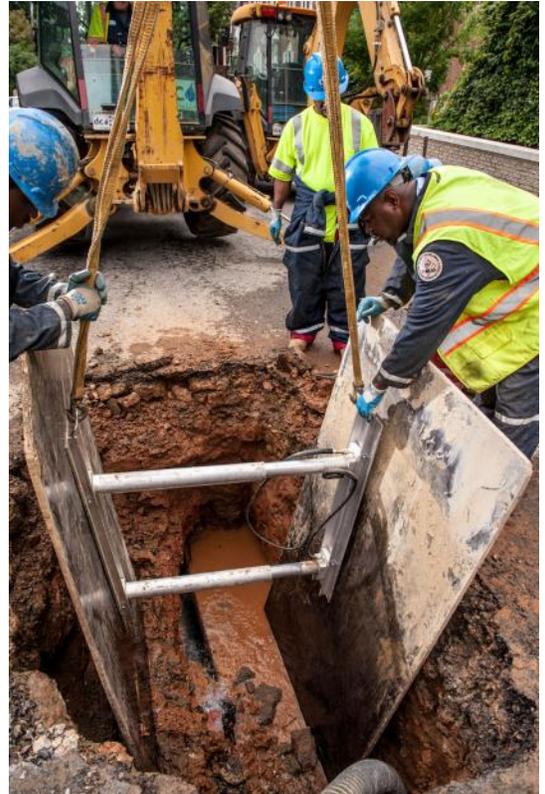


# Office of Wastewater Management 2014 Annual Report





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# Message from the Director

The breadth of the Office of Wastewater Management's work is vast. Fortunately, we have a dedicated, expert staff who develop ingenious approaches to addressing the nation's wastewater needs. Even though circumstances can change rapidly, our staff never fail to respond quickly and constructively. I would like to use this message to illustrate that breadth, ingenuity and responsiveness by touching on some of our most significant FY 2014 accomplishments.

**Funding for infrastructure and environmental protection.** OWM is home to several programs that provide water and sewer infrastructure funding. Under the largest, the **Clean Water State Revolving Fund**, EPA allocates money annually to the states, which make loans and revolve payments back into their respective funds. Since 1988, the CWSRF has provided \$105 billion in funding, with \$5.4 billion coming in FY 2014 alone. On June 10, 2014, the president signed the **Water Resources Reform and Development Act**, which amended sections of the Clean Water Act dealing with the CWSRF. OWM quickly responded, issuing Initial Interpretive Guidance for these amendments just 100 days after their passage. (See page 5 for more about WRRDA and OWM's response.)

In addition, OWM has three infrastructure funding programs specifically for small and rural communities. In FY 2014, the **Clean Water Indian Set-Aside** distributed \$29 million for 77 projects to improve sanitation for American Indians and Alaska Natives in over 11,000 homes; the **Alaska Native Village and Rural Communities Grant Program** dispersed \$10 million for eight projects affecting 396 homes; and the **U.S.-Mexico Border Water Infrastructure Program** provided 12,756 homes with wastewater connections and 1,468 homes with drinking water connections.

OWM also provided approximately \$230 million under the **State and Interstate Water Pollution Control Grants**, the **Tribal Water Pollution Control Grants**, and the **State and Tribal Water Monitoring Initiative** to help states, territories and tribes implement water pollution control programs.

**Regulatory actions.** We continued our legacy of developing regulations that make vital contributions to water quality protection. Under the **Sufficiently Sensitive Test Methods** rule, facilities applying for CWA National Pollutant Discharge Elimination System permits can only use test methods sufficiently sensitive to detect applicable pollutants.

Two of our general permits will reduce pollutants and invasive species. The revised **vessel general permit** became effective Dec. 19, 2013, and regulates discharges from commercial vessels longer than 79 feet. OWM also finalized the **small vessel general permit**, effective Dec. 19, 2014, which regulates ballast water discharges from vessels shorter than 79 feet.

We also supported the Office of Science and Technology on a rule to **protect fish and other aquatic life from cooling systems at large power plants and factories**.

**Training and technical assistance.** OWM provided \$860,000 to 14 communities for **technical assistance to advance adoption of green infrastructure**. These communities will embark on projects related to community resiliency, brownfield redevelopment, operations and maintenance, off-site mitigation, and green infrastructure design. Green infrastructure absorbs rainwater where it falls, which reduces untreated runoff flowing into our waterways.

OWM took part in several initiatives to assist small and rural water systems struggling with inadequate infrastructure and finances. We teamed with the U.S. Department of Agriculture and small system managers to complete the **Rural and Small Systems Guidebook to Sustainable Utility Management** in 2013. Additionally, we teamed with USDA to train technical assistance providers and government staff to deploy the guidebook. We also awarded a **\$1.4 million cooperative agreement to the National Rural Water Association** to conduct small-system sustainability workshops in all 50 states.

We led several critical trainings this year to provide state and EPA personnel with knowledge essential to implementing our programs and protecting the nation's waters. NPDES permit writers from all 10 EPA regional offices and more than 30 states attended our **advanced technical training for developing nutrient limits**. For the **test of significant toxicity**, we ran training webinars and provided technical assistance. And we continued our longstanding **NPDES Permit Writer's Course**, offering four weeklong sessions across the country for state and EPA regional office staff.

**Engaging the public and industry.** **WaterSense**, our nationally recognized program that (among many other things) certifies water-efficient consumer products, engages on a number of fronts. WaterSense launched its **H<sub>2</sub>Otel Challenge** this year for hotels to "assess, change and track" their water usage. By October, more than 800 hotels signed up. WaterSense also awarded its annual **Partners of the Year** awards to industry and utility partners. This is in addition to its annual **Fix a Leak Week**, **Sprinkler Spruce Up** and **Shower Better Month** campaigns, which educate the public on saving water.

