TESTIMONY OF BENJAMIN H. GRUMBLES
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Mr. Chairman and Members of the Committee, I am Benjamin H. Grumbles, Assistant Administrator for Water at the United States Environmental Protection Agency (EPA), and I am grateful for the opportunity to testify before you today on the nation's water infrastructure needs and the innovative and sustainable solutions the Environmental Protection Agency and its partners are pursuing.

On October 18, America celebrates the 35th Anniversary of the Clean Water Act (CWA), one of the world's most successful and enduring environmental laws. The CWA has dramatically improved water quality through scientific standards, discharge permits, pre-treatment requirements, state and local funding, watershed planning and a wastewater infrastructure system unparalleled in the world.

I am proud of the work EPA is doing and the progress we are making with our Regions, the States, Tribal communities and other partners to implement the vital objectives of this milestone legislation. Today, of the 222.8 million people served by wastewater treatment facilities, more than 98.5 percent (219.5 million people) are served by "secondary treatment" (or better), a technical but important term of art that refers to a biological treatment process designed to remove dissolved organic matter from wastewater. Secondary treatment may remove up to 90 percent of remaining biological matter such as human waste, food waste, soaps and detergent.

More than 281 million people receive drinking water on a daily basis from more than 52,000 community water systems throughout the nation. Advances in wastewater and drinking water treatment constitute major achievements in modern American public health.

Administrator Stephen Johnson identifies the development of innovative, market-based, and sustainable solutions for water infrastructure financing and management as a top priority in his action plan for the Agency.

Over the past 20 years, communities have spent more than $1 trillion (in 2001 dollars) on infrastructure, operations and maintenance for wastewater treatment and disposal and drinking water treatment and supply. But, it may not be enough to keep pace with America's aging infrastructure systems. Many municipal water distribution pipelines and sewer systems were constructed in the period following World War II with an expected design life of 20 – 50 years. Deteriorating pipelines can cause releases of water or wastewater that result in environmental contamination and a net loss of water with major economic consequences. In addition, numerous treatment facilities that process water and wastewater are in need of upgrading to meet capacity and water quality requirements associated with protection of public health and the environment. There is critical need for replacing, upgrading, and modernizing these infrastructure systems.

Infrastructure Needs

With the aging of the nation's infrastructure and the growing investment need, the wastewater industry faces a significant challenge to sustain and advance its achievements in protecting public health and the environment.

In October of 2002, EPA released the Clean Water and Drinking Water Gap Analysis Report. The report estimated that if capital investments remained at current levels, the potential gap between spending and needs between 2000 and 2019 would be approximately $122 billion (in 2001 dollars) for wastewater infrastructure and $102 billion (in 2001 dollars) for drinking water infrastructure. If revenue grows at 3% per year, a projection that is consistent with long-term growth estimates of the economy, the gap is approximately $21 billion (in 2001 dollars) for wastewater infrastructure and $45 billion (in 2001 dollars) for drinking water infrastructure.

The general causes of the infrastructure funding "gap" are not difficult to identify. Much of the projected gap is the product of deferred maintenance, inadequate capital replacement, and a generally aging infrastructure. In addition, populations are increasing and shifting geographically, thus requiring investment in existing or new infrastructure. The Census Bureau projects the population to grow to 325 million by the year 2020 (an increase of more than 15% over the 2000 population). Lastly, unlike utilities subject to state regulation such as electric and natural gas service and privately owned water systems, many public utilities in the US have not historically charged their users the full cost of service.

Federal Financing for Water Infrastructure

At EPA, we think of water infrastructure financing in waves of progress. If we look back at the innovations of the last generation, the first wave ushered in the historic Clean Water and Safe Drinking Water Acts in the early 1970s in response to the degradation of our waters.

The second wave was another historic moment in transitioning to the State Revolving Funds used to stretch the federal investment. On February 4, 2007 we marked the 20th anniversary of the passage of the Clean Water Act amendments that authorized the Clean Water State Revolving Fund (CWSRF) program. The creation of the CWSRF in 1987 and the Drinking Water State Revolving Fund (DWSRF) in 1996 were major milestones on the path to financial sustainability for our water infrastructure.

