

April 4, 2011

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Improving Regulations Docket
U.S. Environmental Protection Agency
Docket Center, Mailcode 2822T
1200 Pennsylvania Ave., NW
Washington, DC 20460
Via *regulations.gov*

RE: Comments on EPA's Plan for Retrospective Review under Executive Order 13563, Docket No. EPA-HQ-OA-2011-0156

Dear Sir or Madam:

The National Association of Clean Water Agencies (NACWA) is pleased to provide the following comments on the U.S. Environmental Protection Agency's (EPA) plan for review of regulations under Executive Order 13563 (76 *Fed. Reg.* 9988, Feb. 23, 2011). NACWA applauds the Obama Administration and EPA for recognizing the challenging economic conditions that industry and all levels of government — federal, state, and local — now face. There is clearly a need for a new paradigm and NACWA is hopeful that EPA's regulatory review effort will not prove to be merely a perfunctory exercise. Carried out seriously and quickly, this effort can mark a significant shift toward a renewed commitment on the part of federal regulatory agencies, like EPA, to become partners with the entities they regulate.

NACWA believes that this shift must have as its foundation stones sound science, affordability, cost, public participation, municipal flexibility, and environmental benefit. These foundation stones must also be a part of an analysis that is applied not only to each policy singly, which are discussed in some detail below, but to the inter-relationship among policies and to the need for prioritization of environmental compliance efforts so that the regulated entities are not left in a situation where they are simply unable to comply. NACWA uses the word "policy" throughout this document because of the strongly held belief that in order for this review process to be a serious one it must be applied not only to rulemakings as defined by the Agency but to the array of policies that essentially serve as de facto rules under different names, such as "guidance" or "criteria".

A number of NACWA member agencies have submitted their own comments to EPA on this effort. The Association urges EPA to review these diligently and to use them as a starting point for a meaningful conversation between EPA and the wastewater

treatment community on the need for a new approach to EPA's programmatic and enforcement activities. One common theme among these comments is that any effort by EPA to limit the Executive Order's implementation to a strict definition of a rule would be misguided and unacceptable. Too often the Agency uses guidance, a broadened reinterpretation of an existing rule, criteria development, or even the decision not to regulate as a substitute for what is essentially a rulemaking. These policies often lead to requirements that place enormous cost on regulated entities without receiving full public participation, notice and comment as well as other intra- and inter-agency review procedures. To this end, NACWA believes that this review process under Executive Order 13563 must be undertaken in the spirit in which it was conceived – to protect the regulated communities and the ratepayers, households, and industries they serve from unnecessarily burdensome, costly and onerous policies.

With these thoughts in mind, NACWA launched its *Money Matters – Smarter Investment to Advance Clean Water* campaign. This campaign was commenced when public clean water agency leaders became faced with the worst economic downturn since The Great Depression. They were faced with a situation where their revenue was shrinking yet the requirements under the Clean Water Act – from combined and sanitary sewer overflow control, stormwater management, nutrient reduction, biosolids management and incineration, total maximum daily loads (TMDLs), whole effluent toxicity, and others – were adding enormous costs to municipal budget sheets.

In addition to new and ongoing regulatory compliance costs, NACWA's members were also faced with a clean water funding gap in the hundreds of billions of dollars that alone could demand every available ratepayer dollar. Taken together, the Agency's own infrastructure funding gap study and its recent 2008 Clean Watersheds Needs Survey estimate a nearly \$1 trillion need for Clean Water Act funding. Yet EPA – and this includes the policy and enforcement arms – have been largely unable or unwilling to provide municipalities with a prioritization process under which they can determine which regulation or policies should be addressed first. This has led to a situation where everything is a priority while economics and environmental benefit have too often become afterthoughts – a situation that virtually every stakeholder agrees has now become unworkable and which the President's Executive Order was intended to address.

NACWA's *Money Matters* campaign is working to develop recommendations for such a planning process based on maximizing ratepayer dollars and acting on those issues first that will provide the ratepayer with the greatest bang for the buck. This is not an effort to avoid any of the requirements but, instead, seeks to address all of them through scientifically based and economically sound considerations. NACWA has written several issue papers on this topic and incorporates them by reference as attachments to these comments. With EPA as a full partner in this effort, we can better align the hundreds of billions of dollars of clean water investments that cities have been and will be required to make, with the most pressing public health, environmental, and economic needs.

Of course, in addition to the need for a new, more holistic review process, NACWA believes there are several glaring examples of the need for specific policy reviews. In the wet weather context, EPA is failing to provide the flexibility that it built into the combined sewer overflow (CSO) policy. Strict timelines and too-stringent affordability constraints have become a standard in the consent decree and enforcement context in spite of a rule or policy's inherent flexibility.

Sewer Overflow Control, Financial Capability/Affordability and Green Infrastructure

EPA's 1997 CSO guidance on financial capability – and, it should be clear that this is guidance and not an official rule – has been interpreted by EPA to essentially require that utilities increase sewer rates to a point where 2

percent of a community's median household income (MHI) is going toward combined sewer overflow control alone. The same threshold has been applied independently to sanitary sewer overflow (SSO) control and more recently to feasibility assessments for communities that employ peak excess flow treatment. Perhaps no single document has impacted the ratepayer more than this document despite the fact it is simply guidance. With the economic downturn in mind, it is time to review this outdated document. It has been interpreted to allow the federal government to reach unhesitatingly into the ratepayers' pockets and grab 2 percent of their income with little study done on the environmental benefit of such actions or the improvements that could be attained if these dollars were otherwise invested. NACWA wants to work with EPA to remedy this by committing to a full review of the 1997 financial capability guidance and moving toward a holistic Clean Water Act affordability approach.

The Association also calls on EPA to work on policies that clearly enunciate the Agency's support for the flexibility to implement new technologies and approaches, most notably green infrastructure and low impact development, which were not considered at the time of the CSO policy's development. Absent a fresh look at the CSO Policy and its related guidance documents, the policy is not sufficiently relevant in the 21st century.

At the same time, EPA has decided to date not to commit to finalizing a SSO policy. Despite the many challenges in implementing the CSO policy, at least there is a written policy around which there can be a meaningful debate regarding its implementation. In the case of SSOs, EPA's program office has ceded its rulemaking authority — despite enormous work having been already undertaken by the Agency to propose a policy and to address some key sub-issues — leaving municipalities open to costly enforcement interpretations that have drawn a bright line that every SSO is illegal regardless of the costs, environmental benefits, or engineering impossibility of eliminating all SSOs.

Frustratingly, in the absence of a holistic SSO policy, EPA sought instead to advance guidance on the issue of peak excess flow blending for sanitary sewer systems. When EPA was unable to complete a formal notice and comment process and finalize the guidance, the Agency began to implement the guidance, making the case that it was only reinterpreting the existing bypass regulation. The Agency's "reinterpretation," however, has only been touted recently — i.e., it is a new policy entirely — and, if acted on by Regions and states, will cost municipalities billions of dollars.

NACWA urges EPA to begin a new effort that builds on the work it has already done and to begin a new process toward finalizing a holistic SSO policy that addresses peak excess flow treatment. Much has been learned in the past years regarding SSOs and NACWA believes a modern, flexible 21st century policy could protect the environment as well as limited ratepayer dollars.

Nutrients and Water Quality Criteria Development

NACWA also implores EPA to ensure that nutrient criteria development and implementation is driven by sound science and serious consideration to cost-benefit concerns. Science should drive deadlines and not the reverse. In the context of nutrient criteria (and water quality criteria more broadly) EPA's position is that criteria are guidance, not regulations, and do not represent final Agency decisions. However, EPA uses criteria as a standard against which all other criteria are compared and, therefore, state water quality standards must be as stringent, or more stringent, than EPA's criteria. These state standards then serve as the basis for permit limits and TMDLs, both of which have very real consequences for regulated entities. If state standards are to be subject to rejection based on federal criteria, then those criteria should be considered to carry the weight of a

rulemaking. Doing otherwise constitutes another strong example of regulating through guidance and precluding meaningful public participation.

The Association applauds the Agency's efforts to address nutrients on a watershed basis but has, and will continue, to raise significant concerns with the science and modeling underlying both the Chesapeake Bay TMDL and the numeric nutrient criteria promulgated by EPA for Florida. NACWA opposes one-size-fits-all approaches to the complex nutrient control challenge. Through its Nutrient Summit White Paper (attached), the Association has provided a roadmap for future action, relying largely on state-municipal expertise in advancing nutrient control, and looks forward to discussing innovative approaches further with EPA.

Clearly, the costs associated with nutrient control are enormous and well-documented. It is incumbent upon EPA to address all pollution sources in an equitable manner based on each source's contribution, with an increasing focus on nonpoint sources and agriculture in particular, which have not been adequately addressed. NACWA will remain EPA's strongest partner in addressing nonpoint sources of pollution but it is unfair to seek additional controls on point sources where the federal and state governments are unwilling to control the nonpoint sources despite the fact that these controls may be more environmentally, economically and socially beneficial.

Sewage Sludge Incineration/Solid Waste Definition Rules

EPA is not only increasing its regulatory activity with clean water agencies in the water quality arena but also in the air quality arena. NACWA's position on EPA's rulemakings on sewage sludge incinerators (SSIs) and the definition of solid waste has been detailed in our comment efforts and need not be rehashed here. The decisions, however, to regulate sewage sludge as a solid waste and to develop emission standards for SSIs under Clean Air Act Section 129 rather than 112 should be reviewed, especially in light of the important cost considerations that can be explored through regulation under Section 112. Furthermore, the decision to reconsider the rule for industrial boilers but not for municipal incinerators exemplifies EPA's untenable view that regulated industry must be treated with greater diligence and economic sensitivity than regulated municipalities — a fallacy in terms of the enormous economic consequences to every household and industry of costly municipal regulations. The cost to municipalities must be passed on to the homeowner and the industrial user — a fact that often appears lost on EPA.

NACWA urges EPA to reconsider the SSI and definition of solid waste rules. This is clearly within the purview of the Executive Order and would demonstrate the Agency's commitment to treating its regulated entities — whether industrial or municipal — similarly.

Use Attainability Analyses and Clean Water Act Objectives

EPA should make every effort to support designated uses that best reflect the population, industrial and agricultural growth of the country since passage of the Clean Water Act in 1972. Doing so would demand a new approach to assessing the attainability of water quality standards, or at the very least, better utilization of the existing regulatory provisions governing use attainability analyses (UAAs). NACWA agrees that waterbodies should be designated for the highest-attainable use, but disagrees with EPA's apparent presumption that every waterbody, even those that are generally unsafe for recreational activities, can attain the Act's "fishable and swimmable" goals. Clear and reasonable UAA guidelines are needed. States should more regularly assess waterbodies to determine what uses are actually attainable using more realistic guidelines, and TMDLs and

permit limits should then be set to meet these reality-based, attainable standards. This would also set the stage for a more sound approach to determining the validity of upcoming regulations and ensuring the greatest value for each dollar spent toward attaining these uses.

Upcoming Regulations and the Need for a Holistic Regulatory Approach

In light of the multiplicity of existing regulatory requirements discussed above, NACWA will be working to ensure that upcoming regulations — especially where additional federal funding is unlikely to be available to share these costs — are based on scientifically and economically sound data. NACWA's top concern is the upcoming stormwater rule, which could place unprecedented new costs and responsibilities on an already overburdened municipal rate base. As EPA targets this Fall for the rule's proposal, the Association urges the Agency to continue to work closely with its municipal partners in crafting the proposal — the stakes are high and nothing can be more important.

Similarly, any efforts on emerging issues such as climate change policy, mercury in dental amalgam, and pharmaceuticals/contaminants of emerging concern, among other issues, must be looked at not just through an individual regulatory lens but in holistic terms with a careful eye toward their cumulative consequences to the ratepayer and the environment.