There are many other engagement projects and initiatives I am particularly proud of. Our second annual **SepticSmart Week** used the web, social media and traditional outreach to educate the public about proper septic system maintenance. These efforts resulted in SepticSmart Week proclamations in Vermont, Minnesota and Oregon. We continued the **Campus RainWorks Challenge** in which teams of undergraduate and graduate students design green infrastructure proposals for their campuses. And in the animal agriculture sector, we held three **Discussion Group** meetings to forge a dialogue between industry and EPA, and we participated on the evaluation panel for the U.S. Poultry and Egg Association's **Family Farm Environmental Excellence Award**.

The accomplishments highlighted in this report speak volumes about how incredibly valuable our staff is in OWM. I am proud of all we accomplished in 2014, and I am excited to elaborate on our work in the remainder of this report. In FY 2015, expect us to continue to develop and implement creative, efficient approaches to wastewater management that translate to cleaner, more abundant water for the American public we proudly serve. I look forward to championing the successes of our staff in the future.

Andrew D. Sawyers, Ph.D.  
Director, Office of Wastewater Management

# About the Office of Wastewater Management

**The Office of Wastewater Management's mission** is to protect community water resources by working with partners to implement practical solutions to challenging water quality problems.

In FY 2014, OWM's programs, including state and tribal assistance, accounted for over **\$1.7 billion**, or more than **21 percent**, of EPA's budget.

OWM resides in the U.S. Environmental Protection Agency's Office of Water in Washington, D.C. Its staff of more than 100 employees promote effective water use, treatment, disposal and management, and encourage watershed protection and restoration.

OWM comprises the Immediate Office of the Director; the Municipal Support Division; the Water Permits Division; and the Planning, Information and Resource Management Staff.

## Municipal Support Division

The Municipal Support Division manages the **Clean Water State Revolving Fund**. Over the past 26 years, the CWSRFs provided more than \$105 billion in funding to support roughly 35,000 low-interest loans for wastewater treatment, nonpoint source pollution control, and estuary protection.

Through the **Sustainable Communities program**, the division provides technical and financial assistance for water infrastructure development and maintenance. This assistance improves public health and increases economic opportunities for small, underserved communities lacking access to safe water and effective wastewater treatment.

The **Sustainable Management program** promotes widespread adoption of better utility management and water efficiency practices. It also regularly updates inventories and cost estimates of infrastructure investments needed to meet the goals of the Clean Water Act.

The **WaterSense program** raises national awareness of water as a valuable resource by encouraging water efficiency among utilities, manufacturers, retailers and consumers. When shopping, consumers can look for the WaterSense label, which identifies a water-efficient product independently certified to meet WaterSense's efficiency and performance criteria. To date, WaterSense has helped save consumers 757 billion gallons of water and \$14.2 billion in water and energy bills while preventing 37 million metric tons of carbon dioxide emissions.

## Water Permits Division

The **Industrial program** permits direct discharging manufacturing facilities, vessels, coal mines, shale gas extraction operations and steam electric power plants. It also includes the national pretreatment program, which regulates thousands of industrial operations that discharge into municipal sewers that flow to sewage treatment works.

The **Municipal program** houses the green infrastructure program, which promotes the use of green roofs, rain gardens, porous pavements and other techniques that result in improved water and air quality, energy and costs savings, enhanced water supplies, habitat creation and source water protection. The program also provides direction and assistance on wet weather and other stormwater management methods, including municipal separate storm sewer systems.

The **Rural program** addresses agricultural impacts — including animal agriculture facilities and spray pesticides — as specified under the Clean Water Act. It develops policies, technical implementation guidance and outreach relating to implementation of National Pollutant Discharge Elimination System (NPDES) concentrated animal feeding operation regulations.

The **State and Regional program** supports reviews of state and EPA regional office NPDES programs and provides information on the health and integrity of NPDES program implementation. It resolves legal barriers to optimal program performance and ensures NPDES permits protect water quality.

## Program, Information and Resource Management Staff

PIRMS serves as the staff office to the office director. It handles matters relating to policy, budget, administration, information management, strategic planning, communication, technology, regulatory development and legislation.

PIRMS also manages the **State and Tribal Water Pollution Control Grants program** under section 106 of the Clean Water Act. In FY 2014, the program provided \$230 million in assistance to states, interstate agencies and eligible tribes to establish and implement ongoing water pollution control programs.

EPA headquarters, Washington, D.C.



# OWM at Work: Three Efforts to Improve Water Quality

Three major projects — Water Resources Reform and Development Act (WRRDA) implementation, green infrastructure, and the NPDES Strategic Plan — figured prominently in 2014, and will shape much of OWM's future.

WRRDA offers OWM new opportunities in water and sewer infrastructure funding, where hundreds of billions of dollars in need have been documented. Green infrastructure is a relatively new way to manage stormwater. Municipalities increasingly rely on green infrastructure to relieve overburdened storm sewers. The NPDES Strategic Plan is OWM's vehicle for addressing aspects of the Clean Water Act facility permitting program that need to be modernized in order to achieve effective, efficient protection of the nation's waters.

In each of these efforts, OWM responded quickly to emerging needs. Staff and management often do this in fresh new ways, such as the green infrastructure team's Campus RainWorks Challenge or the Permit Division's approach to modernizing NPDES permitting. These efforts also show that OWM meets its commitment to consistently engage stakeholders, other federal agencies, states, municipalities and other parts of EPA to include them in the implementation process.

## WRRDA Implementation

The president signed the **Water Resources Reform and Development Act** (WRRDA) on June 10, 2014. Among its provisions are amendments to Titles I, II, V and VI of the Clean Water Act. These amendments made significant changes to the **Clean Water State Revolving Fund** (CWSRF), many of which took effect Oct. 1, 2014. They include:

- eight new eligibility categories for CWSRF assistance — new decentralized systems, privately owned stormwater projects such as green infrastructure, water conservation, watershed pilots, energy efficiency, water reuse, security measures at publicly owned treatment works (POTWs), and technical assistance to small and medium POTWs;
- a requirement that loan recipients prepare fiscal sustainability plans;
- a provision that increases loan maturities to the lesser of 30 years or design life;
- a requirement that some loan recipients prepare a cost effectiveness analysis; and
- a provision that increases state flexibility in billing for administrative expenses.