With the help of federal capitalization grants, the States provide low interest loans for water infrastructure projects through their individual CWSRFs and DWSRFs. Since loan repayments allow the funds to "revolve" over the long-term, the SRFs provide sustainable sources of financing into the future.

Over the past 19 years, the CWSRF program has played a significant role in helping to finance water infrastructure, a role that will continue over the long-term. Over this time period, EPA has provided approximately $25 billion to help capitalize the state-run programs. In combination with state monies, bond proceeds, and recycled loan repayments, the CWSRFs have been able to

"leverage" the Federal investment into $61 billion to fund worthy water infrastructure projects. The newer DWSRF program has accumulated close to $13 billion in its first 10 years of operation. The year 2006 marked an important and notable milestone in the CWSRF: it was the first time that over $5 billion in assistance was provided in any one year.

The success of the SRFs can be attributed in large part to the broad flexibility of the funds and the elimination of overlapping federal and state requirements. The broad flexibility has allowed states to implement the SRFs to fuller advantage. An example of this flexibility is evident in California which, on average, provides over $250million in water quality funding annually. In California, the CWSRF's flexibility has allowed the state to undertake its most pressing water quality needs, whether through traditional wastewater treatment projects, or by reducing nonpoint source pollution from agricultural runoff. The choice of achieving nutrient reduction through less-expensive Best Management Practices on farm lands rather than installing highly advanced nutrient removal at publicly owned treatment works can be a win-win for the environment and for the sustainability of our water infrastructure.

At the same time, elimination of overlapping federal and state requirements has reduced both delay in funding and cost-inefficiencies we see when direct grants are made, as was the case with construction grants and remains the case with Special Appropriations Act projects (earmarks).

EPA is committed to helping our partners sustain progress and increase opportunities for SRFs through financial stewardship, innovation, and collaboration. With a focus on promoting investment in sustainable infrastructure and encouraging greater creativity in project planning and development, we look forward to working with our state and local partners to make the program even more effective. The SRF programs demonstrate the power of partnerships to leverage, innovate, and excel to meet water infrastructure, watershed protection, and community health needs.

The SRFs are now and will continue to be a critical tool for capital financing of our Nation's wastewater infrastructure. But, they are not the only tool. Other aggressive and innovative actions and technologies are crucial to solving the Nation's water infrastructure needs.

Water Enterprise Bonds

In addition to the successful SRF programs, we believe that other aggressive and innovative financing and management tools are crucial to solving the Nation's water infrastructure needs. These innovations are the upsurge of a third wave – which is bringing in new ideas about sustainability and encouraging greater private sector participation. EPA is helping lead this third wave of water infrastructure financing and investment by proposing an important new tool – Water Enterprise Bonds – to accelerate and increase investment in the nation's water infrastructure. Water Enterprise Bonds will enhance access and flexibility for utilities to issue private activity bonds for public-purpose drinking water and wastewater facilities.

The objectives of this proposal, contained in the President's FY'08 Budget Request, are to accelerate and increase investment in the Nation's water infrastructure and to facilitate development of more sustainable infrastructure projects through innovative market-based approaches. Specifically, the proposal is to amend the Internal Revenue Code to remove the State volume cap on the use of private activity bonds for water and wastewater infrastructure. Providing expanded access to private activity bonds for communities will allow them to finance, build, and manage water facilities using public-private partnerships that deliver the best mix of technology, construction, and operations with the appropriate transfer of risk to their private sector partners. To ensure the long-term financial health and solvency of these drinking water and wastewater systems, communities using these bonds must have demonstrated a process that will move towards full-cost pricing for services within five years of issuing the Private Activity Bonds. This will help water systems become self-financing and minimize the need for future subsidies. This proposal, if enacted, would lead to a more robust market offering of new solutions to our water infrastructure investment challenges.