As EPA noted in its recent *Coming Together for Clean Water Report*:

Despite many successes over recent years, the rate at which waters are being listed for impairment exceeds the rate at which they are being restored. The causes of degradation are in many cases far more complex, and not as visible to the naked eye as they were years ago; the solutions are often available technically, but because the pollution comes from multiple sources, and involves a greater array of pollutants and stressors, it requires new and innovative partnerships and approaches. In some cases EPA and state authorities are limited in scope, and as a result it is challenging to directly address root causes—i.e., population growth, increased urbanization and nonpoint source pollution.

Building strong and effective partnerships with the widest range of stakeholders, state, local, and tribal partners, and other federal agencies has never been so urgent if we are to protect our water and its multiple uses for generations to come.

NACWA looks forward to being one of these effective partners. As this process unfolds, it is more important than at any previous time to keep in mind that every dollar spent to address new requirements has to come from somewhere and means less investment in addressing existing regulations and/or reinvestment in aging infrastructure. Money matters more today to the homeowner and the industrial ratepayer than at any time in the past. It should matter just as much to EPA.

Furthermore, EPA got it right in its *Coming Together for Clean Water Report* where it said that the Agency must “implement policies and help direct attention toward more sustainable water management practices that better integrate water quantity, quality, energy requirements, carbon emissions, development, and land use at the watershed and aquifer levels.” Over the past decades public clean water agencies have grown increasingly sophisticated and are putting into practice resource recovery and sustainable management practices. NACWA believes that as EPA takes a more sophisticated approach to integrating its environmental policies, balancing new

NACWA Comments on EPA Implementation of Executive Order 13563

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requirements with carbon footprint considerations, and developing innovative tools to strengthen its watershed-based efforts, both water quality and air quality can make tremendous additional gains.

NACWA appreciates this opportunity to comment and looks forward to working with the Agency to develop a sound approach to meaningfully prioritizing Clean Water Act requirements and to ensuring that the suite of existing regulations maximizes environmental benefit for the Nation's communities.

Sincerely

A handwritten signature in black ink, appearing to read "K Kirk". The signature is stylized with a large "K" and a cursive "Kirk".

Ken Kirk
Executive Director

Attachments

THE MESSAGE IS **CLEAR...**



MoneyMatters™

Smarter Investment to Advance Clean Water

The current economic conditions are spurring an era of smarter investment. This is especially true for municipalities focused on maximizing water quality gains for their communities despite the often competing and shifting regulatory and enforcement priorities of the Clean Water Act.

The need for a sound approach to prioritizing clean and safe water investment is more palpable and compelling to local, state and national policymakers than at any time in several decades. The door is open wider than at any point in the past to solutions that would ensure municipalities have the flexibility they need to invest precious ratepayer and community dollars into effective projects and programs that protect public health and safety.

All water utilities work within budgets that are funded by user fees or tax assessments. Like the customers they serve, public utilities have to prioritize resources to assure that the most important things are addressed first. Almost all expenditures are judged by the value provided, just like the everyday budgets of the households and businesses they serve. Municipalities invest more money in clean and safe water than any other budget item with the exception of education — nearly \$80 billion per year. This number is only expected to rise — along with increased accountability for results.

One of the primary drivers for increased public utility expenditures is environmental regulation. U.S. utilities will be required to spend hundreds of billions of dollars in the coming decades addressing wet weather concerns, nutrient issues, biosolids management, and water quality standards — notwithstanding reinvesting in their existing systems and infrastructure. Many other challenges loom on the immediate horizon from emerging contaminants to climate change. And, of course, there will be other costly requirements that have not yet been identified or contemplated.

Municipalities throughout the country continue to invest in their systems but face a regulatory landscape where everything is a priority and economics are an afterthought. If local public utilities cannot partner with states and the federal government to determine how best to squeeze maximum water quality benefit out of every dollar, then the next generation of water quality improvements will continue to elude us. We must not let this happen!

(See reverse for the Money Matters — The Solution Is Within Our Reach)

THE SOLUTION IS **WITHIN OUR REACH...**



MoneyMatters™

Smarter Investment to Advance Clean Water

Money Matters is about providing clean water to our communities at the best value. It's about investing available resources to maintain existing infrastructure and solve priority water quality problems first. To do these things, local, state, and federal leaders must work in partnership to:

» **Pursue a watershed-based approach to solve water quality challenges**

The Clean Water Act of 1972 must be updated to include controls on all sources of water pollution and to consider the overall health of the watershed on a chemical, biological and physical basis. This will allow top priority problems to be addressed first and for each dollar to be targeted to projects that will maximize benefit. Forty years after the passage of the Clean Water Act nearly 40% of our assessed waters remain impaired – only a new approach can address this remaining challenge.

» **Recommit to new technology and pioneering innovation**

Innovative and green technologies that are often more cost-efficient must be accommodated as municipalities address water quality compliance. Municipalities and states must be encouraged, not deterred, from implementing innovative strategies, techniques, and technologies and to carefully monitor and assess their effectiveness.

» **Entrust local experts and leaders to use limited dollars to maximize community benefit**

Rigid federal and state regulatory structures must be reviewed holistically to allow local clean water experts the flexibility to manage Clean Water Act requirements in a manner that protects public health and safety and can adapt to shifting problems and priorities. This will lead to decisions that bring greater immediate and long-term water quality and economic improvements to our communities.

» **Develop a rational, integrated approach to assessing community affordability**

The U.S. Environmental Protection Agency's (EPA) affordability approach affects every household in every community. As an immediate step, EPA should conduct a complete and thorough update of its affordability criteria under the Clean Water Act, with significant stakeholder input. It has not done so since 1997 when the regulatory, enforcement and economic landscape was vastly different from today.

We must move forward to ensure smarter investment to advance clean water because...Money Matters.



Money Matters is an initiative of the National Association of Clean Water Agencies (NACWA). NACWA members are committed to pursuing responsible national policies that advance clean water and create a healthy balance between investment and environmental benefit.

Visit us on the web at www.nacwa.org/moneymatters or contact us at info@nacwa.org

Money Matters — Smarter Investment to Advance Clean Water

Public Agency Case Studies

The current economic conditions are spurring an era of smarter investment. This is especially true for municipalities focused on maximizing water quality gains for their communities despite the often competing and shifting regulatory and enforcement priorities of the Clean Water Act.

One of the primary drivers for increased public utility expenditures is environmental regulation. U.S. utilities will be required to spend hundreds of billions of dollars in the coming decades addressing wet weather concerns, nutrient issues, biosolids management, and water quality standards — notwithstanding reinvesting in their existing systems and infrastructure. Many other challenges loom on the immediate horizon from emerging contaminants to climate change. And, of course, there will be other costly requirements that have not yet been identified or contemplated.

Municipalities throughout the country continue to invest in their systems but face a regulatory landscape where everything is a priority and economics are an afterthought. If local public utilities cannot partner with states and the federal government to determine how best to squeeze maximum water quality benefit out of every dollar, then the next generation of water quality improvements will continue to elude us. We must not let this happen!

Money Matters is about providing clean water to our communities at the best value. It's about investing available resources to maintain existing infrastructure and solve priority water quality problems first. To do these things, local, state, and federal leaders must work in partnership to:

- 1) pursue a watershed approach to solve water quality challenges;
- 2) recommit to new technology and pioneering innovation;
- 3) entrust local experts and leaders to use limited dollars to maximize community benefit; and
- 4) develop a rational integrated approach to assessing community affordability.

This case study document provides key examples of municipal agencies' challenges with Clean Water Act financing and some of the innovative efforts they are undertaking to address them. Visit [NACWA's Money Matters website](#) for additional information.

Akron, Ohio – Public Utilities Bureau

RISING COSTS

25% increase in 2010 rates alone

OUTDATED & OVERBURDENED

System designed in 1916 to serve 85,000 now serving 350,000

Background Information:

Over the past four decades – since the polluted Cuyahoga River caught fire in 1969, enormous progress has been made by federal, state, and local governments in the cleanup of our nation's waterways. Despite these efforts, in February 2009, the Department of Justice (DOJ) sued the City of Akron under the Clean Water Act for pollution into the Cuyahoga River, the Little Cuyahoga, the Ohio Canal and their tributaries. The lawsuit was brought to limit the discharge of combined sewer overflows (CSOs) and sewage backups into private homes and property. As part of a settlement, the city agreed to a consent decree, including paying a \$500,000 civil penalty and funding a \$900,000 supplemental environmental project. The city negotiated the consent decree to reduce or eliminate sewer overflows and bypasses around secondary treatment facilities in 900 miles of sewer pipe and a wastewater treatment facility. The cost of the consent decree is estimated at well over \$500 million and all projects must be completed by October 15, 2028 (a 19 year compliance period).

How Akron is Helping:

- Completed an extensive analysis to identify effective solutions to improve water quality.
- Expanding secondary treatment capacity at its wastewater treatment plant over the next six years to allow for treatment of an additional 20 million gallons of wastewater per day during wet weather.
- Constructing separate sewer lines for five combined sewer outfall areas over the next eight years
- Executing comprehensive capacity, maintenance and emergency response programs to improve sewer system performance and to eliminate releases from the sewer collection system.

Financial Impact:

1. MUNICIPAL/UTILITY BUDGET

Compliance with the consent decree has resulted in, and will continue to result in, severe financial impacts on the city, including:

- A dearth of cash-on-hand, and increasing debt
- An inability to prepare for further economic uncertainty or recession
- The reality that cash capital will not likely be available until 2012
- Lack of resources for unrelated maintenance, investment, and improvement projects that could have greater impact on water quality
- Diverted fees from planned improvement projects to pay the DOJ-required civil penalty of \$500,000.
- An additional \$900,000 of cash payments to fund the settlement-mandated supplemental environmental project, further reducing available resources for critical capital investments.

2. RATEPAYERS/COMMUNITIES

The cost of the consent decree places financial burdens on the 350,000 people the Akron wastewater treatment program serves, resulting in:

- A four-year rate increase plan that began with a sharp 25% increase for 2010, followed by slightly lower increases over the next three years. Even with the 25% rate increase in 2010, year to date revenues are only 10% more as compared to 2009.
- A \$26 to \$51 jump in the typical residential monthly bill between 2009 and 2014.
- A possible 500% increase in rates for many residents over the life of the consent decree to implement the consent decree requirements.



Atlanta, Georgia – Department of Watershed Management

RIISING COSTS

Rates expected to jump 300% from 2003-2010

ECONOMIC REALITY

10% unemployment, 24% of all residents at or below poverty line

BUDGET CRISIS

43% of annual budget used to service compliance debt burden

Background Information:

The City of Atlanta, Georgia has taken on many projects to update the city's clean water infrastructure in response to a combined sewer overflow (CSO) and sanitary sewer overflow (SSO) consent decree between the city and EPA. These projects have substantially decreased sewer leaks, but have come at a great cost to the municipality. The total compliance cost for the entire sewer improvement program is estimated at \$3 billion, and the cost for the CSO plan is \$950 million.

How Atlanta is Helping:

- Rehabilitated 339 miles of sewer pipe with plans to rehabilitate another 182 miles by 2013
- Completed twelve sewer capacity relief projects with two others currently underway
- Decreased sewage spill volume by 97% since 2004.

Financial Impact:

1. MUNICIPAL/UTILITY BUDGET

The infrastructure improvements required Atlanta to incur significant debt and take additional measures to ensure its ability to meet requirements and other responsibilities, including:

- A bond of \$849 million in September 2004 and another of \$750 million in June 2009, both issued by the Department of Watershed Management.
- A request for a Financial Capability Based Scheduled Extension with EPA, prompted by Fitch Rating Service's conclusion that without schedule relief from EPA, the system would be unable to meet operating costs.
- A current debt of \$3.2 billion, which requires \$225 million each year (or 43% of its annual budget) to service its financial obligations.

