

The cover features three prominent diagonal bands. The leftmost band is filled with vibrant green grass. The middle band shows a close-up of a large, weathered concrete pipe. The rightmost band depicts a calm blue body of water under a cloudy sky. The text is positioned on the left side of the cover.

2019 ANNUAL REPORT

Office of Wastewater
Management



Message from the Director

Colleagues,

Each year, I look forward to celebrating OWM's many accomplishments in this Annual Report. And while I often highlight new innovative programs, by now many of our recent exciting initiatives have been fully incorporated into our programs. Innovation is commonplace in OWM with lasting positive impacts to public health and the environment.

The CWSRF program was established 31 years ago, and we continue to identify new ways to use the program's flexible structure to reach high priority projects. The WIFIA program was created 5 years ago, and we're now prioritizing projects that address lead and emerging contaminants. The NPDES permits program was established in the 1970s, and we're still modernizing our approaches, including outreach so communities have easier access to information about their water quality and making strides in efficiency by reducing backlogs and improving review times.

We are what we repeatedly do, we innovate and we assist communities in protecting their local waters through permitting, financial and other regulatory efforts.

This year, I commend all my colleagues within OWM for continuing to reinforce our identity as an office that develops new ideas, solutions, and approaches to challenges in the clean water sector.



WHO WE ARE

The Office of Wastewater Management (OWM) is part of the U.S. EPA'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.

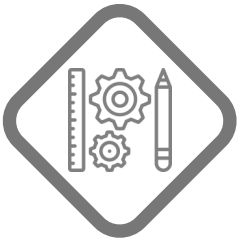


Table of Contents



Funding 3

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 11

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



Permits 14

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 17

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



Funding

Did you know? OWM manages a suite of water financing programs, offering solutions that are a good fit for both small and large, rural and urban communities.

WATER INFRASTRUCTURE FINANCE AND INNOVATION ACT PROGRAM

WIFIA Loan Closings

In 2019, the Water Infrastructure Finance and Innovation Act (WIFIA) program closed nine transactions totaling over \$1.9 billion in loans to help finance nearly \$4.5 billion for water infrastructure projects across the country. [2019 WIFIA borrowers](#) are the Baltimore City Department of Public Works, MD; Indiana Finance Authority, IN; Metropolitan St. Louis Sewer District, MO; City of San Diego, CA; Miami-Dade County, FL; City of Hillsboro, OR; Narragansett Bay Commission, RI; Silicon Valley Clean Water, CA; and Tualatin Valley Water District, OR. In total, these borrowers will save up to \$497 million (compared to typical bond financing) and create approximately 10,000 jobs.

WIFIA Notice of Funding Availability

In April 2019, EPA [announced the availability of financing](#) for \$6 billion in WIFIA loans in its third selection round. The WIFIA program solicited letters of interest from utilities, governmental entities, State Revolving Fund

programs, partnerships, and private corporations to finance water infrastructure projects expected to cost at least \$20 million or \$5 million for small communities (serving less than 25,000 people). It also named four priorities for this selection round: (1) readiness to proceed; (2) provide for clean and safe drinking water, including reducing exposure to lead and addressing emerging contaminants; (3) repair, rehabilitate, and replace aging infrastructure and conveyance systems; and (4) water reuse and recycling. In July 2019, the

WIFIA program received 51 letters of interest requesting \$6.6 billion in WIFIA loans from prospective borrowers for water infrastructure projects in 21 states.



WIFIA Information Sessions

From October 2018 to July 2019, the WIFIA program [hosted a series of information sessions](#) and webinars to explain the benefits of financing with WIFIA loans and prepare prospective borrowers to submit letters of interest. The WIFIA program hosted approximately 125 participants at one-day information sessions in 6 cities: Seattle, WA; Chicago, IL; Boston, MA; Atlanta, GA; Washington, D.C.; and Phoenix, AZ. The program provided the same information via webinar to nearly 400 additional people.



Template Term Sheet

In fall 2019, EPA made available a [template term sheet](#) for public system borrowers. It is intended to provide a reference for the potential terms and conditions applicable to WIFIA loans with public system borrowers, including various options that the WIFIA program can offer.

CLEAN WATER STATE REVOLVING FUND PROGRAM

Program Success

In 2018, Clean Water State Revolving Fund (CWSRF) programs offered over 1,500 assistance agreements, providing \$6.8 billion for projects that improved wastewater infrastructure, addressed stormwater, promoted energy and water efficiency, and mitigated nonpoint source pollution. These projects also received approximately \$500 million in non-SRF funding. In the last three years alone, average annual CWSRF funding has exceeded \$7 billion.

CWSRF programs continue to provide tremendous cost savings to borrowers. The national average SRF interest rate in 2018 was 1.5 percent. During the same year, over \$250 million in additional subsidy was provided to help communities that could not otherwise afford critically important projects needed to address high priority environmental challenges.



PISCES Recognition Program

OWM's [CWSRF Performance and Innovation in the SRF Creating Environmental Success \(PISCES\) Recognition Program](#) highlighted 30 projects from all 10 Regions for their distinguished accomplishments in promoting human health and improving water quality. Five projects were

chosen for the Exceptional Projects category: a Renewable Energy and Biosolids Facility in Wilmington, DE; a Biogas Reuse Motor Fuel Project in Dodge City, KS; a Regional Sewerage Authority Pump Station Resiliency Project in South Monmouth, NJ; the Crooked River Wetlands Complex in Prineville, OR; and a Permanent Reuse Project in Wichita Falls, TX.