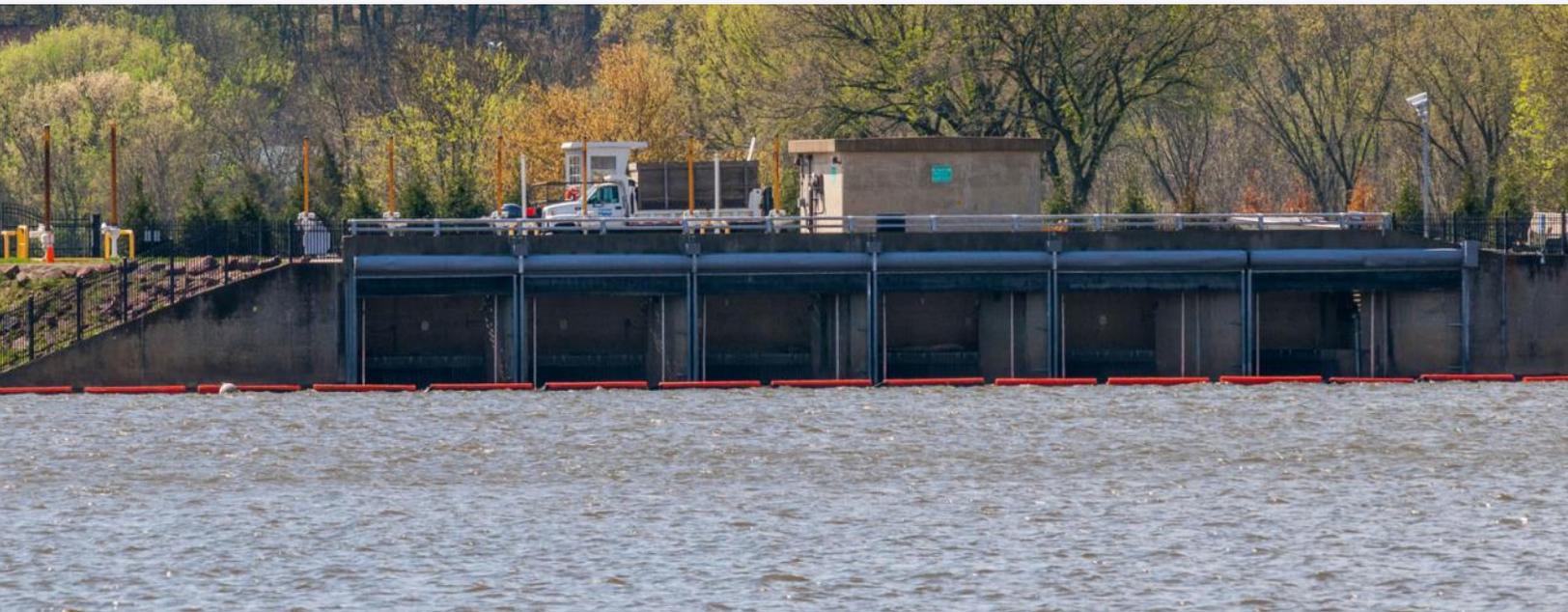
OWM issued **Initial Interpretive Guidance** for these amendments on Sept. 18, 2014, only 100 days after WRRDA's enactment. The guidance describes how states should apply the new requirements when managing their CWSRF programs. For example, the guidance explains that the CWSRF can now fund certain projects — such as privately owned stormwater management projects in regulated areas — previously ineligible for CWSRF assistance. Prior to the amendments, these projects were only eligible in regulated areas if they were publicly owned. OWM collaborated with states, EPA regional offices and other interested parties to develop this guidance.

OWM also developed additional interpretive guidance for WRRDA's cost and effectiveness planning provision, which will take effect Oct. 1, 2015. This provision requires certain CWSRF assistance recipients to certify: (a) they studied and evaluated the cost and effectiveness of the processes, materials, techniques and technologies for carrying out the proposed project or activity; and (b) they selected a project or activity that maximizes potential for energy conservation, efficient water use, and water reuse and recapture.

Looking ahead, OWM is planning 10 technical assistance workshops in FY 2015 for state and EPA regional office staff on implementing WRRDA. OWM will also add relevant questions to the checklist used by EPA regional offices in their oversight reviews of state programs.

WRRDA also contains the **Water Infrastructure Finance and Innovation Act (WIFIA)**, an innovative finance program that will offer direct loans and guarantees for large water infrastructure projects at Treasury interest rates. Funds appropriated for the program would be used to provide a subsidy reserve to protect the government against default. The amount of reserve needed per project will be based on default risk and other variables.

Beginning in FY 2014, OWM and the Office of Ground Water and Drinking Water held seven listening sessions across the country to present WIFIA to stakeholders and interested parties, hear ideas on implementing the program, and gain an understanding of the potential market. Now that those sessions are complete, OWM and OGWDW are moving forward with program development.



## Green Infrastructure

OWM has promoted the use of green infrastructure for many years as part of a comprehensive approach to achieving healthier waters. Green infrastructure manages rainwater close to where it falls by using vegetation, soils and natural processes to reduce runoff. In FY 2014, OWM continued to work with its partner organizations and communities to encourage green infrastructure as a way to achieve environmental, social and economic goals.

In October 2013, OWM released a new **Green Infrastructure Strategic Agenda** outlining five major focus areas — federal coordination, Clean Water Act regulatory support, research and information exchange, funding and financing, and capacity building. The agenda emphasizes how green infrastructure can improve water quality while creating more resilient and livable communities.

On Oct. 21-22, 2013, Onondaga County, New York, and EPA hosted **a meeting in Syracuse of green infrastructure community partners and technical assistance recipients**. These communities engaged in a peer-to-peer exchange about their experiences implementing green infrastructure. OWM believes this dialogue is integral to increasing green infrastructure's adoption rate.

In January, OWM kicked off the **2014 Green Infrastructure Webcast Series** featuring seven national webcasts showcasing presentations from 21 green infrastructure experts. The webcasts focused on a range of topics, including operations and maintenance, climate resiliency, smart growth, innovative financing, and localized flood management. The series was attended by over 6,000 participants from all levels of government, the private sector, non-profits and academia.