2. RATEPAYERS/COMMUNITIES

Dire financial pressure is being felt by communities across the country, and nowhere is that truer than in Atlanta, where residents pay the highest amount for sewer services in the country. Rates there:

- Exceed EPA's maximum rate of 2% of Median Household Income (MHI) and are projected to increase to 2.6% by 2011
- Are expected to jump to a household average of \$150 per month by 2012, marking a 300% increase from 2003
- Are the responsibility of a population currently experiencing a 10% unemployment rate, with 24% of all residents at or below the poverty line

Atlanta's case has also made it clear that rate increases do not yield an equal revenue return. In other words, a 10% rate increase does not result in a 10% revenue increase, making it even more difficult to meet existing consent requirements coupled with the demands of new regulatory. This is because as rates rise, conservation also rises, especially in periods of drought as Atlanta has recently experienced.



St. Louis, Missouri - Metropolitan St. Louis Sewer District

OUTDATED & OVERBURDENED

Sewer pipelines are 100 years old

ECONOMIC REALITY

9.2% unemployment, 13.2% of population below poverty line

Background Information:

St. Louis, like many older cities, has sewer pipelines that are over 100 years old. With aging infrastructure, the district must spend precious financial resources on updating this infrastructure to comply with current EPA regulations. As part of EPA's campaign to improve the Mississippi River's water quality, the agency is demanding that the Metropolitan Sewerage District of St. Louis must drastically reduce the number of sewer overflows in the city. The new EPA requirements will cost the district an additional \$1.9 billion over and above the \$4 billion the district is already spending on reducing sewer overflows.

How St. Louis is Helping:

- Implementing Best Management Practices (BMPs) designed to reduce pollution into waterways thereby reducing the amount of combined sewer overflows (CSOs) which currently costs the district \$5.9 billion.
- Cleaning an average of 15 million feet of sewer pipes every 18 months, decreasing the number of basement backups and claims.
- Completing 70 infrastructure projects in fiscal year 2010, with a total cost of \$126,642,000 and will complete 103 infrastructure projects in the next two years costing \$359,006,600.

Financial Impact:

1. MUNICIPAL/UTILITY BUDGET

St. Louis has turned to debt financing to avoid increasing sewer bills. Although the use of debt is a convenient way to keep rates lower, it comes at a significant cost. The sewer district will have to deal with long-term debt service costs because of this practice.

2. RATEPAYERS/COMMUNITIES

The City of St. Louis has an unemployment rate of 9.2%, and 13.2% of its population is below the poverty line. The district attempts to create relief with a lifeline rate but has little resident participation. Additionally, the district offers its low income residents a 65% discount, but some residents do not even pay the reduced fee, and the district cannot stop services to residents who do not pay. The district will propose increasing rates this winter to finance infrastructure and storm drain improvements.



Washington, D.C. – DC Water, Blue Plains

RISING COSTS

A 40% rate increase over 4 years for District residents

ECONOMIC REALITY

2 out of 3 District residents live at or below the federal poverty line. One fifth of all employed DC residents make less than \$11.00 an hour

BUDGET CRISIS

15 years ago there was a 75% Federal investment in water infrastructure, today it is less than 5%

Background Information:

The District is engaged in a two-decade-long, \$2.6 billion project — the Long-Term Control Plan also known as the DC Water Clean Rivers Project — to significantly reduce discharges from the District's combined sewer system and to thereby improve receiving water quality in the Anacostia River, Rock Creek, and Potomac River. The DC Water Clean Rivers Project will address needed improvements to a combined sewer system that was designed and constructed by the United States Army Corps of Engineers over 100 years ago on behalf of the federal government. Implementation of the project will also greatly improve the health of the Chesapeake Bay, in accordance with goals established by the United States Environmental Protection Agency's ("EPA") Chesapeake Bay Program.

One major element of the DC Water Clean Rivers Project will dramatically reduce the volume and frequency of overflows to the Anacostia River by diverting combined sewer flows occurring during wet weather events into a deep tunnel system (23' inside diameter at over 100' deep, 13 miles long with 17 drop shafts). This system will have the capacity to capture and store up to 157 million gallons of combined sewage that would otherwise be discharged directly to the Anacostia River during wet weather events. The captured flow will then be conveyed through the tunnels for treatment at DC Water's Blue Plains treatment facility. The tunnel project is projected to reduce annual average combined sewer overflow discharge by approximately 1.8 billion gallons- a 96% overall reduction in CSO volume in the Potomac, Rock Creek and Anacostia rivers.

How the DC Water is Helping:

- DC Water recently completed nearly \$170 million in improvements to pumping stations and inflatable dams as part of the overflow reduction program. These projects have already reduced CSOs by 40%.
- DC Water was the only entity to achieve the 2010 voluntary clean-up goals for Chesapeake Bay nitrogen removal.
- DC Water has direct connections to training programs in the city's high schools as well as the University of the District of Columbia.
- DC Water is researching and experimenting with new comprehensive low impact development (LID) strategies that would abstract pollutants.

Financial Impact:

1. MUNICIPAL/UTILITY BUDGET

- DC Water has a \$3.8 billion capital campaign for the next 10 years. Half of that is dictated by Federal mandates.
- Working on drastically reducing combined sewage overflows (CSOs) at a cost to residents of approximately \$2.6 billion.
- Also working diligently to achieve by 2015 mandatory requirements for the Chesapeake Bay costing the same residents and wholesale customers nearly \$900 million.
- Replacement rate for aging infrastructure pipes is 1% per year. This is twice the national average. This will take literally 100 years to accomplish. In order to do so, the average monthly water bill

was increased again on September 1, 2010 from \$51 to \$61. Rates have gone up 30 to 40 percent over the last 3 or 4 years to cover all unfunded mandates.

2. RATEPAYER/COMMUNITIES

- In the District, where some entire neighborhoods have unemployment rates approaching 40 percent, ratepayers have been asked to shoulder a 9.5% rate increase last year, a proposed 12.5% rate increase this year (2010), and a projected 8.5% rate increase over the next two years. Together, that is about 40% over four years.
- Based on EPA's most recent Clean Watersheds Needs Survey, the District of Columbia is again at the top of per-capita needs at \$4,315 per person.
- The average residential single-family bill in Washington, DC in 5 years will be over \$100 per month.
- Local ratepayers are now paying the bill for infrastructure installed by the federal government generations ago.



Los Angeles, California - Bureau of Sanitation

ECONOMIC REALITY

12.4% unemployment, 19% of all residents at or below poverty line

REDUCED REVENUES

Mandatory water conservation has reduced revenues by 5%.

DEBT BURDEN

\$180M of annual budget used to service debt

Background Information:

The City of Los Angeles, California is in the seventh year of a ten-year Collection System Settlement Agreement (CSSA) intended to reduce sewer overflows. While there have been many positive results from this program, it has resulted in reduced investment in other parts of the wastewater system. The City is faced with increased water quality regulations accompanied with an aging infrastructure. Seventy percent of the City sewer system is 50 years or older. Our treatment facilities and pump station are approaching 20 years in age which is requiring routine upgrade and replacements. Although water conservation has helped reduce water and wastewater flows, our revenue continues to decline due to reduced water usage, increased foreclosures and increase in low income households and delinquencies.

How Los Angeles is Helping:

- Assessing an average of more than 600 miles of sewer each year and cleaning an average of more than 65,000 pipe reaches annually
- Rehabilitating an average of 60 miles of sewers each year
- Decreased annual number of sewer spills by 80% since 2001
- Enhancing operational performance and reducing operational costs. The staffing for the Bureau will reach 1273 in FY 2011/2012 which is an all time record low and 28 percent lower than our staffing in the early nineties. This is in spite of increased programs and activities.
- Implemented watershed and integrated planning that includes water, wastewater, and stormwater.

Financial Impact:

1. MUNICIPAL/UTILITY BUDGET

When Los Angeles entered into the CSSA, a 5-year series of rate increases were enacted. At the time, the expectation was that a second 5-year series of increases would be needed in order to complete the program. However, no increases were requested in 2009 or 2010 due to economic conditions. At the same time, the wastewater program is experiencing a reduction in revenues due to mandatory water conservation, creating the following impacts:

- Reduction of the cash balances required to maintain good bond ratings and be prepared for economic uncertainties
- Reduction in pay-as-you-go cash funding for the capital improvement program
- Deferral of capital projects to future years at a time when the program should be taking advantage of low construction bids
- A current debt of \$2.7 billion, which requires \$180 million each year (or 25% of the annual budget) to service

2. RATEPAYERS/COMMUNITIES

While Los Angeles has a strong environmental community that is supportive of the improvements to the wastewater system, many of the system stakeholders are focused on financial issues. Some of the factors that may make it difficult to get approval for additional rate increases are:

- Rate increases totaling 40% between 2005 and 2008.

- A 23% increase in the number of customers receiving low income rates between 2009 to 2010
- Competing rate increases for the water and power utility

A belief that once the CSSA is complete, the program can 'relax.' In fact, the rate of sewer renewal will need to be maintained in perpetuity, and investment in the treatment plants will need to increase to compensate for the 10-year focus on the collection system.



Ft. Wright, Kentucky – Sanitation District 1

RISING COSTS

Rates likely to rise 900% over 25 years

In 2011, SD1's debt services payments will exceed its operating and management budget

**By using a watershed management approach, SD1 will save over \$2 billion
Innovative management practices have decreased sewage leaks from 40 to 1 million gallons a year**

Background Information:

On April 18, 2007, Sanitation District 1 of Northern Kentucky finalized a consent decree with the U.S. EPA and the Kentucky Energy and Environment Cabinet. The consent decree requires that SD1 address combined sewer overflows (CSOs) and sanitary sewer overflows (SSOs) that pollute the Ohio River, Licking River, Banklick Creek, and Taylor Creek. SD1 provides wastewater utility services for three county governments, 30 cities, and 110,000 customers.

How Sanitation District 1 is Helping:

Instead of a traditional grey infrastructure plan, SD1 decided on a watershed management approach to reduce or eliminate sewer overflows. The watershed management approach incorporates the following actions:

- Recognizes other pollutant sources and their relative impacts and puts CSOs and SSOs into context with those sources
- Provides a process to address and control highest regional priorities first to offset controls on CSOs;
- Uses an integrated approach of controls that will address both wet and dry weather sources of pollution and lead to a greater improvement in water quality and public health;
- Provides additional benefits to the community such as air quality, wildlife habitat, urban beautification, and economic development; and
- Directs funds to projects that provide the greatest benefits.

As a result of the watershed management approach, complying with the consent decree will only cost \$1.2 billion as opposed to a normal approach costing around \$3.2 billion. The projects under the consent decree must be completed before December 31, 2025.

In addition to this approach, SD1 is currently implementing the following improvements:

- Building a new wastewater treatment plant
- Constructing a six mile long, 8.5 ft in diameter tunnel that will transport sewage and store wastewater until it can be treated in order to reduce or eliminate sewer overflows.
- Planting rain gardens and restoring natural habitat that absorbs water and limits storm water runoff will be completed under the green infrastructure component of the consent decree

Financial Impact:

1. MUNICIPAL/UTILITY BUDGET

In 2011, SD1's debt services payments will exceed its operating and management budget.

Positive: SD1 operates on a \$140 million capital budget, an O&M budget of \$29 million, and a debt services payment of \$27 million each year, which will exceed the O&M budget next year. Although updates to wastewater treatment systems are costly, the district will save about \$2.1 billion by using the watershed management approach. An example of this cost-effective practice is the Banklick Creek Wetland project that cost under a million dollars and will contribute to cleaner water quality during

both wet and dry weather. In addition, by making operational changes and diverting sewer flow away from the Lakeview Pump Station, sewage leaks decreased from 40 million gallons annually to only 1 million gallons each year.