Agreement to Restructure Puerto Rico's Debt

EPA and Puerto Rico Aqueduct and Sewer Authority (PRASA) announced the restructuring of more than 200 delinquent loans—totaling approximately \$571 million in principal—owed to Puerto Rico's clean water and drinking water State Revolving Fund (SRF) programs. This restructuring clears the way for the commonwealth's idled SRF programs to once again provide critically needed funding to improve Puerto Rico's water and sewer systems, create local jobs, and ensure that the people of Puerto Rico have safe and clean water.

The finalization of the restructuring agreement will ensure the repayment of PRASA's SRF loans, and PRASA will



be eligible to apply for financial assistance from the Puerto Rico SRFs, which will help ensure the continued protection of public health and the environment for the residents of Puerto Rico. The sound management of the state programs has ensured that the SRFs remain at the forefront of funding innovative solutions for treating wastewater, providing safe drinking water, addressing stormwater runoff, tackling non-point source pollution, and addressing a multitude of other environmental and public health issues facing this nation.

“EPA is pleased that Puerto Rico’s SRFs are back on track and able to provide critically important funding for clean and safe water. With this loan restructuring, EPA is protecting taxpayer dollars while ensuring that funding is available for water infrastructure projects that will help build a stronger, safer, and healthier Puerto Rico.” - EPA Administrator Andrew Wheeler

American Iron and Steel

In 2019, EPA continued its implementation of the American Iron and Steel (AIS) requirements. The AIS program completed 45 site visits to active CWSRF construction projects across 12 states. The site visits provide an opportunity for outreach with engineers, contractors, suppliers, and manufacturers involved with CWSRF projects. EPA conducted four trainings for states, explaining how the AIS requirements apply to SRF projects and outline the responsibilities of each stakeholder.

While the vast majority of the country’s water infrastructure projects use iron and steel made in America, when domestic sources are not available EPA thoroughly evaluates submitted project-specific waiver requests. In 2019, EPA received and processed 22 CWSRF project-specific waiver requests - of which 7 were approved, 13 were withdrawn or not approved, and 2 are currently being processed.

Marketing and Outreach

In FY 2019 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. Twelve states 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. In FY 2019 the CWSRF program also provided technical assistance to the Oklahoma CWSRF to develop a marketing plan for their program. The Oklahoma CWSRF reported that as a result of the marketing work they have undertaken with support from EPA, they saw an impressive 33 percent increase in overall CWSRF project submissions for the priority list in FY 2019 over FY 2018 and 24 percent increase in FY 2018 over FY 2017.

MOU with Federal Emergency Management Agency

EPA and the Federal Emergency Management Agency (FEMA) announced a Memorandum of Understanding (MOU) to streamline coordination between FEMA and the



EPA-funded SRF programs. Now, the funding used to restore vital water infrastructure can be provided more quickly in times of disaster. Immediately after a disaster, communities, and tribes typically incur expenses for life safety, clean-up, and other disaster-related operations. Normally, communities have to pay out of pocket and wait to receive a reimbursement through a FEMA grant for eligible expenses or wait for an emergency supplemental appropriation for disaster relief and recovery from Congress. By securing a loan through this MOU early on after a disaster, a community would not need to expend its own funds first.

“This first-of-its-kind MOU with FEMA will give disaster-stricken communities expedited access to federal funds that will aid in their rebuilding process by helping to restore vital infrastructure and water services in times of disaster.” - EPA Administrator Andrew Wheeler

CWSRF Training and Oversight

The CWSRF program continues to support training for state and regional staff. In FY 2019, the program held a total of eight training sessions for state staff to learn about the financial and programmatic aspects of CWSRF programs. Financial analyst and annual review training sessions were held for regional staff.

Water Infrastructure and Resiliency Finance Center

EFAB Meeting (April 2018)

EPA's [Environmental Financial Advisory Board \(EFAB\)](#) held a public meeting in April 2019 in Washington, D.C. At the meeting, EPA heard from Board members on environmental finance issues and EPA priorities, finalized and approved recommendations from EFAB work products, discussed changes to the EFAB's process of selecting new topics and developing recommendations, and presented details on the Stormwater Finance Task Force/Workgroup.

Stormwater Finance Task Force/Workgroup

EPA's EFAB held its first kickoff meeting for the Stormwater Finance Task Force/Workgroup via conference call in June 2019. Under the America's Water Infrastructure Act (AWIA), the agency was directed to form a task force to analyze existing stormwater infrastructure funding and financing efforts, identify success and areas for improvement for these existing efforts, and provide recommendations on future stormwater infrastructure funding and financing.

Stormwater Financing Stakeholder Workshop

On May 8, 2019, EPA hosted a workshop on “Stormwater Financing: Opportunities and Challenges to Address Stormwater Financing Needs” in Ft. Lauderdale, FL. This



workshop solicited feedback about stormwater financing challenges from experts across the sectors, funding options they found most beneficial to communities, and opportunities to increase funding particularly by leveraging private sector funds. Around 35 participants attended from states, industry, associations, academics, and consulting firms.