We are also looking aggressively for innovative ways to reduce costs and increase incentives to foster sustainable water infrastructure investment and management. This nation is increasingly understanding that our goal needs to be not simply spending more on infrastructure, but investing wisely in efficient utilities that focus on life-cycle costs, plan for and fund asset management and

replacement, and consistently think and act like the enterprises they should be, for example, seeking to create revenue streams out of waste streams.

As part of that effort, we held a milestone conference in March 2007, “Paying for Sustainable Water Infrastructure: Innovations for the 21st Century.” This unprecedented forum for ideas and actions underscored the urgency of sustaining our water infrastructure. It brought together more than 600 of our nation’s best and brightest water experts to discuss, debate, and brainstorm innovative approaches to reducing costs and increasing investment in drinking water and wastewater systems and programs.

We are continuing to expand upon this constructive dialogue with several follow-up meetings with our conference co-sponsors and other stakeholders. In addition, we have converted the conference website into an “Innovative Financing Forum" that includes online discussion boards to share ideas, relevant articles, and other information.

EPA’s Approach to Sustaining Water Resources

The Agency has approached the challenge of keeping pace with infrastructure needs of the future by developing a comprehensive strategy built upon what we call the ”Four Pillars of Sustainable Infrastructure” – better management, full cost pricing, water efficiency, and the watershed approach. It is an effort to help ensure that our nation’s water infrastructure is sustained into the future by fundamentally changing the way America views, values, and manages its water infrastructure. It is a collaborative effort involving drinking water and wastewater utility managers, professional and trade associations, local watershed protection organizations, private sector experts in technology, engineering, and finance, and federal, state, and local officials.

Better Management

The Better Management “pillar” involves changing the paradigm for utility management from managing for compliance to managing for sustainability. We are concentrating our efforts on improved performance through state-of-the-art management approaches focused on the entire utility, working with smaller utilities to improve their capacity to comply with regulatory requirements, and providing utilities with information on cost-effective technologies.

On May 8, 2007, EPA signed a groundbreaking utility management partnership agreement with six leading water and wastewater utility organizations to ensure the long-term viability of our nation's water systems through effective utility management. Through this partnership, we agreed to promote key attributes of effectively managed utilities, encourage broader use of performance measures by utilities to gauge their performance, and identify resources to help utilities manage all of their operations more effectively.

This partnership provides utilities with a common management framework to help them ensure that their operations and infrastructure are sustainable in the future. We are now working in partnership with the signatory organizations to encourage the widespread adoption of the utility attributes and performance measures, along with other sustainable management practices like environmental management systems and asset management across the water sector.

Full Cost Pricing

In many cases, water and wastewater services in this country do not consistently recover (or even calculate) the full cost of service. Over the past year, the Agency has been working with drinking water and wastewater utilities, public utility commissions, academia, and consultants to discuss issues associated with achieving full cost pricing. The challenge is significant, because we must work to help utilities correct market signals that have been distorted by years of subsidies. This past July, the National Association of Regulatory Utility Commissioners responded to our efforts by issuing a resolution calling for economic regulators and public health and environmental regulators to work together to advance attainment of sustainable public health and environmental protection.

Full cost pricing will only be possible and successful in an efficiently structured and managed water and wastewater sector. Activities carried out under the other pillars will help to address inefficiencies in management and operations. We are also working with our industry partners to develop tools and techniques to assist utilities interested in recognizing and recovering the long-term, full cost of providing service. To this end, we will be working to convene training and workshops in 2008 that will help communities find appropriate options for cost allocation and rate design.

Water Efficiency

Managing water is a growing concern in the United States. Due to increases in both population and per capita water usage, communities across the country are starting to face challenges regarding water supply and water infrastructure. Improved water efficiency reduces the strain on aging water and wastewater systems, makes better use of existing resources, and can delay or even eliminate the need for costly new infrastructure investments. It also diverts less water from rivers, bays, and estuaries, which helps keep the environment healthy. Improved water efficiency also translates into cost and energy savings by reducing the amount of energy used to treat, pump, and heat water.