2. RATEPAYERS/COMMUNITIES

Although, the watershed approach is very cost-effective, rate-payers still must deal with rate increases. In 2000 the average monthly bill was \$10.32, and in 2025, the average monthly rate is predicted to be \$95.09. In response to these rate increases, the highest percentage of voters ever recorded voiced their opinion and voted against many local incumbent officials that approved the rate increases. In response to the public concern, Kentucky's legislature passed HB 504, which requires a close scrutiny of new requirements based on a community's financial capability. Other components of the bill are also aimed at creating a more cost-effective and sustainable system.



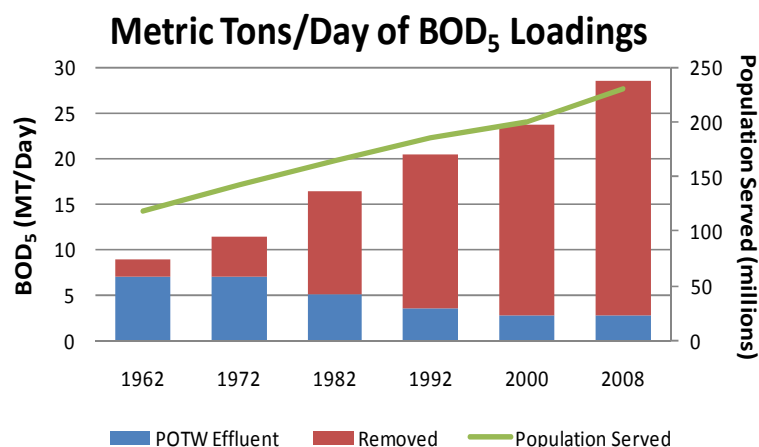


Two Sides of the Same Coin: Increased Investment & Regulatory Prioritization

In the 1972 Clean Water Act, America committed to a national goal of fishable and swimmable waters. To back this objective, the U.S. Congress established an intergovernmental partnership to pay for needed clean water infrastructure. For twenty years, federal and local governments invested heavily in treatment and conveyance works and the quality of our waters improved dramatically. Over the last 20 years, however, this trend has reversed. The federal government has largely withdrawn from directly funding clean water infrastructure. At the same time, pollution from nonpoint sources, like urban and agricultural runoff, has escalated degradation of water quality in America's lakes, rivers, estuaries, and coastal waters. We can support the national priority for clean water, but it will take smart investments, flexible approaches, and a renewed intergovernmental partnership to get there.

Clean Water Act Investments and Resulting Achievements – A Historical Perspective

America's clean water achievements have been remarkable since the 1972 federal Clean Water Act set clear national objectives: achieve clean water across the nation and, as means to do so, provide federal financial assistance to construct publicly owned wastewater treatment works. Despite multiple major and minor amendments over nearly 40 years, these objectives still drive America's clean water program. Over the last four decades, the nation has invested some \$600 billion¹ to build, repair, and replace wastewater infrastructure, preventing nearly 30,000 tons of organic pollutants a day from reaching America's waters, a figure that has steadily increased over the years along with significant growth in the number of people served by America's wastewater utilities.



Compared to conditions in the 1970s, water quality today is better across the board. In many places, improvements have been dramatic — fish have returned to once toxic rivers, diverse aquatic life now thrives in many of the nation's bays and estuaries, and thousands of miles of beaches are enjoyed each summer free of harmful bacteria.

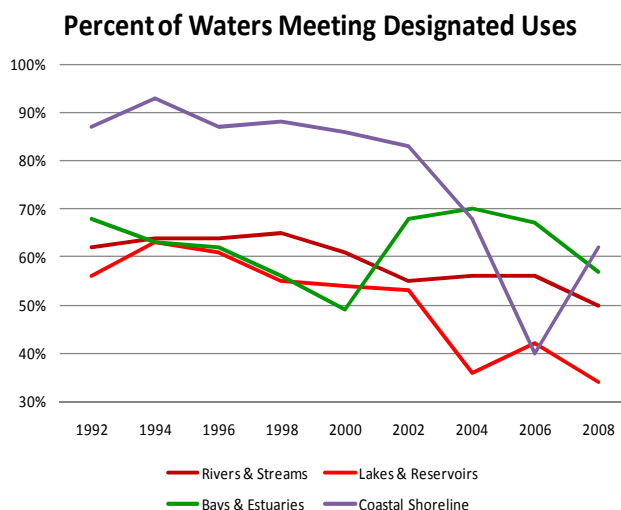
In addition to these ecological benefits, America has enjoyed a wide range of economic benefits attributable to cleaner water. Every day, Americans rely on clean water for drinking, recreation, commercial fishing, and a wide range of industrial activity. These economic activities generate billions of dollars in income every year, none of which would be possible without the clean water resource base on which they rely. Adequate capacity to safely manage wastewaters is key to industrial production, public health and safety, and the general welfare of communities. The very existence of clean natural ecosystems increases the economic value of adjacent lands and nearby development, which in turn stimulates additional investments, enhances local tax bases, and

¹ US Congressional Budget Office, *Public Spending on Transportation and Water Infrastructure*, November 2010. All figures expressed in 2010 dollars, unless noted otherwise.

creates jobs.² Moreover, nearly 40 years of clean water experience have transformed some 15,000 local wastewater utilities into sophisticated resource management organizations.

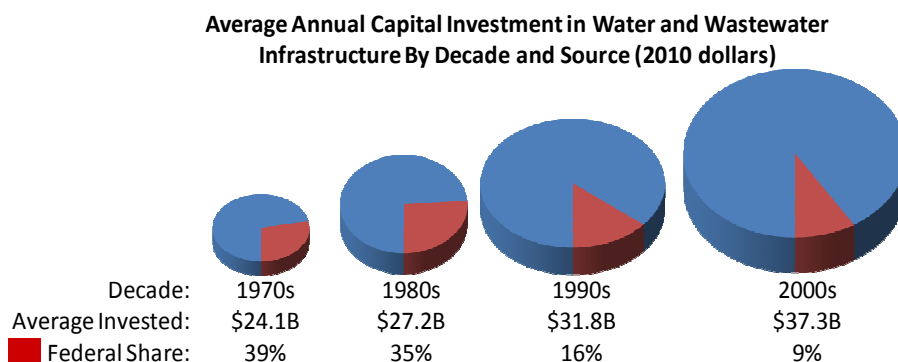
The Reversal of the Trend toward Cleaner Water. . . Why Now?

These achievements may seem impressive in the aggregate; however, a closer examination of trends tells a very different story. Dramatic improvements in water quality in the 1970s and 1980s began to reverse in the 1990s and have continued to decline through 2008, the most recent data available. Lake water quality has declined dramatically, for example, from 63% meeting designated uses such as recreation and drinking water in the early 1990s to just 34% meeting these same uses today. The percentage of our shoreline meeting fishable and swimmable standards has declined from more than 90 % in the early 1990s to just 60 % today. Estuarine water quality has fluctuated, but today, just 57% of these waters are clean enough to support aquatic life, compared to nearly 70% in the early 1990s. In the mid 1990s, 65% of America's rivers and streams were clean enough to meet their designated uses for drinking water, recreation, and fisheries. Today, that figure has fallen to just 50%.



Why is water quality on the decline? First, costs in the first 20 years of a new national program to reduce loadings from point sources were significantly lower than costs in the second 20 years. In essence, between 1972 and the early 1990s, we harvested the relatively low hanging fruit — installation of secondary treatment in place of no treatment or just primary treatment. Removing the next increment of pollutants, the target of the 1990s and 2000s, by increasing treatment levels to advanced secondary or tertiary treatment was orders of magnitude more expensive. The cost of removing target pollutants like nutrients and reducing wet weather flows in general over the next 20 years will be more expensive still.

Second, the funding for clean water programs has shifted dramatically over this period, from an intergovernmental approach in the 1970s and 1980s to a largely local, user-financed approach thereafter.



²Clean water supports a \$50 billion a year water-based recreation industry, at least \$300 billion a year in coastal tourism, a \$45 billion annual commercial fishing and shell fishing industry, and hundreds of billions of dollars a year in basic manufacturing that relies on clean water. Clean rivers, lakes, and coastlines attract investment in local communities and increase land values on or near the water, which in turn, create jobs, add incremental tax base, and increase income and property tax revenue to local, state, and the federal government. For a summary discussion of the monetary values of these economic benefits of clean water see: Water Infrastructure Network, *Clean and Safe Water for the 21st Century*.

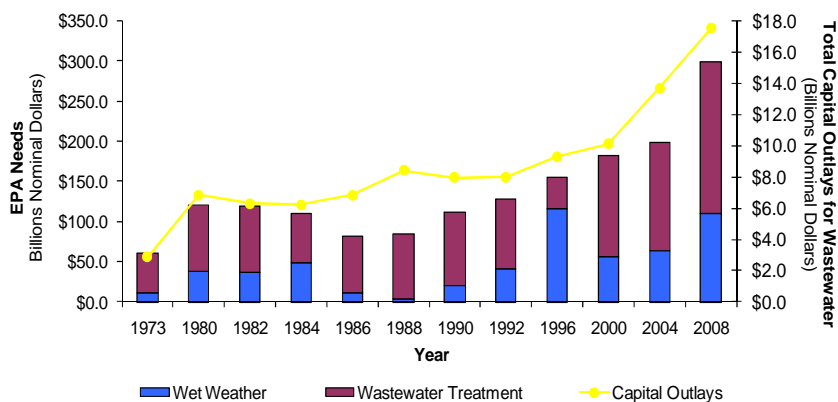
According to the U.S. Congressional Budget Office, the federal share of total public capital investment in water and wastewater infrastructure peaked in the 1970s at an average of 39% (63% in 1977) and has declined since, falling to just 9% on average in the 2000s (6% in 2010).³ The federal share of total investment, including capital, operations, and maintenance (O&M) fell to less than 3% by 2010. Also, it is important to note that O&M as a percentage of total investment increased from 44% in 1972 to 65% in 2010. As a result of mounting pressures to meet annual operating budgets, which are especially heightened in times of recession, local investment priorities shift to meeting immediate customer and regulatory demands, which can crowd out funding for longer-term environmental advancements. At the same time, the infrastructure that was the subject of federal investment during the initial phase of implementing the Clean Water Act has declined and is reaching the end of its useful life.

Third, there is strong scientific evidence that continued focus on point sources to achieve water quality gains was ineffective as of the late 1990s. According to biennial surveys conducted by the states, municipal wastewater and urban stormwater have declined steadily as sources of impairment over the last two decades. Runoff from agriculture and airborne deposition of pollutants are the main causes of remaining water quality impairment in rivers, streams, lakes, and ponds.

Can We Achieve National Clean Water Goals? The Role of Regulatory Prioritization & New Approaches to Clean Water Act Implementation

What we know is this: the quality of America's waters improved significantly when the federal government played a strong role in funding investments in clean water. We also know that America's wastewater utilities have removed the vast majority of conventional pollutants from municipal wastewater and, looking forward, face significantly higher costs to remove the next increment plus control pollutants from urban runoff. Further, it is clear that states, local communities, and individual households face intense pressure to make ends meet. Finally, the reality is that despite hundreds of billions of dollars already invested in municipal wastewater infrastructure, future investments will be even greater.

Consider this historical trend: both the U.S. Environmental Protection Agency's (EPA) estimate of future wastewater infrastructure needs to meet Clean Water Act goals and investments to meet these needs over the same period have grown steadily since 1973. We as a nation are spending too little, we are too narrowly focused on point sources, and the rate of new regulations and requirements are expanding investment needs faster than our ability to meet them.