**“Greening CSO Plans: Planning and Modeling Green Infrastructure for Combined Sewer Overflow (CSO) Control”** was released in March. This is a planning resource to provide municipal and sewer authorities with tools to quantify green infrastructure's contributions to an overall combined sewer overflow control plan. Communities with combined sewers often view green infrastructure as an attractive way to reduce stormwater flows going into the sewer system, thus reducing capital and operational costs. This resource explains how to use modeling tools such as EPA's Storm Water Management Model to optimize different combinations of gray and green infrastructure.

OWM held the second annual **Campus RainWorks Challenge**, a green infrastructure design competition for college and university students. The challenge engages the next generation of engineers, architects and planners in a hands-on learning experience. More than 80 student teams submitted green infrastructure designs for their campuses to compete in one of two categories — master plan or site design. The University of Florida and Michigan State University were the first- and second-place winners in the master plan category, and Kansas State University and Mississippi State University were first and second in site design. OWM announced the third annual Challenge in June.

Federal agencies signed a letter of support to launch the **Green Infrastructure Collaborative** at the President's State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience meeting on July 16. OWM also released new green infrastructure climate resiliency web resources for communities in conjunction with this event. The collaborative was formally launched at the White House on Oct. 8, with 26 external groups adding commitments to those from the federal family, non-governmental organizations, the private sector and academia to advance green infrastructure.

In FY 2015, OWM plans to engage with the newly formed Green Infrastructure Collaborative to support communities. Additionally, OWM is working on a 2015 Green Infrastructure Webcast Series and a series of community resiliency green infrastructure charrettes.





## NPDES Strategic Plan

In FY 2014, OWM embarked on a National Pollutant Discharge Elimination System (NPDES) strategic planning effort to meet the nation's 21st-century water quality challenges. Declining resources alongside increasing demands on water quality protection are creating an urgency to improve the NPDES program's efficiency.

The EPA NPDES program, in collaboration with the states, outlined goals, initiatives and a vision to guide program improvements over the next 3 to 5 years.

The three strategic goals are:

**Goal 1 — Modernize Process for Permitting and Oversight:** address permit backlog and simplify permitting oversight. NPDES programs need to focus resources on environmentally significant permits while ensuring permit coverage for other discharges.

**Goal 2 — Integrate Data Management and Decision Support:** use the latest technology to collect real-time data, simplify permit writing, and enable public access. NPDES programs need modern data management and electronic tools to reflect changes in information technology.

**Goal 3 — Increase Skilled Resources:** attract the next generation of expertise. NPDES programs need to make the most effective use of expertise to meet changing workforce and program needs.

As part of this process, OWM has been working closely with states and EPA regional offices to address their needs. Based on state input, OWM generated a white paper for each goal to chart the path forward for FY 2015 and beyond.

The major focus in FY 2015 is to establish one or two actions under each goal:

Goal 1: explore prioritizing permit issuance, and improve permit integrity and tracking to achieve program accountability.

Goal 2: explore updating individual permit forms and providing electronic tools for applications and notices of intent, as well as developing and implementing electronic decision support tools for permit writing and program management.

Goal 3: explore developing and implementing an NPDES skill needs and workforce assessment to better target assistance where technical issues hinder permit development or issuance.



## State and Tribal Water Pollution Control Grant Program Accomplishments

*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 assistance can go toward ambient water quality monitoring, water quality standard and total maximum daily load development, NPDES permitting and enforcement, advice and assistance to local agencies, training and public information. EPA provided approximately \$230 million in section 106 funding to prevent and control water pollution in FY 2014.*

**State and Interstate Water Pollution Control Grants:** In FY 2014, EPA provided more than \$187 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 fosters a watershed protection approach at the state level by looking at state water quality problems holistically and targeting 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 2014, the tribal set-aside was approximately \$26.5 million. Of the 565 federally recognized tribes, approximately 350 meet the criteria to receive section 106 funding, and 266 of these tribes were eligible to receive grants in FY 2014.



**State and Tribal Water Monitoring Initiative:** Using approximately \$17.7 million in FY 2014, OWM and the Office of Wetlands, Oceans and Watersheds 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 2014, states and tribes conducted sampling and reported water quality monitoring data for the National Rivers and Streams 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.

**State Water Quality Management Resource Study:** OWM is partnering with the Association of Clean Water Administrators and the Environmental Council of the States to update expenditures and resources for state water quality program management and quantify the resources needed to fully implement the Clean Water Act.

The new EPA-state task force is updating the 1998 Resource Analysis based on recommendations from a third-party review by the National Academy of Public Administrators, which concluded that the effort was well designed and executed. With the results of the review, the task force is moving forward to improve collaboration, fine-tune tools and methods for estimating state resource needs, and improve the effectiveness of water quality programs. The resource study will provide critical information on state expenditures and needs for Clean Water Act programs.



## Clean Water State Revolving Fund Program Accomplishments

*Through the CWSRF program, each state and Puerto Rico maintain revolving loan funds to provide low-cost financing for water infrastructure projects. Federal government capitalization grants and state matching contributions (equal to 20 percent of federal grants) fund each state's CWSRF. In its lifetime the program has provided over \$105 billion in funding for wastewater treatment, nonpoint source pollution control and estuary protection. For every dollar awarded to CWSRF programs through capitalization grants, the programs have committed over \$2.80 to projects.*

**FY 2014 assistance:** The CWSRFs provided over \$5.4 billion in FY 2014 through 1,525 assistance agreements. These loans funded a wide range of projects, as demonstrated in three examples below.

**Chesterton, Indiana,** closed a loan with the Indiana Finance Authority's Wastewater State Revolving Fund for \$10.8 million to finance construction of a 1.2 million gallon wet weather storage tank and upgrades to the local treatment plant's headworks. The increased storage capacity will enable Chesterton to manage wet weather flows that exceed treatment plant capacity by up to 26 million gallons per day, or what would occur during a 10-year storm event.