Stormwater Financing Agency Listening Sessions

OWM hosted a workshop on “Stormwater Financing: Innovative Opportunities to Help You Address Your Stormwater Challenges” in Boston, MA on July 9, 2019. This workshop was designed to hear about stormwater financing challenges in the region, what mechanisms towns are currently using to pay for stormwater infrastructure, and to identify opportunities to address gaps in funding. Around 40 participants attended from local municipalities, state government, and local planning commissions.

Learning Modules and Clearinghouse Updates

In March 2019, the Water Infrastructure and Resiliency Finance Center (WIRFC) announced the release of two new [Water Finance Learning Modules](#), hosted on EPA’s Water Finance Clearinghouse. These modules focus on the drinking water and clean water state revolving funds and WIFIA. In addition to these learning modules, WIRFC recently completed updates to the [Water Finance Clearinghouse](#), providing new information on funding and other resources for water infrastructure. The

Clearinghouse received 11,485 hits for FY 2019.

EFC Day

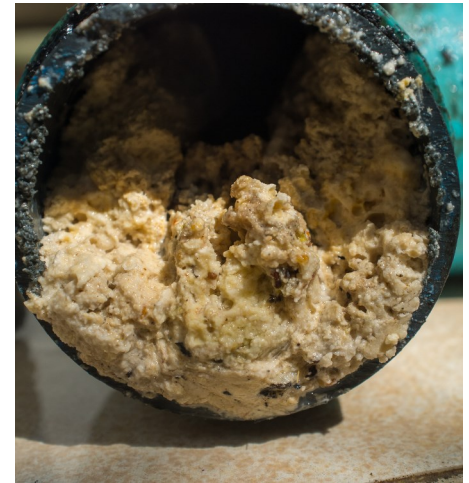
EPA and the Environmental Finance Centers (EFCs) hosted a successful EFC Day on June 4, 2019. The EFCs shared project examples to show how they can support agency programs. One-hour sessions were held on a variety of topics including water affordability, stormwater finance, sustainable materials management, tribal infrastructure management, and asset and energy management.

EFC Grants

In FY 2019, EPA provided funding of \$60,000 to each of the ten EFCs. This core funding will be used to support regional-based projects. Since 2000, these grants have been awarded annually. The grants support basic EFC operations and project work topics including small system asset management, utility financial sustainability and rates management, water and wastewater training and employment needs, tribal technical assistance, stormwater financing, environmental finance education and outreach, source water protection, watershed management, and green infrastructure.

Federal P3 Conference

EPA led discussions at the Federal P3 Conference in Washington, D.C. in December 2018. The federal representatives met to discuss implementation of public-private partnership (P3) activities. Focused conversations centered on barriers to execution as well as possible interagency synergies.



Notably, EPA organized and led a federal agency roundtable that included 26 representatives from EPA, Department of the Treasury, Department of State, Department of Homeland Security (DHS), Department of Transportation (DOT), National Park Service (NPS), Office of Personnel Management (OPM), Department of the Interior's Bureau of Indian Affairs (DOI BIA), Department of Agriculture (USDA), Army Corps of Engineers (USACE), Navy, and Federal Aviation Administration (FAA). This was the beginning of future discussions to develop successful practices and common solutions across the federal family.

Affordability

EPA remains committed to providing assistance to local decision makers on financing their public health and environmental obligations. As part of this commitment, EPA continues to work with stakeholders to explore affordability at both the household and community level for drinking water, wastewater, and stormwater services.

This year WIRFC worked across the Office of Water and the Office of Enforcement and Compliance Assurance to facilitate monthly discussions on how affordability is assessed across a range of water media. These discussions brought greater awareness of the similarities and differences that each of the programs encounter when using this common assessment approach. The Center also worked with the Southwest Environmental Finance Center through a cooperative agreement to research how affordability of other essential services such as energy, housing, and nutrition are being assessed domestically and internationally. This work helped inform our review of stakeholder recommendations on changes to the common assessment approach that the agency

uses in various ways within the water programs.

WATER POLLUTION CONTROL PROGRAM GRANTS

Section 106 Program

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, National Pollutant Discharge Elimination System (NPDES) permitting and enforcement, training, and public information. EPA provided approximately \$223 million in section 106 funding to prevent and control water pollution in FY 2019.

State and Interstate Water Pollution Control Grants

In FY 2019, EPA provided \$178 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 2019, the tribal set-aside was approximately \$25.6 million. Of the 565 federally recognized tribes, approximately 330 meet the criteria to receive section 106 funding, and 276 of these tribes were eligible to receive grants in FY 2019.

State and Tribal Water Monitoring Initiative

Using approximately \$17.3 million in FY 2019, 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 2019, 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 to report on the condition of the nation's waters and make progress toward assessing trends in water condition in a scientifically defensible manner.