³ US Congressional Budget Office, *Public Spending on Transportation and Water Infrastructure*, November 2010.

So what are the options? Clearly over the long-run, we must find ways to do more with less. This means some combination of:

Maximizing water quality returns for every dollar invested by making science-based water quality investment decisions on a watershed basis in order of greatest water quality gains per dollar invested, while maintaining the improvements and progress made to date. Instead of driving America's wastewater utilities further out the unit removal curve where the cost of the next unit of pollutants removed is very high, we should focus our resources on pollution sources for which very little has been done to date, costs are substantially lower, and water quality gains much greater.

Reducing unit costs through rapid introduction of new technology and innovative management practices. After 40 years of experience, today's wastewater utilities have transformed themselves into sophisticated resource management organizations. Opportunities exist in such areas as energy management, resource and materials recovery, and reuse of reclaimed water. Some of these initiatives may require reorientation of infrastructure, which will be costly in the short run, but yield savings for decades. Others will require new technology and regulations that encourage pilot applications.

Allowing flexibility in local decisions including regulatory processes and timelines would enable wastewater utilities to explore the first two options. In many watersheds, reducing loadings from nonpoint sources like agriculture, as well as point sources, would result in much greater water quality gains.

Taken together, these three approaches could help reverse water quality declines and ease costs for local communities to deliver them over the next decade or more. Also, such an approach could reduce future investment needs by more than 20%. Such a move is vital and is at the core of the *Money Matters* campaign. But these options alone will still be insufficient to meet Clean Water Act goals. The backlog of needs is simply too high given aging infrastructure systems, limited funds, and a large proportion of households already at their financial tipping point.

We simply need to invest more now.

Restoring Our Successful Intergovernmental Partnership

Today, households and businesses in local communities pay for virtually 100% of the cost of wastewater management with local governments raising 97% of the capital to do so. This approach, however, has been inadequate to meet national clean water priorities. Moreover, the efficiency, equity, and practical aspects of sustainable financing of wastewater infrastructure — achieving our national goal for clean water by meeting environmental and customer service standards — suggest that we must seek solutions beyond paying for these critical national infrastructure systems strictly with local dollars.

Americans have not been asked to apply this local funding strategy to other critical infrastructure networks. Paying for America's highways through strictly local fees, for example, would create tolls only for residents, while travelers passed through freely. Drivers would pay gasoline taxes only at their local pumps, but would enjoy tax-free prices for gas purchased outside their

communities. Paying for airports this way would mean only passengers who were local residents would pay landing fees when they touched down in their city, while international travelers got a discount on their airfares. These basic infrastructure systems underpin the broader U.S. economy. Their benefits accrue widely to users without geographic limitations imposed by local political boundaries — just like the benefits delivered by America’s network of rivers, lakes, streams, and shorelines.

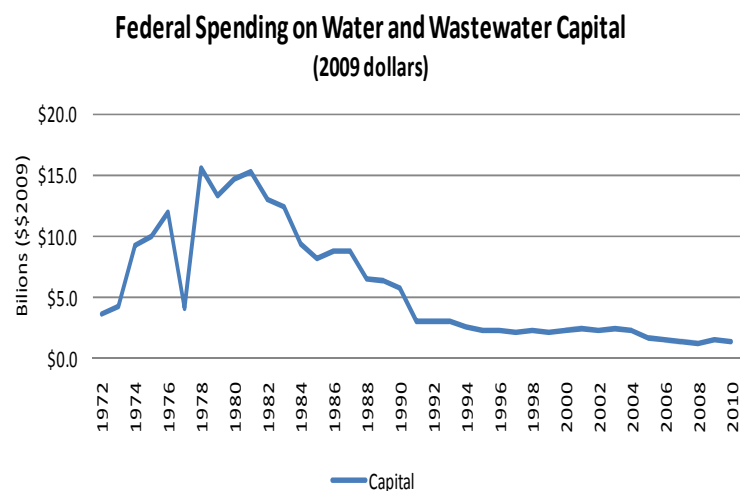
Put simply, on the basis of water quality outcomes, returns on public capital, and environmental equity, the case for federal investment is compelling. Needs are large and growing. In many locations, local sources cannot be expected to meet this challenge alone. Because waters are shared across local and state boundaries, the benefits of federal investment will accrue to the entire nation, while ensuring that no community is environmentally disadvantaged regardless of income level or demographics. Clean water is no less a national priority than are national defense, an adequate system of interstate highways, or a safe and efficient aviation system. These latter infrastructure programs enjoy sustainable, long-term federal grant programs funded through dedicated national revenues. Under current policy, wastewater infrastructure does not.

How Much Must Be Spent to Meet the Clean Water Act’s Goals and Who Should Pay?

Federal clean water appropriations have fallen from about \$6 billion a year at the outset of the State Revolving Fund (SRF) program in 1988 to about \$1 billion a year today. Simply restoring federal funding to its average of about \$3 billion a year since inception would be a first step to restore the intergovernmental partnership that has characterized America’s clean water program for nearly 40 years. But it would not reverse declining water quality broadly.

Moreover, with needs approaching \$300 billion, meeting local customer-driven service levels and making tangible progress toward the nation’s Clean Water Act goals will require significantly greater levels of investment. Also, more realistic water quality standards, innovative technologies and approaches such as green infrastructure and holistic watershed planning are also essential.

A 50% increase in investment in clean water infrastructure would deliver some 200,000 new jobs, more than a comparable investment in schools, transport infrastructure, energy infrastructure, or broad tax cuts.⁴ Moreover, these jobs would be located in many communities with the highest unemployment and fewest prospects for reducing it. As water bodies are restored, both direct and indirect benefits will add value to local economies and national gross domestic product (GDP) through more productive fisheries and shellfisheries; higher rates of water-based recreation with



⁴ For details, see: James Heintz, Robert Pollin, and Heidi Garrett-Peltier, Political Economy Research Institute of the University of Massachusetts, *How Infrastructure Investment Support the US Economy: Employment, Productivity and Growth*, prepared for the Alliance for American Manufacturing, January 2009.

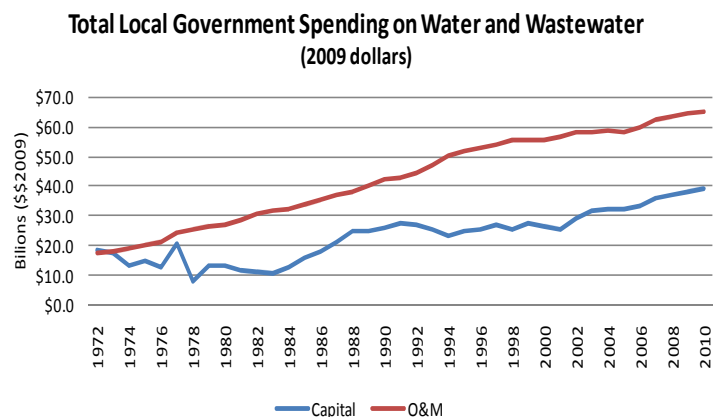
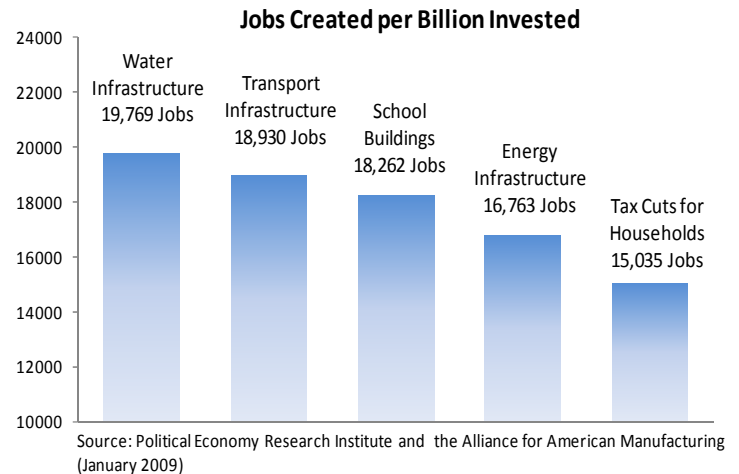
an accompanying stimulus effect of household expenditures needed to support these recreational activities; significantly increased land values adjacent to and near clean bodies of water; and greater output of agriculture, tourism, and basic industries that rely on clean process water or adequate capacity to treat increased wastewater flows as production scales up.

Even with a 50% increase of federal investment, local governments would still be responsible for raising two-thirds of all capital invested. Local sewer rates would still increase at about 3% above inflation on average nationwide, a major driver being Operations & Maintenance (O&M) costs which have risen by this amount each year over many decades. For many communities, the cost of wet weather management programs will add a significant financial burden for many decades.

Consider the findings of the U.S. Treasury and the President's Council of Economic Advisors, who in a recent analysis concluded:

“Many studies have found evidence of large private sector productivity gains from public infrastructure investments, in many cases with higher returns than private capital investment. Research has shown that well designed infrastructure investments can raise economic growth, productivity, and land values, while also providing significant positive spillovers to areas such as economic development, energy efficiency, public health and manufacturing.”⁵

The upside can be dramatic if we get it right. Economists at the University of Massachusetts, for example, found that one percentage point increase in the growth rate of core infrastructure (water, wastewater, energy, and transport) leads to an increase in the growth rate of private sector GDP of 0.6 percentage points. For every \$1 billion in new investment in core infrastructure, we can expect an extra \$840 million added to GDP each year from the private economy, of which about \$141 million is increased output from the manufacturing sector.⁶



⁵ US Treasury Department with the Council of Economic Advisors, *An Economic Analysis of Infrastructure Investment*, October 11, 2010.

⁶ James Heintz, Robert Pollin, and Heidi Garrett-Peltier, Political Economy Research Institute of the University of Massachusetts, *How Infrastructure Investment Support the US Economy: Employment, Productivity and Growth*, prepared for the Alliance for American Manufacturing, January 2009.

Of course, not all infrastructure investments are productive, so any new investment would have to be well-planned and justified on the basis of environmental and economic returns.

Money Matters

Money matters. It matters because the nation's clean water progress and achievements are at risk. It matters because local ratepayers are increasingly tapped out. It matters because the benefits of clean water can repay our investments handsomely through jobs, productivity, and competitiveness. It matters because clean water needs to be available to all Americans wherever they live, visit, vacation, or invest. Money matters if we hope to achieve America's clean water goals.

To learn more about the *Money Matters* campaign visit NACWA's *Money Matters* website at www.nacwa.org/moneymatters.

TWO SIDES OF THE **SAME COIN**:

INCREASED
INVESTMENT

& REGULATORY
PRIORITIZATION



MoneyMatters[™]

Smarter Investment to Advance Clean Water

In the 1972 Clean Water Act, America committed to a national goal of fishable and swimmable waters. To back this objective, the U.S. Congress established an intergovernmental partnership to pay for needed clean water infrastructure. For twenty years, federal and local governments invested heavily in treatment and conveyance works and the quality of our waters improved dramatically. Over the last 20 years, however, this trend has reversed. The federal government has largely withdrawn from directly funding clean water infrastructure and pollution from nonpoint sources, like urban and agricultural runoff, has escalated degradation of water quality in America's lakes, rivers, estuaries, and coastal waters. ***We can restore the national priority for clean water, but it will take smart investments, flexible approaches, and a renewed intergovernmental partnership to get there.***

The Reversal of the Trend Toward Cleaner Water. . . Why Now?

Compared to conditions in the 1970s, water quality today is uniformly better. In many places, improvements have been dramatic — fish have returned to once toxic rivers, diverse aquatic life now thrives in many of the nation's bays and estuaries, and thousands of miles of beach are enjoyed each summer free of harmful bacteria. In addition to these ecological benefits, America has enjoyed a wide range of economic benefits from cleaner water. Every day, Americans rely on clean water for drinking, recreation, commercial fishing, and a wide range of industrial activity. These economic activities generate billions of dollars in income every year, none of which would be possible without the clean water resource on which they rely.