**Douglas, Arizona,** obtained a \$1.3 million loan from the Water Infrastructure Finance Authority of Arizona to design and install a 300-kilowatt solar system to power their wastewater treatment plant. The solar array is projected to generate nearly 520,000 kilowatt hours of electricity per year, or 50 percent of the plant's electricity demand. Once installed, Douglas estimates they will save \$32,000 per year in energy costs and \$640,000 over the next 20 years.

The Natural Bridge in **Rockbridge County, Virginia,** will be preserved as part of a land conservation project that includes 1,500 forested acres. Without the CWSRF loan of \$9.1 million to close the funding gap for the conservation easement, the private property could have been sold, making the forest available for residential and commercial development. Natural Bridge and the surrounding property are located in the James River watershed, which flows to the Chesapeake Bay. The purchase of Natural Bridge and surrounding property will also reduce nutrients flowing into the bay.



**WRRDA guidance:** The Water Resources Reform and Development Act of 2014 (WRRDA) became law on June 10. WRRDA amended several titles of the Clean Water Act. OWM issued Initial Interpretive Guidance for WRRDA on Sept. 18, 2014. See page 5 for more information on WRRDA and OWM's contributions.

**CWSRF oversight:** EPA headquarters and regional office staff provide oversight of the 51 CWSRF programs with the goal of promoting fiscal and programmatic integrity. This ensures the programs continue to serve as a viable source of affordable funding for projects that improve the quality of our nation's water bodies and critical infrastructure.

OWM staff participated in 10 CWSRF annual reviews of state programs. OWM assisted EPA regional offices with project file reviews and transaction testing for improper payments. In FY 2014, improper payments for the 51 CWSRF programs amounted to just 0.22 percent, far below the Office of Management and Budget's 1.5 percent threshold for triggering increased sampling.

OWM also developed a checklist for use by regional offices in their annual reviews. The checklist covers the core requirements applicable to the CWSRF program.

In addition, OWM finalized the Audit Standard Operating Procedure and the revised Transaction Testing SOP, which incorporates recommendations made by the Office of Inspector General last year in its review of EPA's Annual Financial Report.

Lastly, OWM developed a Sustainability Conversation Guide to facilitate dialogue between EPA regional offices and each state's CWSRF on such topics as asset management, green infrastructure and climate change. The Guide will help regional offices answer questions during oversight reviews.

**Climate resilience projects:** The SRF Climate Change Project Team — consisting of representatives from the CWSRF, Drinking Water SRF, and Regions 6 (AR, LA, NM, OK and TX) and 9 (AZ, CA, HI, NV and Pacific Islands) — led an effort to mainstream climate change priorities and activities in SRF programs. To increase SRF funding of resiliency projects, the subgroup is developing a national marketing plan and recognition program. SRF training sessions for state and EPA regional office employees will include a module on climate change.



## Sustainable Communities Program Accomplishments

*Reliable, affordable water and wastewater services are critical to a community's quality of life. Many small and rural communities lack adequate access to these services. The Sustainable Communities program provides financial and technical assistance to help these communities improve wastewater services, lower health risk and reap associated economic benefits.*

**Providing funding for communities:** The Sustainable Communities program provides funding to small and rural communities for planning, design and construction of water and wastewater treatment facilities through three vehicles:

The **Clean Water Indian Set-Aside (CWISA)** provides assistance for American Indians and Alaska Natives. In FY 2014, EPA distributed \$29 million for 77 projects to improve sanitation for over 11,000 homes.

The Locust Grove community in the Cherokee Nation near Tulsa, Oklahoma, is one of many communities benefiting from CWISA. Locust Grove has experienced raw sewage discharge due to unreliable influent lift station pumps. It will use CWISA funds to plan, design and construct lift stations and collection pipes.

The **Alaska Native Village and Rural Communities Grant Program (ANV)** funds water utility construction, training and technical assistance for Alaska Native Villages and non-native underserved communities. In FY 2014, the ANV program dispersed \$10 million for eight projects affecting 396 homes.

Buckland, in Alaska's Northwest Arctic Borough, is using ANV funds to construct service lines and water and sewer mains. This will include a lift station, sewage lagoon, water storage tank and water treatment plant.

The **U.S.-Mexico Border Water Infrastructure Program** protects public health and the environment by assisting communities 100 kilometers (62 miles) north and 100 kilometers south of the U.S.-Mexico border in gaining access to safe drinking water and sanitation. To date, the program has invested \$844 million to provide 581,584 homes with wastewater connections and 64,787 homes with drinking water connections.

In FY 2014, the program provided 12,756 homes with wastewater connections and 1,468 homes with drinking water connections. A project in Miguel Aleman, Mexico, eliminated exposure to untreated wastewater discharges by rehabilitating the wastewater collection system in the city's downtown. The project provided wastewater connections to 6,000 homes and eliminated 1 million gallons per day of untreated wastewater discharges to the Rio Grande.

**Educating homeowners about septic systems:** OWM held its second annual **SepticSmart Week** on Sept. 22-26, 2014. Nearly one-quarter of all American households depend on septic systems to treat their wastewater. SepticSmart Week educates homeowners and communities on how to maintain their systems. Improperly maintained systems can become significant sources of nutrient pollution.

OWM conducted outreach through social media, the SepticSmart website, entries on EPA's Greenversations blog, and email newsletters. OWM also engaged states and localities. The governors of Vermont, Minnesota and Oregon signed SepticSmart Week proclamations, and Suffolk County, New York, held its crapSHOOT video contest to raise awareness of septic maintenance and nitrogen pollution.

**Providing technical assistance for sustainable management:** Small and rural water systems face numerous challenges with regard to infrastructure, finances and staffing. OWM is providing assistance on numerous fronts.

OWM and the U.S. Department of Agriculture trained technical assistance providers, state and local government staff, and federal staff to deploy the jointly developed "Rural and Small Systems Guidebook to Sustainable Utility Management" and the accompanying Workshop in a Box. The overarching goal, as stated in the Guidebook, "is to support rural and small water and wastewater systems in their common mission to become more successful and resilient service providers."