Additional Supplemental Appropriations for Disaster Relief Act, 2019

In June of 2019, Congress enacted the Additional Supplemental Appropriations for Disaster Relief Act that provides an additional \$5 million in Section 106 funding for areas impacted by Hurricane Florence, Hurricane Michael, Typhoon Yutu, and 2018 wildfires. The funds are

targeted for use by states in counties that have a Federal Emergency Management Agency (FEMA) Major Disaster Designation. OWM, working with the EPA Regions, developed an alternate allocation and grant guidance for the supplemental funds.

Long-Term Monitoring Authorized Under the Water Infrastructure Improvement for the Nation Act

Section 5004(d) of the Water Infrastructure Improvement for the Nation (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 2019, \$4 million was appropriated for the program. OWM, working with OWOW; Regions 6, 8, and 9; and impacted states and tribes, continues to implement a long-term monitoring strategy which incorporates state and tribal short-term monitoring priorities and a long-term approach for assessing the health of the watershed.

GRANTS & UNDERSERVED COMMUNITIES' INFRASTRUCTURE

Small and Rural Community Technical Assistance Grants

In FY 2019, EPA issued two grants to the Rural Community Assistance Partnership (RCAP). With the first



grant from EPA, which was nearly \$1 million, the RCAP provided technical assistance to small and rural communities for managing their wastewater and decentralized treatment systems to 56 projects – 45 of which were small wastewater systems and 11 were decentralized systems. Technical assistance providers served 50 communities with approximately 50,608 people. Of those communities, 18 percent were considered low-income, living below the poverty line. RCAP conducted 60 trainings to small publicly owned wastewater systems, 25 trainings to communities using decentralized systems, and two webinars.

For the second grant, EPA conducted a competition for a combined grant of \$2.2 million of prior years' funding to provide technical assistance to small wastewater treatment systems and awarded RCAP the grant. With this funding, RCAP provided technical assistance to 36 small wastewater systems and six decentralized wastewater treatment systems. RCAP also conducted 17 trainings to small publicly owned wastewater systems and one training to communities using decentralized systems.

Clean Water Act Title II Grants to District of Columbia and the U.S. Territories

The District of Columbia and the U.S. Territories, namely, Virgin Islands, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands received an exemption from establishing a Clean Water State Revolving Fund, as these jurisdictions have a single level of government. In FY 2019, EPA received \$31.47 million for the Clean Water Act Title II Construction Grants

Program, which was allocated to these jurisdictions. The grants are being awarded to municipalities for the construction of wastewater treatment systems.

U.S.-Mexico Border Water Infrastructure Program

In FY 2018, the U.S.-Mexico Border Water Infrastructure Program (BWIP) issued almost \$10 million in grants to the North American Development Bank (NADB) to fund critical water infrastructure construction projects in the region along the U.S.-Mexico border. In FY 2019, grants to NADB for additional water infrastructure funding along the border are projected to total approximately \$14.5 million. Since 2003, the BWIP has funded more than 128 projects, and the majority of those projects already completed construction. Working closely with U.S. and Mexican federal, state, and local partners, the program has provided first-time access to safe drinking water to more than 70, 000 homes and wastewater collection and treatment services to more than 673,000 homes. Since the program's inception, it helped develop the capacity to treat over 280 million gallons per day of raw wastewater in the border area, improving the quality of surface and groundwater for the entire region.



Tools

Did you know? Most webinars and webcasts are recorded and posted online afterwards, so they are available for viewing for anyone who couldn't attend the live version.

TRAINING

Webinars on Nutrient Reduction Financing

In June and July 2019, EPA co-hosted a series of webinars with USDA on [Innovative Financing Strategies for Reducing Nutrients](#). The topics of this four-part webinar series included Federal Financing for Nutrient Reductions: Grants and Lending Opportunities, Private Sector Financing Solutions for Nutrient Reductions, Funding Large-Scale Nutrient Reductions, and Stormwater Financing Solutions Nutrient Reductions. These webinars featured case studies of successful approaches from across the country for funding nutrient reductions.

Decentralized Wastewater Webcast Series

EPA's Decentralized Wastewater Management MOU Partnership sponsors [webcasts](#) to discuss topics of interest to the decentralized wastewater community. This year, the webinars included:

- Career Perspectives in Decentralized Wastewater Management (March 2019): Seasoned decentralized wastewater career professionals shared their perspectives on their more than 40 years of experience in the industry.
- Natural Disaster Preparedness and Recovery for Communities Served by Decentralized Wastewater

Systems (June 2019): Natural disasters of all kinds can have significant impacts on septic systems. This webinar highlighted two case studies of large-scale natural disasters and their impacts on populations dependent on decentralized systems: Puerto Rico from Hurricane Maria in 2017, and along coastal Connecticut from Superstorm Sandy in 2012. New disaster preparedness resources from the National Environmental Health Association were also shared.

- SepticSmart Week 2019: Promoting Best Practices for Community Involvement (Sept 2019): The successes of SepticSmart Week occur primarily due to local and state-wide involvement. This webinar highlighted the activities of states and localities for SepticSmart Week and aired during SepticSmart Week 2019.

Green Infrastructure Webcasts

In FY 2019, 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 can 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.