Under the Water Efficiency "pillar" we are working to foster a national ethic of water efficiency, so that water is valued as a limited resource that should be used wisely. In June 2006, EPA announced WaterSense, an innovative partnership program that helps American consumers and businesses make smart water choices that save money and maintain high environmental standards without compromising performance.

WaterSense features a label that will make it easy to find products and services that save water. In order to ensure product quality and performance, WaterSense labeled products must be third-party certified to meet strict efficiency and performance criteria. To date, WaterSense has signed agreements with over 160 promotional, manufacturer, retailer, and certifying organization partners.

In October 2006, WaterSense began labeling programs that certify irrigation design and installation professionals. Nationwide, landscape water use is estimated to account for nearly one-third of all residential water use, totaling more than 7 billion gallons per day and up to 50 percent of that goes to waste due to factors such as evaporation and runoff caused due to improper system design; these certified professionals can make a big impact. Four irrigation programs qualified for the WaterSense label and over 250 certified irrigation professionals have partnered with the program.

In January 2007, WaterSense issued a final specification for a new generation of high efficiency toilets that use only 1.28 gallons per flush but still perform as well as, or better than, conventional models that use as much as 5.0 gallons per flush. If only 10 percent of the existing 222 million

toilets in the United States were replaced with WaterSense labeled toilets, the total savings potential is approximately 246 million gallons per day. This equates to more than 89.7 billion gallons each year. Already, seven manufacturers have labeled 64 different HET models. In the coming weeks, WaterSense expects to finalize a specification for high-efficiency bathroom sink faucets and faucet accessories that could potentially save 61 billion gallons annually.

WaterSense is also developing voluntary specifications for water-efficient new homes and is working with building rating systems such as the U.S. Green Buildings Council Leadership in Energy and Environmental Design (LEED) Green Building Rating System to adopt water-efficiency components to their rating systems. Looking ahead, WaterSense will focus on other commercial and residential plumbing products, as well as irrigation system technologies, such as soil moisture sensors and weather based controllers.

Other important activities under this pillar include implementing a Water Efficiency Leader program to inspire, motivate, and recognize organizations and individuals who are working to improve water efficiency beyond the labeling of products. We are also supporting the formation of a national organization called the Alliance for Water Efficiency (AWE), which initially will establish a water-efficiency information clearinghouse and website. In the future, AWE's activities will expand to work with and complement WaterSense's activities including monitoring national plumbing and appliance standards and codes. One of EPA's newest and most impressive facilities, the Region 8 Headquarters, will save water through the use of high efficiency plumbing fixtures such as waterless urinals and dual-flush toilets. It also has a green roof.

We are also beginning to collaborate with public officials and utility managers to identify strategies and tools for reducing water loss from systems. Making water distribution more efficient will not only save water and reduce costs, but it will save energy and significantly improve sustainability and increase capital available for infrastructure investment.

Watershed Approach

The goal of this "pillar" is to integrate watershed-based approaches into decision making at the local level so that communities can make the most informed and cost-effective infrastructure

decisions that also help to ensure the overall health of the watershed. In many cases, adoption of watershed-based approaches, such as source water protection, “green infrastructure”, water quality trading, and watershed permitting, in conjunction with traditional “hard infrastructure” approaches, can help reduce overall infrastructure costs.

EPA will continue to advance the President’s vision of “Cooperative Conservation” through grassroots, community–driven efforts to protect local watersheds and waterbodies of natural significance. Last December, we convened a group of drinking water, wastewater, and stormwater utility managers to discuss watershed approaches to utility management. Building off the success of that effort, we asked the National Advisory Council on Environmental Policy and Technology to provide EPA with recommendations on how to advance our efforts in this area. We received initial recommendations from the group in July and they are currently engaged in the second phase of their project

Green Infrastructure

The Agency’s approach to sustainable infrastructure does not rely solely on the four pillars strategy. In April 2007, EPA Administrator Stephen Johnson signed onto a partnership with four national organizations to promote the use of "green infrastructure" to lessen sewer overflows and runoff after storms. A primary goal of this new partnership is to reduce stormwater runoff volumes.

