements, 2) numeric retention standards feasibility, and 3) analysis of certain types of facilities' activities and discharges to determine if more rigorous requirements are appropriate.

In 2018, NASEM held four meetings consisting of closed sessions, public sessions, and sessions where invitees shared information on pertinent issues. Issues discussed include: the challenges of the industrial stormwater monitoring, state perspectives and permitting differences from the MSGP, the utility of collected industrial stormwater data, changes needed to make the data more useful, EPA's benchmark monitoring overview and industrial monitoring history, and stormwater retention issues.

Timeliness of Permit Issuance

The FY 2018-2022 EPA Strategic Plan includes a strategic measure of making all permitting-related decisions within six months by September 30, 2022. In response, the NPDES Permit Timeliness Kaizen team was formed to address issues of NPDES permit issuance timeliness. The team participated in a Kaizen event from



January 22-26, 2018, to evaluate the permit issuance process for new EPA-issued NPDES permits. After the January event, the NPDES Permit Timeliness Kaizen team developed recommendations for visual management tools.

Reviewing State and EPA Regional Office NPDES Programs

EPA ensures the integrity of the NPDES permitting process by conducting permit and [program quality reviews](#) (PQRs) of state and regional NPDES programs. In FY 2018 OWM launched a new set of standardized review tools to support the next five-year PQR cycle between FY 2018 and FY 2022. The new cycle's tools were updated to make the PQR process more consistent, easier to complete, and more efficient. OWM and EPA Regional Offices remain committed to maintaining and improving NPDES permit and program health by beginning to implement new cycle PQRs and by continuing to support the completion of identified action items from prior PQRs.

Dental Effluent Guidelines

In FY 2017, OWM finalized the [Dental Effluent Guidelines](#) with the Office of Water's Office of Science and Technology (OST). The final rule promulgated pretreatment standards to reduce discharges of mercury from dental offices into POTWs. In FY 2018, OWM and OST finalized a frequently asked questions document for dental offices and POTWs to assist with rule implementation. OWM also finalized guidance on the NPDES Electronic Reporting Rule with Office of Enforcement and Compliance Assurance and the Cross-

Media Electronic Reporting Rules with the Office of Environmental Information.

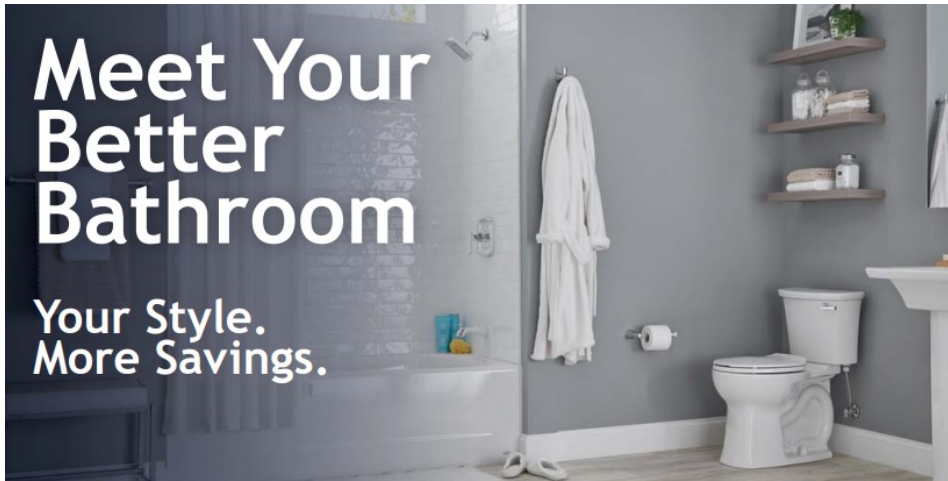
Pretreatment Program Implementation

In FY 2018, OWM continued its work to support EPA Regions, states, and POTWs in implementation of the of NPDES pretreatment program. Currently, EPA runs the pretreatment program in 14 states and is responsible for performing program reviews, inspections, and audits. OWM assisted the EPA Regions in performing 46 annual report reviews, 3 local limit reviews, 1 sewer use ordinance review, 1 industrial waste survey, 5 audits, and 2 inspections.