Technical Support & Assistance

Smart Data Infrastructure for Wet Weather Control and Decision Support

In September 2018, OWM published [a compendium of technology advances](#) called “smart data infrastructure” used by municipalities, utilities, and related organizations for wet weather control. Rain and snowmelt can significantly increase flows at wastewater treatment facilities, creating operational challenges and potentially affecting treatment efficiency, reliability, and control of treatment units. Current approaches to wet weather control rely primarily on gray or green infrastructure, or a combination of the two. However, more public works departments are investing in approaches that give facility managers innovative data and monitoring tools to support wet weather control and decision-making in real time or near real time.

Several case studies showcase the application of smart data: real-time control systems are used in Newburgh, NY to provide notice of combined sewer overflow events to the public and in Philadelphia, PA to manage stormwater and reduce runoff impacts; San Antonio, TX uses an advanced system for detecting when sewer pipes need cleaning that saves money compared to a standard cleaning schedule.

Green Infrastructure Engagement

The green infrastructure program staff continued work with the [Green Infrastructure Leadership Exchange Network](#), a national network of practitioners that supports communities seeking to grow their green infrastructure

programs. At this year’s exchange annual conference in June 2019, representatives from the 60 member communities met in Milwaukee, WI to share experiences in the following priority areas:

- Equity: Integrating equity into the full value chain of green stormwater infrastructure.
- Workforce Development: Cross-training, building workforce requirements into contracts, effective partnerships, and connecting green stormwater infrastructure to the water industry.
- Asset Management: Comparing approaches and prioritizing asset maintenance based on risk.
- Details and Specifications: Developing a library of cost-effective designs and lessons learned.
- Maintenance: Using smart technology to identify maintenance needs, comparing service delivery models and maintenance standards.
- Performance Contracts: Defining performance metrics.
- Training: Sharing existing resources for technical/ leadership/change management.
- Trees and Green Stormwater Infrastructure: Aligning stormwater trees with urban forestry.

Long-Term Stormwater Planning

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. Throughout 2019, EPA tested these



approaches with four pilot communities: Santa Fe, NM; Burlington, IA; Hattiesburg, MS; and Rochester, NH. 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. With the pilot plans finalized next year, EPA may 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.

Low Flow Statistics Guidebook

In October 2018, as part of the agency's efforts to provide tools to permit writers to assist in more efficient permit issuance, OWM released the primer [Low Flow Statistics Tools, A How-To Guidebook for NPDES Permit Writers](#). The tools, developed by and in collaboration with the U.S. Geological Survey, provide more accurate measures of low flow statistics and support the development of robust permit limits and conditions protective of water quality. The Guidebook provides step-by-step instructions to help permit writers to calculate complex statistics accurately.

Manure Management Technical Assistance

In FY 2019, OWM continued to provide technical assistance to special projects aimed at improving manure management at animal agriculture facilities. In October 2018, OWM, in partnership with New Mexico Environment Department and EPA Region 6, convened a Nutrient

Management Plan Technical Forum. The Forum explored many of the technical aspects of nutrient management planning, including soil science, land application rates and protocols, nutrient budgets, and on-site assessments. In June 2019, OWM completed a model of the financial ability of confined dairies in Vermont to transition to intensive grazing operations to reduce phosphorus inputs and improve water quality in Lake Champlain. The model predicts that grazing dairies, on average, especially those with fewer than 50 cows, may be more likely than confined dairies to be profitable.

Wastewater Treatment Technology and Research

In 2019, 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 EPA's Office of Research and Development in various projects of the EPA Safe and Sustainable Water Resources research plan.



Permits

Did you know? 47 states across the country have delegated authority to run their own water discharge permitting program.

Timeliness of Permit Issuance

EPA's FY 2018-2022 Strategic Plan calls for streamlining and modernizing EPA programs, including issuing permits more efficiently. Under the Strategic Plan, by September 30, 2022, EPA must make all permitting-related decisions within six months. Improving the timing for issuance and reissuance of NPDES permits will provide greater certainty for the regulated community and ensure that permits reflect the most up-to-date requirements and scientific information.

For the first time, EPA is applying a Lean Management System to the EPA permit backlog. On June 15, 2018, EPA leadership issued a directive that backlogs for new permits in the Regions must be eliminated. EPA Regions have already succeeded in reducing their backlog of new NPDES permits from 106 in March 2018 to 32 in July 2019. Additionally, EPA Regions have reduced their backlog of existing permits from 547 to 401 in that same timeframe.

NPDES Updates Rule

On February 12, EPA published [a final rule](#) updating and streamlining specific provisions of the agency's NPDES permitting regulations. The final rule deletes an outdated regulation that is no longer applicable, clarifies other existing regulations, and eliminates inconsistencies between regulations and permit application forms. The final rule also revises public notice requirements for certain classes of permits and revises the agency's application forms. These [new application forms](#) promote the submission of complete applications that will allow for more timely development of NPDES permits to protect human health and the environment.



Reviewing State and EPA Regional Office NPDES Programs

EPA ensures the integrity of the NPDES permitting process by conducting [program and permit quality reviews](#) (PQRs) of state and regional NPDES programs. 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.

The Water Permits Division PQR team in FY 2019 enhanced the oversight of the NPDES program by reducing the review timeline of PQRs from an average of 16 business days to 9.4 days. This reflects a 40 percent reduction, which exceeded the initial target of 20 percent. PQRs involve audits of state programs by Regional offices, which result in a findings report.