As impressive as these achievements may seem, a closer examination of trends tells a very different story. Dramatic improvements in water quality in the 1970s and 1980s began to reverse in the 1990s and continued to decline through 2008, the most recent data available. Why is water quality on the decline? There are three key reasons.

First, costs in the initial 20 years of the Clean Water Act were significantly lower than costs in the second 20 years. In essence, between 1972 and the early 1990s, we harvested the relatively low hanging fruit — installing secondary treatment in place of no treatment or just primary treatment. Removing the next increment of pollutants, the target of the 1990s and 2000s, by increasing treatment levels to advanced secondary or tertiary treatment was orders of magnitude more expensive. The cost of removing target pollutants like nutrients and reducing wet weather flows in general over the next 20 years will be more expensive still.

Second, the funding for clean water programs has shifted dramatically over this period, from an intergovernmental approach in the 1970s and 1980s to a largely local, user-financed approach.

Third, there is strong scientific evidence that continued focus on point sources to achieve water quality gains was ineffective as of the late 1990s. According to biennial surveys conducted by the states, municipal wastewater and urban stormwater have declined steadily as sources of impairment over the last two decades. Runoff from agriculture and airborne deposition of pollutants are the main causes of remaining water quality impairment in rivers, streams, lakes, and ponds.

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Taken together, these three options would help reverse water quality declines and ease costs for local communities over the next decade or more. But this alone will be insufficient to meet Clean Water Act goals. The backlog of needs is simply too high, funds are too limited, and a large proportion of households are already at their financial tipping point.

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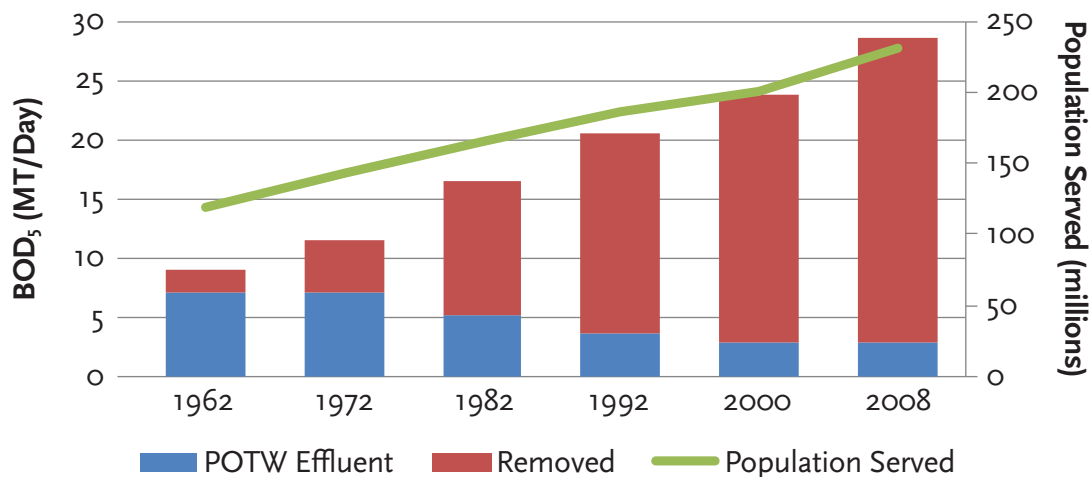
A 50% increase in investment in clean water infrastructure would deliver some 200,000 new jobs, more than a comparable investment in schools, transport infrastructure, energy infrastructure, or broad tax cuts. Moreover, these jobs would be located in many communities with the highest unemployment and fewest prospects for reducing it. Even with a 50% increase, local governments would still be responsible for raising two-thirds of all capital invested and local sewer rates would still increase at about 3% annually above inflation on average nationwide. Realistic water quality standards, innovative technologies and approaches such as green infrastructure, and holistic watershed planning are also essential.

Why Money Matters

Money matters. It matters because the nation's clean water progress is at risk. It matters because local ratepayers are simply tapped out. It matters because the benefits of clean water can repay our investments handsomely through jobs, productivity, and competitiveness. It matters because clean water needs to be available to all Americans wherever they live, visit, vacation, or invest. Money matters if we hope to achieve America's clean water goals.

For a more detailed examination of this compelling issue, please visit www.nacwa.org/MoneyMatters.

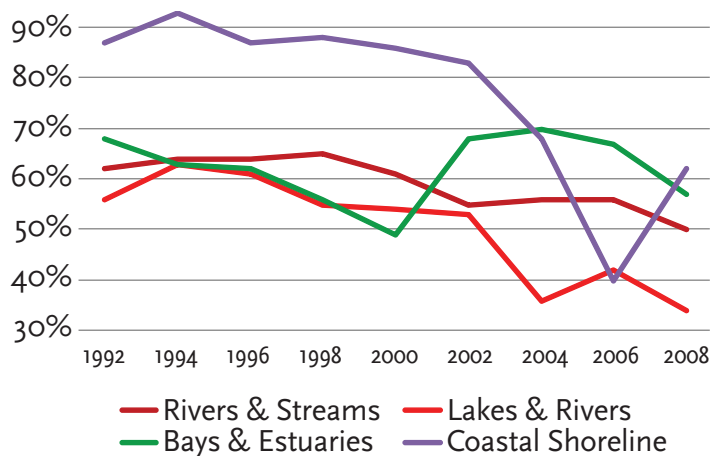
Metric Tons/Day of BOD₅ Loadings



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Source: U.S. Environmental Protection Agency

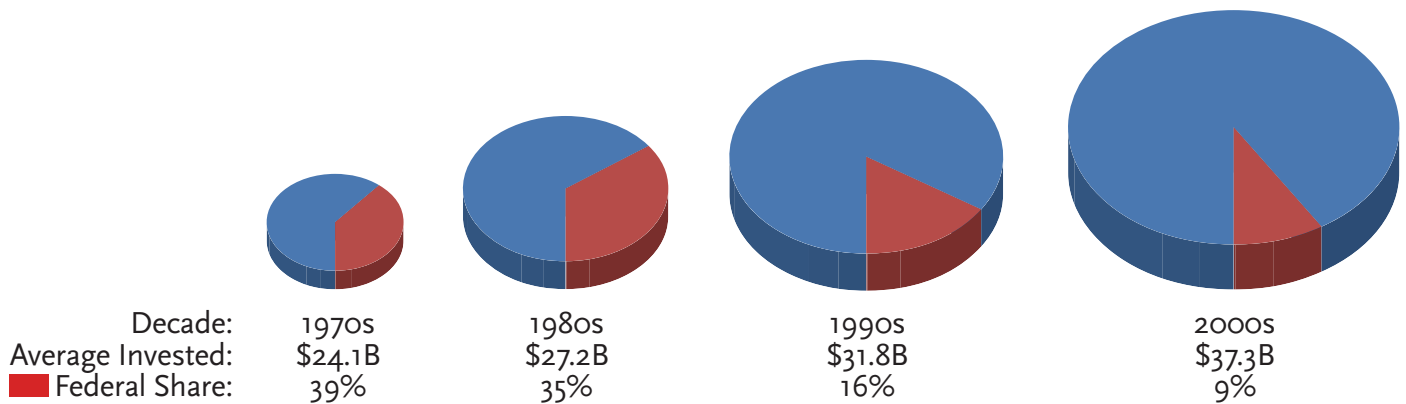
Percent of Waters Meeting Designated Uses



Dramatic improvements in water quality in the 1970s and 1980s began to reverse in the 1990s and have continued to decline through 2008, the most recent data available. Lake water quality has declined dramatically, for example, from 63% meeting designated uses such as recreation and drinking water in the early 1990s to just 34% meeting these same uses today. The percentage of our shoreline meeting fishable and swimmable standards has declined from more than 90% in the early 1990s to just 60% today. Estuarine water quality has fluctuated, but today, just 57% of these waters are clean enough to support aquatic life, compared to nearly 70% in the early 1990s. In the mid 1990s, 65% of America's rivers and streams were clean enough to meet their designated uses for drinking water, recreation, and fisheries. Today, that figure has fallen to just 50%.

Source: U.S. Environmental Protection Agency 305(b) Reports to Congress

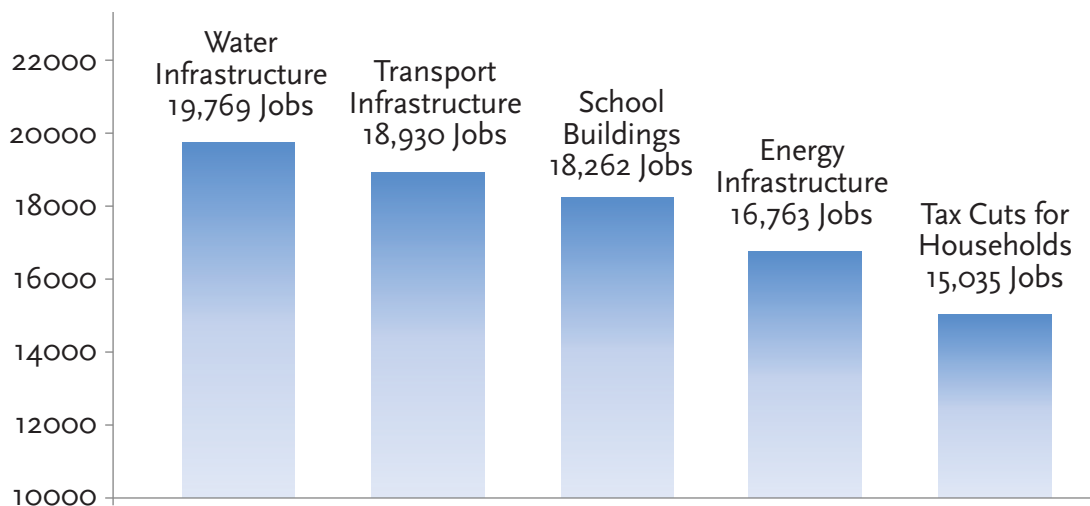
Average Annual Capital Investment in Water and Wastewater Infrastructure by Decade and Source (2010 dollars)



The funding for clean water programs has shifted dramatically, from an intergovernmental approach in the 1970s and 1980s to a largely local, user-financed approach thereafter. According to the U.S. Congressional Budget Office, the federal share of total public capital investment in water and wastewater infrastructure peaked in the 1970s at an average that decade of 39% (63% in 1977) and has declined since, falling to just 9% on average in the decade of the 2000s (6% in 2010). The federal share of total investment, including capital, operations, and maintenance fell to less than 3% by 2010.

Source: U.S. Congressional Budget Office, *Public Spending on Transportation and Water Infrastructure*, November 2010.

Jobs Created per Billion Invested



Source: James Heintz, Robert Pollin, and Heidi Garrett-Peltier, Political Economy Research Institute of the University of Massachusetts, *How Infrastructure Investments Support the US Economy: Employment, Productivity and Growth*, prepared for the Alliance for American Manufacturing, January 2009.

A 50% increase in investment in clean water infrastructure would deliver some 200,000 new jobs, more than a comparable investment in schools, transport infrastructure, energy infrastructure, or broad tax cuts. Moreover, these jobs would be located in many communities with the highest unemployment and fewest prospects for reducing it. As water bodies are restored, both direct and indirect benefits will add value to local economies and national economies through more productive fisheries; higher rates of water-based recreation; significantly increased land values adjacent to and near clean bodies of water; and greater output of agriculture, tourism, and basic industries that rely on process water.