Nutrients Permitting Requirements for Municipal Facilities

In October 2017, OWM developed a new methodology for synthesizing [data on nutrient effluent limitations and monitoring requirements](#) in NPDES permits for municipal dischargers. Monitoring nutrient concentrations in effluent from municipal facilities can help inform natural resource and public health managers about key sources of nutrients in waters. Setting effluent limits for nitrogen and phosphorus can substantially reduce nutrient loadings to water bodies, providing many benefits to the environment, public health, and the economy alike. Limiting nitrogen and phosphorus can help prevent nuisance and harmful algal blooms and help maintain healthy and diverse aquatic plant and animal communities. By preventing harmful and toxic algal blooms, communities can maintain quality natural resources like rivers, lakes, coastlines, and beaches, as well as public drinking water supplies and economies dependent on healthy surface waters.

Partnerships



Did you know? WaterSense has helped save a LOT of water, but it has also saved the energy that would have been used to heat that water – enough to power 34.1 million homes for one year.

WATERSENSE

Let's Keep Saving Water America!

WaterSense started the 2nd decade of its program accumulating even more savings. Since June 2006, the program has helped save more than 2.7 trillion gallons of water—more than the amount used by all U.S. households for 98 days. In 2017 alone, 631 billion gallons were saved with WaterSense labeled products. Labeled products are independently certified to use at least 20 percent less water and perform as well or better than standard models. At the end of 2017, more than 27,000 different models of toilets, bathroom faucets and accessories, showerheads, flushing urinals, flushometer-valve toilets, weather-based irrigation controllers, and pre-rinse spray valves had earned the label. EPA estimates WaterSense labeled products have helped Americans save \$63.8 billion in energy and water bills. More than

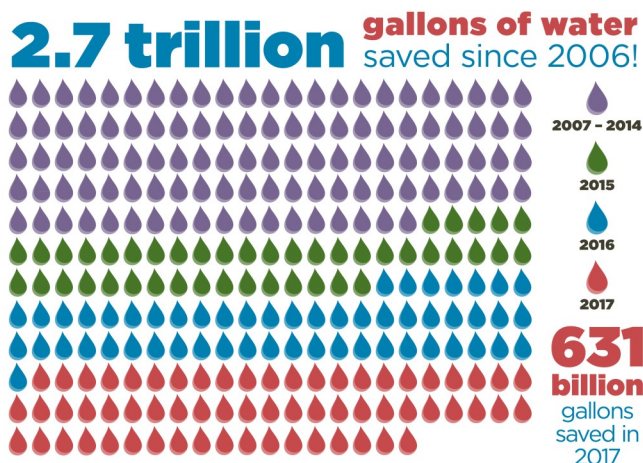
1,900 utility, manufacturer, retail, builder, and other organizational partners helped Americans save water, energy, and money with products, programs, and promotions.

Helping Multifamily Properties Measure Water Efficiency

In early October, WaterSense added a new tool to its toolbox that will help multifamily properties improve their water use. Working with the ENERGY STAR program, WaterSense used results from a national survey conducted by Fannie Mae to develop the first EPA Water Score. Multifamily property managers can now enter information into Portfolio Manager and receive a 1-100 score that shows how their building uses water compared to similar properties across the country. WaterSense has also developed a series of resource guides to help property managers improve their score.

Your Better Bathroom. Your Style. More Savings.