Green infrastructure represents a new approach to stormwater management that is cost-effective, sustainable, and environmentally friendly. Green infrastructure techniques utilize natural systems, or engineered systems that mimic natural landscapes, to capture, cleanse and reduce stormwater runoff using plants, soils and microbes.

On the regional scale, green infrastructure consists of the interconnected network of open spaces and natural areas (such as forested areas, floodplains and wetlands) that improve water quality while providing recreational opportunities and wildlife habitat. On the local scale, green infrastructure consists of site-specific management practices (such as rain gardens, porous pavements, and green roofs) that are designed to maintain natural hydrologic functions by absorbing and infiltrating precipitation where it falls.

EPA and the Federal Highway Administration have teamed up to engage a variety of public and private partners in creating a national model for green infrastructure and sustainable transportation – the Green Highways Partnership. The Partnership, with its growing network of diverse partners, is a model for promoting sustainable infrastructure and environmental protection through low-cost and low-impact solutions such as: permeable materials and state of the art technologies that cost-effectively reduce or eliminate stormwater flows and pollutants; construction with recycled materials; and integration of planning, practices and incentives to protect critical habitats, waterways, and ecosystems.

The Green Highways Partnership is actively benchmarking, developing and demonstrating these approaches and actions throughout the Mid-Atlantic. We are planning to share the lessons learned and innovative technologies from these studies and projects. The outcome of these efforts is sustainable transportation infrastructure that is "beyond compliance" and leaves the environment and communities "better than before."

Research

The Agency's Office of Research and Development received nearly $7 million this year for a new research program to generate the science and engineering to improve and evaluate promising innovative technologies and techniques to reduce the cost and improve the effectiveness of operation, maintenance, and replacement of aging and failing drinking water and wastewater treatment and conveyance systems.

The initial focus of the program will be on "underground" infrastructure —America's "buried assets" that provide a foundation for environmental protection and economic growth. The initial plan primarily identifies research, demonstration and technology transfer activities for wastewater collection systems and drinking water distribution systems. Products will be provided to drinking water and wastewater utilities to help them adopt and implement new and innovative technologies and methods for cost-effectively operating, managing, rehabilitating and extending the life of their systems.

Water Security

The security of our water and wastewater infrastructure continues to be an important priority for the EPA and the National Water Program. EPA has worked hard to ensure that drinking water systems fulfill their obligations under the Bioterrorism Act. We have also provided voluntary guidance and training to wastewater utilities on how to conduct vulnerability assessments, prepare emergency response plans, and address threats from terrorist attacks. To be sustainable, water and wastewater systems must be secure. We are working with the Department of Homeland Security to advance efforts on a variety of fronts.

Climate Change

EPA and its partners are learning more and doing more to confront another serious challenge for our water resources -- climate change. Increasingly, we understand climate change may have impacts on water infrastructure and watersheds that will affect our actions under the Clean Water Act, Safe Drinking Water Act, and various ocean and coastal laws.

While there remains some uncertainty on the scope, timing and potential regional impacts of climate change related effects, EPA and its partners are taking prudent steps now to assess emerging information, evaluate potential impacts of climate change on water programs, and identify appropriate response actions. The National Water Program recently established an intra-agency Climate Change Workgroup, made up of senior managers from EPA headquarters and regional water offices. The Water Program Climate Change Workgroup is working to improve understanding of climate change impacts on water resources and is finalizing a Climate Change Strategy for the National Water Program.

Conclusion

Taken together, all of these initiatives, innovative tools, and funding resources will help EPA and its partners continue to build on the gains in water quality that we have worked so hard for and enjoyed over the past 35 years.

As the Committee continues to study water infrastructure needs, the Administration would like to encourage a constructive dialogue on the appropriate role of the federal government in addressing

these needs and on innovative new tools such as Water Enterprise Bonds. Mr. Chairman, I look forward to working with you and your colleagues and answering any questions you may have.

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