The National Association of Clean Water Agencies (NACWA) is the leading advocate for responsible national policies that advance clean water and create a healthy balance between investment and environmental benefit. NACWA members are America's clean water utilities – dedicated public servants and true environmental champions. For over 40 years, NACWA has been the clean water community's voice in Congress, at the U.S. Environmental Protection Agency, in the media and in the courts.



MoneyMatters™

Smarter Investment to Advance Clean Water

Money Matters™ is about providing clean water to our communities at the best value. It's about investing available resources to maintain existing infrastructure and solve priority water quality problems first. Municipalities throughout the country face a regulatory landscape under the Clean Water Act where everything is a priority, and cost and economics are an afterthought. NACWA's Money Matters — Smarter Investment to Advance Clean Water™ initiative aims to make sure that this paradigm changes now, and for good.

NACWA

Nutrient Summit

Outcomes and Issue Paper

March 2011

Executive Summary

NACWA convened a Summit of representatives from its public agency and private affiliate members last Fall to outline the essential elements of an effective and equitable national nutrient control framework. NACWA understands the need to make continued headway on controlling nutrient pollution and used the Summit to discuss new approaches to nutrient goal development, state programs that are making real progress, and what the clean water community can do to help improve the country's efforts to address nutrients. Given the ongoing debate surrounding the development of nutrient criteria and the frustration with current efforts felt by all stakeholders, NACWA is committed to using the discussions at the Summit as a starting point for a reinvigorated dialogue with EPA and the states on rational approaches for addressing nutrients.

During discussions at the NACWA Nutrient Summit, a series of Guiding Principles for a rational and scientifically-sound approach to controlling nutrient impacts emerged. In addition to outlining the Guiding Principles, Summit participants worked to develop several key recommendations for improving current nutrient control efforts. While considerable attention was placed on what the 'ideal' program would look like, Summit participants highlighted where existing realities and the need to make additional progress, in some cases where the underlying scientific basis for controls may still be uncertain, were both important considerations.

Elements of the top four recommendations detailed in this paper are new or different from the 'current business as usual' approaches, but NACWA believes they have significant promise in potentially breaking the current logjam on nutrient issues in many parts of the country. The remaining recommendations outline where additional work is needed to make better use of existing tools and develop equitable control programs.

Though the Summit's ground rules limited discussions to changes and actions that could be accomplished using current Clean Water Act (CWA) authorities, Summit participants continually raised the issue that more comprehensive change, potentially to the CWA itself, is needed to fully embrace a holistic watershed-based approach in which all sources are equitably included and ensure the most effective solutions to impacts are implemented.

Introduction and Purpose

NACWA convened a Summit of representatives from its public agency and private affiliate members in September 2010 to outline the essential elements of an effective and equitable national nutrient control framework. NACWA understands the need to make continued headway on controlling nutrient pollution and used the Summit to discuss new approaches to nutrient goal development, state programs that are making real progress, and what the clean water community can do to help improve the country's efforts to address nutrients. Given the ongoing debate surrounding the development of nutrient criteria and the frustration with current efforts felt by all stakeholders, NACWA is committed to using the discussions at the Summit as a starting point for a reinvigorated dialogue with EPA and the states on rational approaches for addressing nutrients.

This issue paper outlines a series of Guiding Principles that Summit participants felt were essential for a nutrient control program to succeed and a set of recommendations that complement the Guiding Principles and provide more detail on what can be done to better address the Nation's nutrient challenges.

Complexity of Nutrient Issues Requires Scientific, Data-Driven Approaches

Summit discussions ranged from broad thematic concepts to more specific and potentially viable control frameworks for nutrients. Summit participants recognized that some of the Nation's waterbodies are suffering from excess levels of nutrients and that public agencies need to be an equitable partner in any solution to this growing challenge. The Gulf of Mexico and Chesapeake Bay are two of the most well-known impacted waterbodies, but nutrients are impacting waters of all types and sizes across the United States. In addition, population growth, changing land use patterns, and other drivers are threatening those waters that to date have only been minimally impacted by human activity.

Action is needed, but as the level of attention being placed on the nutrient issue continues to increase federal, state and local water quality managers are realizing the true magnitude of the challenges that lie ahead. The unique and complex relationships between nutrients and potential impacts in any given waterbody require that we use new approaches to establish nutrient goals and control nutrient impairments. For example, reduced nutrient levels are not always better for an aquatic ecosystem and there are numerous confounding factors that impact how a particular organism or ecosystem responds. These issues are even more complex when evaluating nutrient impacts on flowing waters, such as rivers and streams, or in coastal areas.

Understanding the biology of the waterways we all want to protect is essential to developing effective nutrient goals and controls. For nutrients, there is often no 'bright line' level of nutrients below which aquatic ecosystems will be protected and the use of such bright-line levels could result in undesirable impacts on organisms that may thrive under different conditions. Other environmental stressors including sediment loads, habitat destruction and hydromodification resulting from dams/impoundments can have as much or more of an impact on the health of an aquatic ecosystem than nutrients and can affect how these systems respond to varying nutrient loads.

Efforts at State Level Offer Promising Examples of a Potential National Approach

Since 1998, EPA has been urging states to develop numeric nutrient criteria both to facilitate restoration efforts and to ensure protection of pristine or minimally impacted waters. While EPA has generally maintained a hands-off approach, preferring — appropriately — to let the states take the lead on criteria development, environmental NGOs, dissatisfied with the pace of existing efforts, have petitioned or taken initial steps to petition EPA to promulgate numeric nutrient criteria (e.g., Florida, Wisconsin, Kansas, and the Mississippi River Basin). Some states have made progress in developing numeric nutrient criteria for lakes but many states have had difficulty developing numeric criteria linked to in-stream responses for flowing waters. The resulting delay in implementing the Clean Water Act's (CWA) water quality-based programs, including the development of total maximum daily loads (TMDLs), has led some stakeholders to suggest that the water quality approach be abandoned in favor of technology-driven nutrient controls for point sources.

NACWA strongly believes that reliance on approaches that do not account for the varying ecological effects of nutrient pollution, including misguided criteria development efforts and one-size-fits-all technology fixes, will result in major expenditures for point sources with minimal or no improvement to water quality for many waters. These approaches will also most likely fail to solve the problems associated with controlling nonpoint sources. How water quality impacts from nutrients are assessed and addressed must ensure that management actions will result in water quality improvements, provide lasting benefits, and be affordable and sustainable. At the same time, there is increasing interest in making progress in the interim, while additional data are collected and the uncertainty surrounding control efforts is addressed.

Recent efforts at the state level provide promising examples of how we may best make additional progress on the challenge of controlling nutrients. As discussed during the Summit, where dischargers have worked cooperatively with state environmental agencies, nutrient control efforts have been developed that provide the necessary environmental protections, while affording the flexibility needed to ensure those programs can be implemented in a more cost-effective, targeted fashion. While not using the same model in every case, other states have developed or are proposing approaches that better reflect the unique properties of nutrients. Some of these programs use a more iterative approach to addressing the nutrient challenge — making progress in the near-term despite uncertainty, but providing flexibility to ensure resources are only expended where they are most needed. Given the current limitations under the federal CWA to address nonpoint sources of nutrient pollution, some of these state efforts have also been more effective at leveraging state authorities to address nonpoint contributions. More work is definitely needed, but these cooperative, state-level successes can serve as a model for additional progress.

Creative, Long-Term Solutions Also Vital to Address Nutrient Challenges

NACWA is also working on a parallel track at the federal level to explore potential legislative solutions that support a watershed-based approach to water quality improvement and address all sources of nutrient pollution. Discussions at the Summit focused primarily on those actions that can be taken now, using existing authorities under the Clean Water Act and state law. Nevertheless, Summit participants underscored that for real progress to be made on the nutrient issue in the long-term, more comprehensive changes are needed to ensure all sources of nutrients are equitably incorporated into any viable solution.

Guiding Principles for a More Rational National Approach to Addressing Water Quality Impacts

During discussions at the NACWA Nutrient Summit, a series of Guiding Principles for a rational and scientifically-sound approach to controlling nutrient impacts emerged. The Guiding Principles and much of the discussion at the Summit were prefaced on the conclusion that a new, novel approach to developing and implementing nutrient criteria in the U.S. is needed.

The existing federal model for numeric criteria development and implementation is not working for nutrients in all waterbody types. The delay in implementing nutrient controls is largely due to the fact that we are trying to use a system that was designed for more traditional toxic pollutants – a system that assumes targeting only the levels of ‘pollutants’ (nitrogen and phosphorus in this case) will improve water quality and prevent pristine waters from becoming impaired. A number of states are already exploring new approaches, but more needs to be done to ensure other states can benefit from this work. Discussions at the Summit also recognized that in some parts of the country, where nutrient controls will clearly be needed, action may be appropriate in the near-term despite ongoing efforts to further reduce the uncertainty surrounding the necessary controls.

The Guiding Principles include:

- Water quality assessment and monitoring programs must be sufficiently comprehensive and robust to provide the information needed to support criteria development and document the need for controls to the extent any are required.
- Greater emphasis must be placed on evaluating use attainability and use refinement, if needed, before criteria are developed and controls imposed.
- Numeric nutrient water quality criteria must:
 - Be technically and scientifically defensible, developed to reflect the full range of biological, chemical, and physical properties of the waterway, and protect designated uses;
 - Be based on a demonstrated and quantified cause and effect relationship and appropriately qualified by the uncertainty in those relationships; and
 - Not be used as the basis for imposing nutrient controls unless a nutrient caused biological impact has been confirmed or a potential for impact can be demonstrated through a nutrient-specific, technically/scientifically defensible reasonable potential evaluation.
- New and innovative approaches for expressing nutrient water quality criteria or goals, instead of simple expressions of total nitrogen and total phosphorus concentrations, must be developed and encouraged.
- The sources of nutrients and their relative contributions in a particular watershed should drive the selection of control options; there should be flexibility to consider a range of point source control options, including water quality and technology-based approaches.

Option selection should be a state-driven effort and include the development of an accountability framework that ensures equitable reductions from all sources.

- Flexibility, both in developing water quality criteria and implementation (e.g., better use of existing CWA tools like variances and permit expressions such as longer averaging periods), is needed to account for the uncertainty due to the unique ecological interactions between nutrients and designated uses.
- An adaptive, watershed management approach must be used to ensure continued progress toward long-term water quality goals.
- Any required nutrient controls for point sources must be technically achievable, ensure that required investments are sustainable, and provide measurable benefit to the community.

Recommendations for Improving Current Approaches

In addition to outlining the essential elements of any nutrient control program (the Guiding Principles above), Summit participants worked to outline several key recommendations for improving current efforts. While considerable attention was placed on what the ‘ideal’ program would look like, Summit participants highlighted where existing realities and the need to make additional progress, in some cases where the underlying scientific basis for the level of control needed may still be uncertain, were both important considerations.

Many of the recommendations outlined below are already components of the national CWA water quality program to one degree or another, or have been proposed as elements in state programs. In many cases Summit participants highlighted that what was most needed was increased use of existing tools.

Though the Summit’s ground rules limited discussions to changes and actions that could be accomplished using current CWA authorities, Summit participants continually raised the issue that more comprehensive change, potentially to the CWA itself, is needed to fully embrace a holistic watershed-based approach in which all sources are equitably included and ensure the most effective solutions to impacts are implemented.

The first four recommendations listed below, Range of Control Approaches, Adaptive Implementation, Flexible Permit Expression, and Effective Incorporation of Costs and Benefits, were the focus of significant attention from Summit participants. Elements of these recommendations are new or different from the ‘current business as usual’ approaches, but NACWA believes they have significant promise in potentially breaking the current logjam on nutrient issues in many parts of the country. The remaining recommendations outline where additional work is needed to, for example, make better use of existing tools and develop more guidance and equitable control programs.