WaterSense developed new materials to help consumers learn how easy it is to get their dream bathroom with WaterSense labeled products. The campaign, which will be used by EPA and WaterSense partners, highlights how consumers can either start by looking for simple ways to save water in the bathroom or go big with an entire remodel using WaterSense labeled products that come in a variety of price points and styles. For simple





updates to the bathroom WaterSense created the “bath hack” series. The first in the series captures how to replace a showerhead with a WaterSense labeled model. From there the videos walk through replacing an aerator on a faucet and lastly a flapper in the toilet.

Fix a Leak Week: Partners Go the Extra Mile to Track Down Water Leaks

During the tenth annual Fix a Leak Week, March 19-25, WaterSense partners let their water-saving tips flow by encouraging community members to find and fix wasteful leaks indoors and out. More than 45 partners held events across the United States and Canada, which included races, contests, workshops, and outreach campaigns. These events and other efforts resulted in more than 500 online and print articles and press releases, with an overall circulation of more than 350 million. Citrus County Utilities (Florida), Athens-Clarke County (Georgia), and the City of Hays (Kansas) enlisted the help of elementary school students – providing them with the tools to become leak detectives in their own homes. Partners engaged with the public in person and were also active on a variety of social media platforms including Twitter, Facebook, and Instagram.

Advancing Outdoor Water Efficiency

Following the release of a specification in September 2017, WaterSense saw the first labeled irrigation spray sprinkler bodies appear on store shelves in 2018. Pressure regulated labeled sprinkler bodies will help reduce the water waste that can happen when high pressure leads to excessive flow rates, misting and

uneven coverage. WaterSense also continued work on developing test methods to support a future specification for soil moisture based irrigation controllers. The program promoted sound practices such as microirrigation and continued its successful webinar series carried out in partnership with the Alliance for Water Efficiency, which reached more than 750 attendees.

WaterSense Partners of the Year Awards

On October 5, 2017, the 2017 WaterSense award winners were announced at WaterSmart Innovations Conference and Exposition in Las Vegas, Nevada. WaterSense partners across the country help save water for future generations by advancing and promoting WaterSense and water efficiency.

In 2017, seven partners were recognized with Sustained Excellence Awards for their continued high level of support: Cobb County (Georgia) Water System, KB Home, Kohler Co., Delta Faucet Company, The Home Depot, Sonoma-Marin (California) Saving Water Partnership, and the Athens-Clarke County (Georgia) Public Utilities Department.

Five partners were recognized as Partners of the Year: Metropolitan North Georgia Water Planning District and City of Charlottesville (Virginia) Citrus County (Florida) Utilities, G3, Green Gardens Group, and American Standard (Part of LIXIL).

WaterSense also presented seven Excellence Awards, which recognize organizations that stood out in one or more evaluation categories: Alliance for Water Efficiency,



Niagara Conservation Corp., City of Plano (Texas), City of Fort Worth (Texas), Metropolitan Water District of Southern California, City of Durham (North Carolina) Water Management, Sonoma-Marín (California) Saving Water Partnership, and The Toro Company.

SEPTICSMART WEEK

Celebrating the 6th Annual SepticSmart Week

EPA's SepticSmart Week Program campaign informs homeowners about proper septic system care and maintenance, assists local agencies in promoting homeowner education and awareness, and educates local decision makers about infrastructure options to improve and sustain their communities. The 6th Annual Septic Smart Week occurred September 17-21. Each year, states and organizations submit proclamations of support and commitment to SepticSmart Week; this year, the program received 16. The Decentralized Memorandum of Understanding (MOU) Partnership also updated their SepticSmart Week Social Media Guide with new social media posts, blogs, press releases, local outreach examples, and much more.

New SepticSmart Program Materials

EPA's Decentralized Wastewater Program created several new SepticSmart Week products for our Partners, states, and homeowners. They developed seven new "quick tips" with images and messages outlining the catch-phrases of SepticSmart Week. They also designed a new diagram illustrating the movement of wastewater and

components of a septic system.