OWM also competed and awarded a \$1.4 million cooperative agreement to the National Rural Water Association under which NRWA will conduct over 150 small system sustainability workshops in all 50 states. NRWA developed two mobile apps as part of the agreement. One app helps homeowners properly manage their septic systems, and the other provides small system managers who attended the sustainability workshops with utility management tools.

OWM continues to ensure that small communities have trained water and wastewater operators by offering no-cost operation and maintenance training. FY 2014 training locations included the U.S.-Mexico border and the U.S. Virgin Islands.





## Sustainable Management Program Accomplishments

*Many of our nation's water infrastructure systems will reach the end of their useful lifespan in the next 20 to 40 years. To address mounting needs, OWM collaborates with the Office of Ground Water and Drinking Water (OGWDW), other federal agencies and the infrastructure industry. This collaboration seeks to change the way the country views, values and manages water infrastructure.*

**Sustainable water and wastewater utilities:** OWM completed "Moving Toward Sustainability: Sustainable and Effective Practices for Creating Your Water Utility Roadmap." The guidance is intended to help utilities implement "proven and effective practices over time to improve their operations and move toward sustainability, at a pace consistent with their needs and the needs of their communities." The guidance describes practices that, if followed, should help utilities save money, assure water supply reliability, become more energy and water efficient, and increase resiliency to disasters and climate change. Several major water sector associations and leading utilities endorsed the guidance.

Following the release, OWM participated in two sessions at the Water Environment Federation Technical Exhibition and Conference, and initiated webinars to highlight utilities implementing sustainable practices based on the guidance.

**Energy efficiency partnerships:** OWM continued its partnership with the U.S. Department of Energy (DOE) on energy efficiency for wastewater treatment plants and the water sector generally. OWM and DOE held quarterly meetings, made presentations to the DOE-funded Industrial Assessment Centers at their national meeting, and began discussions with state energy offices to potentially develop programs in key states to improve wastewater energy efficiency.

OWM also continued its partnership with EPA's Office of Air and Radiation (OAR) to develop an initiative to improve energy efficiency and reduce greenhouse gases. OWM assists OAR in planning for implementation of the Clean Power Plan to ensure that wastewater treatment plants are included as part of the energy efficiency element of state planning.

**Climate Resilience-Small Community Assistance Water Security Partnership:** OWM received funding to initiate a pilot project to improve climate resilience. OWM, in partnership with OGWDW's Water Security Division, selected a small community in EPA Region 5 (Midwest states) for the first pilot. As the project progresses, EPA will work closely with this community to assess its climate resilience, assist with implementing necessary investments, and identify the most appropriate financing for its needs. Completion is expected in spring 2015.

**Clean Watershed Needs Survey:** OWM completed data collection and analysis for the 16th Needs Survey for the upcoming Report to Congress. EPA submitted it to the Office of Management and Budget on Sept. 18, 2014. Conducted every four years, the survey estimates the capital infrastructure investments needed nationwide for wastewater and stormwater infrastructure.





## WaterSense Program Accomplishments

*WaterSense is a national symbol for water efficiency among utilities, plumbing manufacturers, retailers and consumers. WaterSense has helped consumers save 757 billion gallons of water and over \$14.2 billion in water and energy bills. Additionally, consumers achieved reductions of 101 billion kilowatt hours of electricity and 32 million metric tons of carbon dioxide through use of WaterSense labeled products.*

**WaterSense launches H<sub>2</sub>Otel Challenge:** OWM launched the WaterSense H<sub>2</sub>Otel Challenge on Feb. 5, 2014. During the challenge, hotels ACT — assess, change and track — their water use by applying best management practices from *WaterSense at Work: Best Management Practices for Commercial and Institutional Facilities*. OWM recorded a series of technical training webinars and made them available on the WaterSense website. It also developed case studies and tools for tracking water use and evaluating projects. By October 2014, more than 800 hotels signed up. OWM hopes to add more as it continues the Challenge into 2015.

**Encouraging water efficiency:** OWM held the sixth annual WaterSense Fix a Leak Week from March 17-23, 2014. This effort encourages Americans to conserve water by checking for water waste and fixing leaks. More than 50 events were held across the country, including races in California, Arizona, Utah, Colorado, Georgia and Virginia to support the theme of chasing down leaks. Taking simple steps can save households more than 10,000 gallons of water and as much as 10 percent on utility bills annually.

OWM also engaged consumers on water efficiency with the Sprinkler Spruce Up campaign in early May and Shower Better Month in October.

**WaterSense revises program to label professional certification programs:** On July 24, 2014, OWM released the *WaterSense Professional Certification Program Labeling System* and revised specifications for professional certification programs. The changes provide WaterSense with a more sustainable framework to accommodate program growth. As part of the program changes, WaterSense will no longer enter into partnership agreements with individual professionals. Instead, all irrigation professionals certified by WaterSense labeled programs can take advantage of WaterSense program benefits, including potential job opportunities associated with the WaterSense labeled new home specification.

**2014 Partners of the Year:** WaterSense has more than 1,500 partners to encourage water-efficient behaviors and the purchase of quality products that use less water. In 2014, the program recognized Kohler Co. with its second **Sustained Excellence Award** for its continuous high level of support.

Seven partners were recognized as **Partner of the Year**:

- **Promotional Partners of the Year:** Cobb County (Georgia) Water System and Colorado Springs (Colorado) Utilities
- **Large Manufacturer Partner of the Year:** Delta Faucet Company
- **Small Manufacturer Partner of the Year:** HydroPoint Data Systems
- **Retailer Partner of the Year:** The Home Depot
- **Builder Partner of the Year:** KB Home
- **Professional Certifying Organizations of the Year:** The Irrigation Association and The Sonoma-Marín (California) Saving Water Partnership

WaterSense also presented five **Excellence Awards**, which recognize additional organizations and individuals whose support stood out in one or more evaluation categories:

- **Excellence in Outreach and Education:** Athens-Clarke County (Georgia) Public Utilities Department, San Francisco (California) Public Utilities Commission, Texas A&M AgriLife Research and Extension Center at Dallas
- **Excellence in Strategic Collaboration:** Denver (Colorado) Water
- **Excellence in Promoting WaterSense Labeled Products:** Puget Sound (Washington) Energy

**WaterSense** has helped **reduce** the amount of **energy needed** to heat, pump, and treat water by

**101 billion kilowatt hours,**

enough to supply a year's worth of power to more than



...eliminating **37 million metric tons** of greenhouse gas emissions...