Peak Flows Management Rulemaking

In April 2018, EPA announced a new rulemaking to examine issues associated with the management and treatment of peak flows during wet weather events at publicly owned treatment works (POTWs) with separate sanitary sewer systems. This proposed rulemaking seeks to ensure a consistent national approach for permitting POTWs that allows efficient treatment plant operation while protecting the public from potential adverse health effects of inadequately treated wastewater. In FY 2019 EPA met with stakeholders, including state regulators, hosted a technical stakeholder roundtable meeting, held three public listening sessions, and published [a federal](#)

[register notice](#) requesting input via the rulemaking docket. EPA received over 30,000 comments including unique comment letters from municipalities, trade groups, consultants, environmental stakeholders, state governmental agencies, equipment manufacturers, and private citizens.

Aquaculture Permitting

In FY 2019, OWM strengthened partnerships and expanded efforts in the area of aquaculture permitting to promote efficiencies in the regulatory program while supporting the development of a sustainable aquaculture industry. In the fall of 2018, OWM analyzed monitoring requirements in NPDES permits nationwide at the request of the National Aquaculture Association (NAA). The analysis demonstrated reasonable and appropriate monitoring parameters and frequencies.

In March 2019, EPA and the Army Corps of Engineers coordinated a session on permitting at the Aquaculture 2019 international conference in New Orleans, LA at the request of the NAA. In June 2019, OWM participated in a Capitol Hill briefing to provide current and accurate scientific information on marine finfish aquaculture. In 2019, OWM, through the National Science and Technology Committee, Subcommittee on Aquaculture, worked to produce collaborative reports across multiple federal agencies on both research needs and regulatory efficiencies pertaining to aquaculture.



Updates to NPDES eRule Data Elements to Reflect MS4 General Permit Remand Rule

In April, EPA proposed updates to the [NPDES Electronic Reporting Rule](#) (NPDES eRule) that applies to regulated municipal separate storm sewer systems (MS4s). The proposed rule updates specific data elements to be consistent with the current MS4 regulations, which were recently modified by the MS4 General Permit Remand Rule. EPA plans to finalize this rule in FY 2020.

Multi-Sector General Permit for Industrial Stormwater Discharges

EPA funded [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 had 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. The recommendations are related to pollutant monitoring requirements and benchmark thresholds, stormwater sampling and data collection, and consideration of retention standards.

Construction General Permit

EPA's Construction General Permit (CGP) protects waterways from pollutants in stormwater discharges from construction activities. This permit provides NPDES

permit coverage to construction operators in the states of New Hampshire, Massachusetts, New Mexico, and Idaho, as well as most of Indian country, Puerto Rico, the District of Columbia, and the Pacific Island territories, among others. After EPA issued the CGP in January 2017, both the National Association of Home Builders and the Chesapeake Bay Foundation filed petitions for review in the D.C. Circuit. Based on new information provided to EPA, the agency proposed a permit modification in December 2018 and published the final modification in May 2019. The final modification removes examples of the types of parties that could be considered operators in the definition of operator, aligns three requirements that implement the Construction and Development Effluent Limitations Guidelines (ELG) and New Source Performance Standards (NSPS) with the ELG text, and clarifies individual operator responsibilities in multiple operator scenarios.



Partnerships

Did you know? That small drip from your faucet can lead to more water wasted than you think. Household leaks waste about 10,000 gallons of water per year for the average family. That’s over 270 loads of laundry!

WATERSENSE

Defeating Water Waste

Since June 2006, the program estimates it has helped save more than 3.4 trillion gallons of water—more than the amount used by all U.S. households for four months. US households, by looking for and installing WaterSense labeled products, saved 725 billion gallons of water in 2018 alone. WaterSense labeled products are independently certified to use at least 20 percent less water and perform as well or better than standard models. Also in 2018 more than 30,200 different models of toilets, bathroom faucets and accessories, showerheads, flushing urinals, flushometer-valve toilets, weather-based irrigation controllers, spray sprinkler bodies, and pre-rinse spray valves had earned the label. EPA estimates WaterSense labeled products have helped Americans save \$84.2 billion in energy and water bills. More than

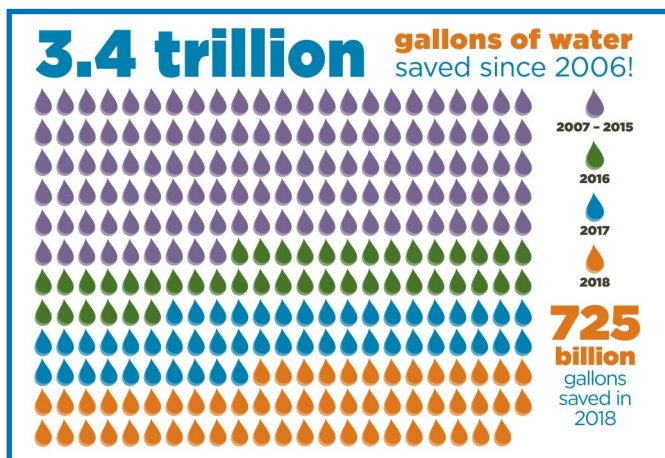
2,000 utility, manufacturer, retail, builder, and other organizational partners helped Americans save water, energy, and money with products, programs, and promotions.