SepticSmart Education Campaign

As part of the SepticSmart Week 2018 campaign, the program continued efforts to educate the public on decentralized systems through new publicly-available materials. This included two new posters educating those who use non-residential septic systems, one for restrooms in parks/rest stops and another for restaurants.

The posters educate individuals about what can and cannot go down the drain of an establishment with a septic system. Also, recognizing the need to develop accurate, consistent diagrams of the varying types of septic systems and how they work, the program created ten new diagrams of the most common types of septic systems which are also used in the Water Finance Center's Septic Systems Finance Learning Module.



COLLABORATION & SYNERGY

Decentralized Wastewater MOU Partnership

EPA's [Decentralized Wastewater MOU Partnership](#) works collaboratively to encourage proper decentralized wastewater system management and protect public health and water resources. The 18 organizations of the MOU Partnership met at EPA Headquarters on November 14-15, 2017 for the MOU re-signing ceremony. At the MOU signing event, 18 public and private sector organizations expressed their intent to work together to improve management of decentralized wastewater.



Campus RainWorks Challenge

OWM's Green Infrastructure program held the [6th annual Campus RainWorks Challenge](#), a design competition that engages with the next generation of environmental professionals to showcase the environmental, economic, and social benefits of green infrastructure practices. Student teams design an innovative green infrastructure project for their campus that addresses stormwater pollution while benefitting the campus community and the environment. During this round, 87 student teams submitted green infrastructure designs for their respective campuses to compete in one of two categories: master plan or demonstration project. The University of California at Berkeley and the University of Maryland at College Park were the first and second place winners in the master plan category. The University of Illinois at Urbana-Champaign and The University of New Mexico were first and second in the demonstration project category. The seventh annual Challenge opened for registration in September 2018.

“Today’s students are tomorrow’s innovators. Through EPA’s Campus RainWorks Challenge, we are harnessing the creativity and enthusiasm of college students to solve local stormwater problems and better protect the environment.” - Office of Water Assistant Administrator David Ross

WEFTEC 2017

EPA joined in another successful year at the Water Environment Federation’s WEFTEC. The Water

Environment Federation (WEF) held its 90th annual conference in Chicago, Illinois from September 30 – October 4, attracting 22,860 attendees. WEFTEC provides EPA with the opportunity to coordinate with the water infrastructure industry to promote Agency programs, network with industry partners, share new resources and tools, and learn about industry best practices. EPA participated in approximately three dozen sessions and hosted fifteen speaker sessions on a variety of topics, including a demonstration of the Water Finance Clearinghouse, technology innovation clusters, and green infrastructure, among others.

Streamlining the Review and Permit Process for Highway Infrastructure

Through EPA’s Interagency Agreement with the Federal Highway Administration (FHWA), OWM’s National Transportation Liaison coordinated and participated in transportation research related to the environmental review process, stormwater management, and other environmental programs. In February 2018, the liaison coordinated the issuance of an [interagency working agreement with FHWA](#) to better coordinate and streamline the environmental review and permitting process for highway infrastructure projects. In May 2018, the Transportation Liaison supported EPA Region 3’s Transportation Municipal Separate Storm Sewer System (MS4) Permitting Forum by compiling and presenting permit program information from state transportation departments. In July 2018, OWM presented on EPA’s Water Financing Clearinghouse and existing federal stormwater funding sources available to transportation



permittees during a public [webinar hosted by the Transportation Research Board](#). In September 2018, OWM published the Transportation Stormwater Permit Compendium, which presents examples of permitting approaches found in MS4 permits and that address linear environments.

Vessel Discharge Research

In 2018, OWM oversaw a \$3.1 million interagency agreement with the Naval Research Laboratory to: (1) evaluate the effectiveness of combining open ocean exchange and treatment of ballast water; (2) investigate novel, indirect sensing methods to assess and quantify biofouling loads on vessels hulls; (3) evaluate alternative test methods to measure organism viability (i.e., ability to reproduce) in ballast water discharges; and (4) update a protocol for the verification of ballast water treatment technology testing to include both shipboard and land-based testing procedures.