...the equivalent of planting nearly **941 million trees...**



...and **saving consumers \$14.2 billion** in water and energy bills



## Industrial Program Accomplishments

*Industrial wastewater discharges may contain pollutants that affect wastewater treatment effectiveness and receiving water quality. The Industrial program protects and improves water quality by permitting direct-discharging sources such as manufacturing facilities, vessels, coal mines, shale gas extraction operations and steam electric power plants. It also includes the national pretreatment program, which regulates thousands of industrial operations that discharge into municipal sewers that flow to sewage treatment works.*

**Vessel general permit (VGP) implemented:** The revised VGP went into effect on Dec. 19, 2013. It regulates discharges from commercial vessels greater than 79 feet in length to protect the nation's waters from ship-borne pollutants and invasive species that may be introduced by ballast water.

In addition, vessels are required under the VGP to use environmentally acceptable lubricants (EALs) where technically feasible. This resulted in a shift in industry practice, with one EAL manufacturer noting a large increase in production. OWM staff received an EPA pollution prevention award for this effort.

To implement the permit, OWM developed an electronic notice of intent tool, which owners and operators have used to seek permit coverage for more than 50,000 vessels. OWM coordinated with the Office of Enforcement and Compliance Assurance to develop an enforcement response policy.

**Small vessel general permit (sVGP) finalized:** The sVGP is the first CWA permit to address discharges incidental to the normal operation of non-military and non-recreational vessels less than 79 feet in length. This permit, combined with the VGP, is intended to protect the nation's waters from vessel-borne pollutants and reduce the risk of introducing and spreading invasive species.

The permit specifies best management practices to control discharges for several broad categories, including general discharges, fuel management, engine and oil control, solid and liquid waste management, and ballast water. The sVGP took effect Dec. 19, 2014. However, after EPA issued the sVGP, a moratorium for small vessel discharges other than ballast water was enacted through Dec. 19, 2017.

**Rule protecting fish from cooling water systems finalized:** OWM supported the Office of Science and Technology to finalize standards to protect fish and other aquatic life from cooling water systems at large power plants and factories.

The rule establishes CWA requirements for existing power-generating, manufacturing and industrial facilities that withdraw more than 2 million gallons per day from waters of the U.S. and use at least 25 percent of the withdrawn water exclusively for cooling. The rule covers roughly 521 factories and 544 power plants.

OWM worked with the National Marine Fisheries Service, the U.S. Fish and Wildlife Service and others to address threatened and endangered species concerns as part of the NPDES permitting process that establishes controls for cooling water intake structures.





## Municipal Program Accomplishments

*OWM's Municipal program focuses on stormwater, combined sewer overflows, and municipal sewage treatment plant performance during wet weather. As it flows, stormwater collects pollutants and is discharged, usually untreated, into the nation's waters. Stormwater is a source of water quality impairment for over 22,000 miles of river and streams, over 700,000 acres of lakes, and over 800 square miles of estuaries. In addition to water quality problems, stormwater reduces groundwater recharge and can increase flooding.*

**Green Infrastructure Collaborative:** Federal agencies signed a letter of support to launch the Green Infrastructure Collaborative at the July 16, 2014, meeting of the President's State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience. The Collaborative, which was formally launched Oct. 8, will leverage efforts from the federal family, non-governmental organizations, the private sector and academia to advance green infrastructure. This builds on an original statement of intent signed in 2007. (See page 6 for more on the Collaborative and other green infrastructure accomplishments.)

**Supporting the municipal separate storm sewer system (MS4) sector:** OWM continues to provide guidance to states and EPA regional offices on MS4s. In June, OWM published "Post Construction Performance Standards & Water Quality-Based Requirements: A Compendium of Permitting Approaches." It provides examples of MS4 permits that implement numeric post-construction performance and/or design standards, and presents different permitting approaches to address impaired waters and total maximum daily loads.

The program also provided direct consultation to regions and states on MS4 permits. It conducted a workshop, ran models to support a retention standard, reviewed local ordinances and codes, provided recommendations to communities, and helped resolve permittee concerns through the Environmental Appeals Board's alternative dispute resolution process.



**Technical assistance:** OWM selected 14 communities to receive \$860,000 in green infrastructure technical assistance. The selected communities will receive assistance for projects related to community resiliency, operations and maintenance, off-site mitigation, and green infrastructure design.

OWM also provided \$335,000 in technical assistance to five communities to help them develop components of integrated plans for wastewater and stormwater management. This technical assistance will help recipients meet Clean Water Act requirements for water management in a cost-effective and environmentally beneficial way.

**Green Infrastructure Community Summit:** As green infrastructure increasingly becomes an integral component of sustainable infrastructure, partnerships between federal, state and local stakeholders are critical. To strengthen these partnerships, EPA and Onondaga County, New York, hosted the first-ever Green Infrastructure Community Summit in Syracuse on Oct. 20-22, 2013.

The gathering of partner and technical-assistance communities culminated in a discussion about experiences implementing green infrastructure. This dialogue identified common lessons and challenges for early adopters. The agenda covered program development, innovative financing, maintaining sustainable systems, performance and promoting adoption.

**Combined sewer overflows (CSOs):** CSOs are a major water pollution concern for hundreds of cities in the U.S. with combined sewer systems. In FY 2014, OWM and EPA's Region 2 office in New York assisted the New Jersey Department of Environmental Protection in drafting individual permits for 25 communities with CSOs. These CSOs are currently covered under a general permit, so the individual permits will provide added protection by accounting for each system's circumstances. OWM and Region 2 also provided technical workshops for NJDEP and New Jersey municipalities on the NPDES permitting process and developing and reviewing CSO long-term control plans. These actions are important steps toward reducing combined sewer overflows in New Jersey communities.