WaterSense Authorized

The WaterSense program was formally authorized with the signing of the *America’s Water Infrastructure Act of 2018* on October 24, 2018 to promote water efficiency through adoption of WaterSense labeled products and other practices. The law also requires EPA to review any WaterSense specifications created before 2012 which includes tank-type toilets, flushing urinals, bathroom faucets, showerheads, and irrigation controllers for potential improvements to product performance and/or water efficiency.

WaterSense Homes — Version 2.0

Since the WaterSense labeled homes program began in 2009 the construction industry has grown to include a greater focus on green homes. To better align with the changing marketplace EPA began working on Version 2.0 in 2018. The home specification is being revised to increase flexibility in meeting WaterSense’s technical requirements without compromising a home’s water efficiency or performance for the homeowner.





Specification Sunset

WaterSense has successfully transformed the marketplace for pre-rinse spray valves (PRSVs). The U.S. Department of Energy (DOE) adopted the WaterSense efficiency threshold and performance test for a national energy standard covering commercial kitchen pre-rinse spray valves sold in the United States. Although, pre-rinse spray valves were sunset as of January 1, 2019, kitchens and other facilities will continue to save water and be ensured the performance with PRSVs that meet the DOE standard.

Outdoor Irrigation

WaterSense created new materials for the outdoor portfolio. Two micro-irrigation, a low-pressure, low-flow-rate type of technology, guides were created and can be found on the website. Micro-irrigation, also known as drip irrigation, delivers water directly to the root zone of plants which can reduce overwatering, prevent runoff, and reduce evaporation. The guides provide design, installation, and maintenance tips to help homeowners as well as irrigation professionals maximize outdoor water savings while enhancing the health and beauty of the landscape.

WaterSense also created “*Is Your Watering Under Control?*” mini-brochure, which helps homeowners understand their irrigation controllers, how to adjust watering schedules with the change of seasons and/or weather conditions (rain, wind, etc.).

To enhance the popular, Sprinkler Spruce-Up campaign we added a brochure to walk customers through a check

list — inspect, direct, connect, and select WaterSense labeled irrigation controller — for their in-ground irrigation system.

Partners of the Year Awards

On October 4, 2018, the 2018 WaterSense award winners were announced at WaterSmart Innovations Conference and Exposition in Las Vegas, NV. WaterSense partners across the country help save water by advancing and promoting WaterSense and water efficiency.

In 2018, nine partners were recognized with Sustained Excellence Awards for their continued high level of support: American Standard - Part of LIXIL Athens-Clarke County (GA) Public Utilities Dept., City of Charlottesville (VA), Cobb County (GA) Water System, Delta Faucet Company, Energy Inspectors Corporation, KB Home, Metropolitan North Georgia Water Planning District, and Sonoma-Marin (CA) Saving Water Partnership.

Four partners were recognized as Partners of the Year: City of Fort Worth, TX; City of Plano, TX; Citrus County, FL; Utilities, and The Broward Water Partnership, FL.

WaterSense also presented eight Excellence Awards, which recognize organizations that stood out in one or more evaluation categories: City of Durham (NC) Dept. of Water Mgmt., Sacramento (CA) Suburban Water District, City of Frisco (TX), Alliance for Water Efficiency, Sonoma-Marin (CA) Saving Water Partnership, The Toro Company, Hunter Industries, and San Diego County (CA) Water Authority.



Decentralized Wastewater Program

Celebrating the 7th Annual SepticSmart Week

EPA's [SepticSmart Week](#) 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 7th Annual SepticSmart Week occurred September 16-20, 2019. Each year, states and organizations submit proclamations of support and commitment to SepticSmart Week; this year, the program received 11. The Decentralized MOU Partnership also updated their SepticSmart Week Social Media Guide, which contains 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 MOU partners, states, and homeowners. The program developed a new [SepticSmart magnet](#) to remind homeowners of what not to put down their drain and when they last had their system serviced. New [educational products](#) were also created for vacation rental property owners with septic systems, including a one-page guide and signs for the kitchen and bathroom, to educate renters about what not to put down the drain.

Decentralized Wastewater Workforce Efforts

Stemming from the fifth priority of the Decentralized Wastewater MOU Partnership, which focuses on education and growing a sustainable workforce, the Decentralized Wastewater Program hosted two listening sessions and a national meeting to discuss workforce challenges and potential solutions for the decentralized wastewater industry. In October 2018, the program held two listening sessions, one on challenges associated with installers, pumpers, maintenance providers, etc, and the second on challenges experienced in academia (i.e. research, or engineering programs).

These listening sessions were broad in scope and helped put all potential issues and solutions on the table. A Decentralized Wastewater Workforce Steering Group was created out of these listening sessions to inform the development of a National Meeting focused on identifying solutions to increase workforce training and competency and advance decentralized wastewater education in community colleges and universities. The Steering Committee includes diverse expertise from academic and industry experts and was instrumental in developing the meeting approach, scoping the discussion topics, and refining research materials particularly on the range of decentralized wastewater systems, job types, and competencies.

The National Meeting was held in July and focused on three themes: Key Jobs and Associated Competencies; Education and Training; and Recruitment and Retention.