Green Infrastructure Engagement

The green infrastructure program worked with the Green Infrastructure Leadership Exchange Network to organize a federal roundtable session at their national meeting to engage directly with municipal representatives about how federal resources could be utilized to implement green infrastructure. Representatives from programs across EPA, the National Oceanic and Atmospheric Administration, the U.S. Forest Service, the U.S. Fish and Wildlife Service, the Department of Transportation, and the Federal Emergency Management Agency were on hand to discuss their programs. Around 90 participants from over 40 cities were represented at the annual

meeting.

National Stormwater Roundtable

In February 2018, OWM supported a [National Stormwater Roundtable](#) in coordination with the Association of Clean Water Administrators (ACWA) for state and federal regulators. The national permitting meeting supports the implementation of federal and state municipal, industrial, and construction stormwater programs nationwide. Attendees shared information on ways to reduce water quality impacts due to stormwater through best management practices, innovative state programs and initiatives, new technologies, tools, training, and guidance and facilitated discussions on national program enhancements and improvements.

Long-Term Stormwater Planning

Throughout 2018, EPA continued to work with Santa Fe, New Mexico; Burlington, Iowa; Hattiesburg, Mississippi; and Rochester, New Hampshire to develop long-term stormwater plans that will serve as national models. In October 2016, EPA released a draft guide, *Community Solutions for Stormwater Management: [A Guide for Voluntary Long-Term Planning](#)*, to promote comprehensive, community-wide planning approaches to manage stormwater. As communities continue to grow and develop their local economies, they often look for sustainable and effective approaches to reduce these existing and emerging sources of pollution. Through this voluntary approach, communities can prioritize actions related to stormwater management as part of capital improvement plans, integrated plans, master plans, or other planning efforts. EPA will leverage the lessons



learned from these efforts by sharing information related to lowering barriers to long-term stormwater planning, making progress on human health and water quality objectives, and decreasing the costs of stormwater management.

Wastewater Treatment Technology and Research

In 2018, OWM continued to provide technical support to EPA regions and Office of Water program offices on wastewater technology performance areas and actively collaborated with internal and external stakeholders on wastewater studies and research projects. Areas of technical support included nutrient removal and recovery, energy management, and water reuse. OWM's research coordination efforts included collaborating with the National Water Program research coordination team and the Office of Research and Development in various wastewater projects of the EPA Safe and Sustainable Water Resources research plan.

The Water Environment Federation (WEF)/WRF Leaders Innovation for Technology (LIFT) Forum workgroup activities target promoting and expediting the development of sustainable and innovative wastewater technologies and sharing related information with industry stakeholders. OWM actively collaborated with external stakeholders on the LIFT Forum workgroup as well as the Water Environment Research Foundation (WRF) Research Advisory Council for wastewater research and multiple WRF project steering committees and projects.

Animal Agriculture Discussion Group Outcomes

OWM complements its NPDES implementation activities with efforts to strengthen relationships with industry stakeholders – particularly through the Animal Agriculture Discussion Group (AADG), an informal dialogue including representatives from the producer community, trade associations, U.S. Department of Agriculture (USDA), and states. The September 2018 AADG meeting enabled EPA leaders and staff to interact with industry leaders and other stakeholders on issues associated with sustainability and emerging markets in nutrient recovery that offer benefits to farmers as well as to water quality.

In 2018, EPA and USDA's Natural Resources Conservation Service, in partnership with the Animal Agriculture Discussion Group, released Part 2 of the Animal Agriculture, Manure Management and Water Quality series. Part 2 covers the importance of conservation in animal agriculture and conservation practices commonly used on animal agriculture farms. The series includes multimedia features, such as videos and virtual tours of farms and discusses topics including advances in technologies and production systems, measures to protect water quality, and issues involved in on-farm decision-making about manure management.



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