## Rural Program Accomplishments

*The Rural program's goal is to protect water quality from agricultural impacts — including animal agriculture facilities and spray pesticides — as specified under the Clean Water Act. The program develops regulations, policies, technical implementation guidance and outreach relating to implementation of NPDES concentrated animal feeding operation (CAFO) regulations. It also focuses on innovative approaches for working with the agricultural community.*

**Nutrient recovery and technology research:** OWM explored opportunities to advance manure treatment technologies that can yield benefits for the environment and for farmers. Technologies such as anaerobic digesters and gasification systems can produce value-added products such as biogas and fertilizer. In addition, these technologies often offer facilities improved manure management flexibility that allows for better timing of manure applications. OWM is drafting a white paper on these emerging technologies.

**Winter application of manure:** OWM is collaborating on a draft white paper on impacts and drivers for winter application of manure. The paper facilitates discussion of alternatives to winter application by describing federal and state efforts as well as research on potential water-quality impacts.

OWM is collaborating with the Southern Extension and Research Activity 17 group, which is composed of research scientists, policymakers, extension personnel and academics.



**Communication and collaboration:** OWM held three animal agriculture discussion group meetings to build a dialogue between animal agriculture producers and EPA, and facilitate adoption of water-quality best management practices by livestock and poultry producers.

OWM also participated on the evaluation panel for the U.S. Poultry and Egg Association's Family Farm Environmental Excellence Award, which recognizes "exemplary environmental stewardship by family farmers engaged in poultry and egg production."

OWM collaborated with EPA regional offices on permit development, and with other federal agencies, including the National Marine Fisheries Service, in a workgroup to develop aquaculture permitting in the Gulf of Mexico.

**10-year review of CAFO regulations:** OWM reviewed its 2003 CAFO regulations under section 610 of the Regulatory Flexibility Act. Section 610 requires federal agencies to review economic impacts of certain rules on small entities within 10 years of promulgation.

OWM completed its review and concluded there is a continued need for the regulations, and revisions are not necessary at this time to minimize impacts on small entities. OWM received over 200 comment letters, many of which supported continued regulation. Regulatory revisions in 2008 and 2012 reduced the number of CAFOs that must apply for permits, yielding a burden reduction to CAFO owners and operators.



## State and Regional Program Accomplishments

*The State and Regional Branch provides technical and policy support to implement the National Pollutant Discharge Elimination System (NPDES) permit program. Through coordination with states and EPA regional offices, the program guides translation of water quality goals and standards into permit requirements, works to resolve legal barriers that prevent optimal program implementation, provides timely information on the integrity of NPDES permits and programs, and produces efficient processes and measurable results.*

**Sufficiently Sensitive Methods Rule:** This rule, finalized and effective in FY 2014, states that NPDES permit applicants can only use “sufficiently sensitive” EPA-approved test methods when completing a permit application. Sufficiently sensitive methods are capable of measuring pollutants at or below applicable water quality criteria or permit limits. The rule also states that permit-issuing agencies must allow only EPA-approved sufficiently sensitive methods for analyses of pollutants or pollutant parameters under NPDES permits.

**Training and technical assistance:** OWM launched advanced technical training on developing nutrient requirements for NPDES permit writers. After piloting the training in summer 2013, OWM held two three-day courses in late 2014. Permit writers from all 10 EPA regional offices and more than 30 states exchanged information and best practices on identifying applicable water quality standards, determining the need for effluent controls, and calculating numeric permit conditions for nitrogen and phosphorus.

The nutrient course builds on the longstanding success of OWM’s NPDES Permit Writer’s Course, which has trained thousands of permit writers over more than two decades on the fundamentals of NPDES permit development. In FY 2014, OWM conducted four weeklong NPDES permit courses at sites across the country and launched updates to the web-based permit training.



To ensure consistent national expertise in the core program area of whole-effluent toxicity (WET), OWM provided training and technical support to EPA regional office and state staff on NPDES WET program implementation, including training webinars on the WET test of significant toxicity. OWM provided support to several regional offices and states on such matters as reviewing draft implementation procedures.

**Climate-Ready NPDES:** OWM plays a key role in supporting EPA's goal of addressing the challenge of climate change. OWM co-leads the EPA headquarters-regional office NPDES Climate Change Adaptation team. This work will help communities adapt to climate change. As part of the Climate-Ready NPDES program, OWM assists permitting authorities with permit provisions; methods, data and models; climate-ready wastewater technologies and approaches; and training and outreach. OWM is also considering pilots for vulnerability assessments, resiliency measures, revised low-flow statistical methods, energy-water integration practices, innovative NPDES-related plans, and adaptation work related to the State Revolving Fund.

**Legal and policy support:** OWM's legal and policy team continued providing cross-program support to ensure the legal integrity of state NPDES programs. OWM collaborated with EPA's Office of Enforcement and Compliance Assurance (OECA) to fulfill the EPA Inspector General's mandate to review EPA-state NPDES memoranda of agreement. OWM and OECA made significant progress in working with EPA regions to respond to state program withdrawal petitions, and co-led with EPA Region 2 (New Jersey, New York and Caribbean) an in-depth review of the U.S. Virgin Islands NPDES program. OWM also provided ongoing support to states and EPA regions on program scope issues, such as the applicability of CWA requirements to abandoned mines and tribal lands.

**Reviewing state and EPA regional office NPDES programs:** To ensure a level of quality and consistency in NPDES permitting nationwide, EPA conducts permit quality reviews (PQRs). In FY 2014, OWM continued transitioning control of PQRs of state-led programs to EPA regions. It refined the PQR standard operating procedures and review tools, incorporating suggestions from EPA regional report writers. OWM also trained new Region 4 (southeast states) NPDES managers and held regular meetings with regional branch chiefs and PQR coordinators.

**United States Environmental Protection Agency**

**Office of Wastewater Management**

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