The Meeting included a session on identifying workforce development opportunities with a view towards building a roadmap for action. The Convening included over 40 participants with a mix of professional backgrounds from within and outside of the decentralized wastewater sector.

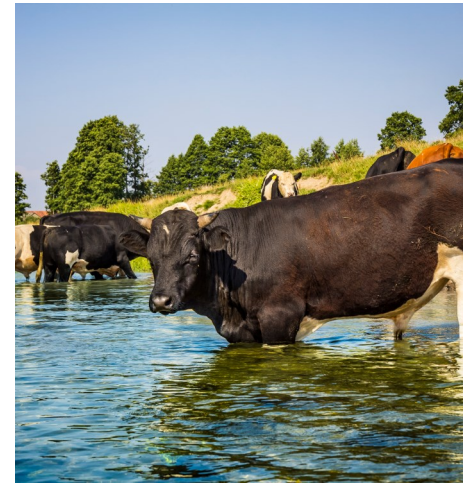
Other Collaboration and Synergy Campus RainWorks Challenge

EPA's Green Infrastructure program held the [7th 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, 67 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 Louisiana at Lafayette and Florida International University were the first and second place winners, respectively, in the master plan category. The University of Oregon and the University of Arizona were first and second, respectively, in the demonstration project category.

Tyson Foods, Inc. CRADA

On May 20, 2019, Tyson Foods, Inc. and the Director of National Exposure Research Laboratory signed the Materials Cooperative Research and Development Agreement (CRADA) for a water reuse pilot project. Tyson approached OWM in June 2018 to collaborate on





water reuse pilot project. OWM worked with EPA's Office of Research and Development to draft a CRADA to establish a process for onsite protein processing wastewater reuse that maintains protection of food quality and consumer health. Specific objectives include characterizing the quality of protein processing wastewater, determining the treatment requirements necessary to achieve public health benchmarks along with the determination of an appropriate direct potable reuse microbial risk assessment methodology, and identifying potential treatment train configurations to meet treatment targets.

MOU Advances EPA's Efforts to Address Excess Nutrients in Nation's Waterways

In February, EPA signed an MOU with the Water Research Foundation (WRF) to accelerate progress on reducing excess nutrients in the nation's waterways. The MOU builds on successes achieved through the Nutrient Recycling Challenge, a competition launched by EPA to develop affordable technologies to recycle nutrients from livestock manure. Through the MOU, EPA and WRF will collaborate with the agricultural community to build capacity and awareness of programs and tools that support watershed and market-based approaches to nutrient management. To accomplish these goals, the MOU aims to:

- Facilitate greater collaborations between the regulated water community, technology, and agricultural producers;

- Match innovative manure and nutrient management technologies with on-farm testing sites, funders for technology demonstrations, and third-party evaluators;
- Enable producer-to-producer information exchange regarding technology performance; and
- Develop and disseminate information on specific topic areas related to manure management and resource recovery and reuse.

National Water Workforce Convening

In November 2018, OWM and other sector partners hosted the National Water Workforce Convening at the Alexandria Renew Enterprises facility in Alexandria, VA. Approximately 75 utility leaders, states, federal agencies, and other thought-leaders in the water workforce arena engaged in a series of discussions around workforce recruitment, retention, training, and collaboration with outside organizations. Several leading organizations from the water sector and other sectors presented on their efforts to help utilities develop sustainable workforce plans, along with lessons learned and challenges from their experiences. EPA and other sector partners are using the results from the convening to develop water workforce strategies.



U.S.-Brazil Innovative Forest Investment Forum

EPA participated in the U.S.-Brazil Forum on Innovative Forest Investments in July 2019 with two presentations on the Evolution of Forest Resilience Bonds and the current state of green infrastructure in the United States. Participants included representatives from U.S. and Brazilian governments, as well as local and international financial institutions, forestry companies, and forestry and financial non-governmental organizations. The goal was to learn about and share innovative ideas from the U.S. and Brazilian methodologies. It also served to enhance interagency collaboration with the Forest Service on water quality issues and State Department on international water finance efforts.

Green Infrastructure Engagement

The green infrastructure program staff continued work with the [Green Infrastructure Leadership Exchange Network](#), a national network of practitioners that supports communities seeking to grow their green infrastructure programs. At this year's exchange annual conference in June 2019, representatives from the 60 member communities met in Milwaukee, WI to share experiences in the following priority areas:

Equity: Integrating equity into the full value chain of green stormwater infrastructure.

Workforce Development: Cross-training, building workforce requirements into contracts, effective partnerships, and connecting green stormwater infrastructure to the water industry.

Asset Management: Comparing approaches and prioritizing asset maintenance based on risk.

Details and Specifications: Developing a library of cost-effective designs and lessons learned.

Maintenance: Using smart technology to identify maintenance needs, comparing service delivery models and maintenance standards.

Performance Contracts: Defining performance metrics.

Training: Sharing existing resources for technical/ leadership/change management.

Trees and Green Stormwater Infrastructure: Aligning stormwater trees with urban forestry.



Office of Wastewater Management
1200 Pennsylvania Avenue NW (4201M)
Washington, DC 20460

EPA Publication Number 830R19002
January 2020

www.epa.gov/OWM