1) Range of Approaches for Establishing Criteria and Selection of Controls Must Be Available

Probably the most controversial issues surrounding nutrients are the establishment of appropriate CWA 304(a) criteria and the use of those criteria to select the control measure(s) that may be needed. During the Summit, participants discussed the need for ensuring that a range of criteria development and control approaches be available in light of the substantially different local conditions and needs.

To date, the point source community has largely insisted that EPA and the states establish a clear causal link between nutrient concentrations and water quality impacts before establishing a water quality criterion and before imposing control requirements. Summit participants discussed the reality that in some parts of the country, where point source contributions comprise a larger portion of the total nutrient load and where water quality conditions are obviously impacted by nutrient over-enrichment, action may be necessary despite uncertainty in the underlying scientific information regarding causal links.

Discussions addressed the situations in which each of these approaches below may be appropriate, but focused on the need for options. NACWA envisions that the point source community would work collaboratively with the states to determine what combination of these approaches may be appropriate for particular states and waterbodies.

Overall, three approaches were discussed:

- Use of special studies to develop site-specific criteria, considering the full suite of potential criteria expression options (beyond TP and TN). Necessary point source controls would be established based on reasonable potential determinations (for un-impaired waters) and based on total maximum daily load (TMDL) waste load allocations for impaired waters. While site-specific criteria development is resource-intensive, new, lower cost modeling and analysis tools are becoming more available to better enable this mechanistic approach. More specifically, mechanistic approaches such as modeling could serve to assess the “effect” of nutrients on certain end-points (e.g., seston algal densities, attached periphyton, dissolved oxygen levels, etc.). Dischargers, regulatory agencies, and other stakeholders would need to work together to agree upon a common set of end-points and target values that the site specific criteria (and associated nutrient reductions) would be designed to achieve. This site-specific approach would be most appropriate where the point source community is willing and able to make significant resource investments and ensure there is adequate data and information to support modeling and develop the site-specific criteria. The approach is also likely to be more effective where there is greater uncertainty regarding the contribution of point sources to impairment.
- A collaborative effort between the discharger community and the state to develop state-wide nutrient criteria using a scientifically-defensible approach¹. Again, criteria developed through this approach should consider the full suite of criteria expression (i.e., beyond TP and TN concentration levels) and dischargers still need the option to develop site-specific

¹ EPA generally refers to three approaches for developing nutrient criteria – stressor response, mechanistic modeling, and the reference condition approach. NACWA generally believes that the reference condition approach is not a scientifically defensible method for developing water quality criteria that adequately reflect the unique properties of nutrients and protect the full range of potential designated uses.

if they choose. This option could be appropriate when a site-specific approach is deemed too costly and where a significant point source contribution is better established. While it may be possible to establish a clear cause and effect relationship using this approach (e.g., for lakes), the level of uncertainty associated with the linkage between the criteria and the potential for water quality impacts using state-wide criteria will necessitate more flexible implementation provisions. *See Flexible Permit Expression* below. Recent efforts in Wisconsin, during which criteria were developed in tandem with flexible implementation procedures, illustrates how this type of approach can be successful.

- Use of technology-based effluent limits for point sources, as appropriate, considering local water quality conditions, relative source contributions and facility size. A reasonable level of technology-based control (e.g., biological nutrient removal to levels such as 8 mg/L TN and 1 mg/L TP) may be appropriate for some point sources – in waters where point sources are dominant contributors of nutrients and where nutrient levels are so high that controls will obviously be necessary. NACWA continues to believe that this is not a viable option nationwide, but something that could be considered at the state and watershed levels as either the framework for a nutrient control program or an interim step to be used as the state continues to develop water quality criteria. Summit participants indicated that the clean water community would need to be directly involved in the selection of any technology-based option. The approach currently employed by the State of Kansas is likely a good example for this type of nutrient control approach. The use of a technology based approach would not be appropriate in cases where dischargers are willing to invest and collaborate with regulatory agencies in the development of other options such as site-specific or state-wide criteria as previously described.

In many cases a hybrid of the above options would be appropriate. For example, in some states a technology-based approach is being explored for the near term while efforts continue to refine the science necessary to establish nutrient criteria. For all of these approaches, Summit participants recognized that impacts on downstream waters would need to be considered as well.

2) Goal Implementation Should Be Achieved Through Adaptive Management

Where nutrients are contributing to water quality impacts, Summit participants identified the need for a true adaptive management approach to ensure that necessary control efforts are done in an economically efficient manner and to ensure that equitable controls are developed to address nutrient contributions from both point and nonpoint sources in a watershed. The State of Wisconsin included an adaptive management approach in recently adopted rules that could serve as a starting point for other adaptive management efforts.

Through adaptive management, collaboration between point and nonpoint sources is encouraged. Flexible approaches for meeting water quality criteria can be pursued, including water quality trading and offsets. Adaptive management demands longer implementation horizons, recognizing that it takes time to develop and implement a coordinated nutrient control strategy within a watershed, and for the resulting water quality benefits to be realized. This is particularly true where water quality trading or the purchase of offsets is part of the implementation strategy. Establishing interim water quality goals will ensure that adequate progress is being made to meet the final water quality criteria. This would need to be supported by water quality monitoring within the watershed and an evaluation process to monitor progress.

In general, with nutrient-related water quality impacts longer implementation horizons, potentially 15 to 20 years or more, are needed. EPA recognized this when it requested comment on a restoration standard concept in its recent proposal of numeric nutrient criteria for Florida. A single five year permit term for point sources is insufficient time to allow controls on nonpoint sources to be put in place and begin to work. Through the establishment of an adaptive management framework, with interim goals and accountability, progress will be assured while enabling the use of more cost effective approaches.

3) Flexible Permit Limit Expression Needed

Expression of discharger permit limits for nutrient-related parameters should be flexible and recognize the unique characteristics of nutrient impacts that set them apart from other pollutants such as metals. Setting permit limits based on short-term periods such as weekly or monthly averages and establishing daily maximum limits is inappropriate for the vast majority of surface waters. Nutrient impacts are generally realized on a much larger time scale and use of annual averaging periods is appropriate when setting permit limits for many waters.

Beyond the averaging period, permit limits may also need to consider seasonal variability and be more dynamic than typical pollutant limits to better connect them to in-stream conditions like flow. There are also new, more innovative approaches to establishing permit limits for nutrients under consideration like the use of nutrient assimilation zones and load duration curves to better account for the behavior of nutrients once discharged. EPA should better explore these innovative approaches and ensure the states receive information and guidance on their use. NACWA's members are working on many of these new approaches and can provide additional information on how they may improve our current efforts to address nutrients.

4) Cost and Benefit Considerations Must Be Effectively Incorporated

A top concern for utility managers at the Summit was the need to strike an appropriate balance between their commitment to protecting the environment and their commitment to provide cost-effective service to their ratepayers. Clean water agencies have been entrusted with the responsibility to spend their communities' limited resources in a manner that will provide the appropriate level of service, ensure compliance with all necessary regulations, and ultimately result in an improved environment. In this capacity, utilities have a responsibility to ensure the investments they make will actually improve water quality.

Establishing a clear causal link between nutrients being discharged from the wastewater treatment plant and designated uses and water quality is critical in demonstrating the need for a particular investment to ratepayers. Securing the necessary funding to install and operate nutrient controls in watersheds where point source reductions will have little or no measurable benefit will be difficult and in some communities impossible given the political realities of how rate increases or bond issuances are approved. While the current water quality-based programs of the CWA do not expressly include cost-benefit considerations, the implementation of water quality criteria, TMDLs, and the imposition of water quality-based effluent limits must acknowledge the importance of these cost-related challenges at the local level.

In addition to the importance of establishing a causal link when evaluating cost-benefit, the issue of how much treatment should be required of a point source must also be considered. While the CWA's water quality programs provide no off-ramp for point sources to avoid technology controls

at or beyond the limits of technology (including reverse osmosis), EPA's final rule establishing numeric nutrient criteria for Florida recognizes that implementation of such controls "has not been demonstrated as practical or necessary." This reflects the fact that forcing utilities beyond a certain level will cost much more than the benefits received and result in major increases in power consumption and greenhouse gas emissions. EPA's statements to the contrary, however, do not remove the potential CWA mandates (e.g., TMDL wasteload allocations) that could impose these excessive levels of control.

Consideration of cost-benefit, clear causal links, and the appropriate level of treatment are even more critical where point sources are the primary contributors to nutrient impairment and where there is no program in place to ensure that equitable controls from all sources are imposed. As evidenced by EPA's proposed TMDL for the Chesapeake Bay, where controls on nonpoint sources are not in place, point sources will continue to bear the brunt of the responsibility for reducing nutrient loads, without regard to cost or benefit.

5) Know Your Waters – Monitoring Programs Must Be Sufficiently Robust

Summit participants felt that monitoring programs should be sufficiently robust to potentially support the development of site-specific criteria for nutrients and include information on biological, chemical and physical waterbody characteristics. Monitoring programs should be equipped to assess for biological impact as well as take stock of the full range of stressors that could influence the level of nutrient impairment (e.g., habitat loss, tree canopy, flow modifications). Ultimately these monitoring and assessment programs should be able to characterize any causal links between nutrient loads and water quality impacts.

Recognizing the limits of existing state budgets and the potential for cuts into the future, Summit participants highlighted the important leadership role that clean water agencies (and presumably other dischargers) would need to play to support this level of water quality monitoring. Where water quality programs are lacking, it was presumed that the clean water community would work to ensure that the appropriate data were collected or that the resources needed to conduct the monitoring were available to support defensible and responsible decision making.

6) Uses of Waterbodies Must Be Evaluated

Second only to monitoring, Summit participants felt that ensuring water quality efforts are working toward the correct endpoint is a top priority. Too often use attainability analyses (UAAs) are seen as efforts undertaken to downgrade a use. EPA has provided insufficient guidance on the appropriate use of UAAs and done little to address the stigma now associated with this important tool. Getting uses right is essential for ensuring that the CWA water quality-based programs are effective.

For nutrients, the question of designated use is even more critical because the link between nutrients and uses is often not clear. In many cases, all that is needed is simple refinement of an established use to more accurately reflect the different conditions that may support acceptable, desired uses and ensure that the goals of the CWA are met. For example, an aquatic life use that may otherwise seem unattainable may be refined to indicate that the actual goal is sustaining a warm-water fishery, which would add significant clarity to the level of protection that was necessary. EPA must do more to increase the refinement of uses and the utilization of UAAs.

Another important element of ensuring that management efforts are working toward the right targets is to conduct more thorough reviews of state water quality standards via the existing triennial review process.

7) Existing Tools Need Added Clarity and Improvement

Summit participants agreed that many of the tools needed to better address nutrient issues and the complexity associated with implementation are already available. These tools include variances, compliances schedules, watershed-based permitting, and UAAs. However, EPA needs to do more to ensure these tools are more widely used and accepted and needs to provide additional clarity on when and how they can be used. New approaches, including the restoration standard concept contemplated by EPA in its proposal for Florida, may be needed, but more can be done with existing tools as well.

In exploring the use of these tools, NACWA believes that more thoughtful consideration should be given to defining the nature of any relief that may be needed for a set of local conditions. For example, is there a need for more time to meet an attainable limit? Is the limit one that cannot be met from a technological or economic impact standpoint or is the designated use unattainable? The State of Montana, for example, is exploring an approach to nutrient control that incorporates existing variance authorities, an evaluation of attainability, and an affordability component to determine how to impose controls on point sources.

The current TMDL program provides a powerful tool through which an adaptive management framework can be applied and the use of longer-term implementation timeframes, variances, watershed-based permitting, and other existing tools can be coordinated. NACWA believes that additional guidance from EPA on TMDLs would be helpful, especially in the area of establishing among watershed stakeholders the principles (including cost and equity) that will guide decision making.

8) Nonpoint Sources Must Participate in a Meaningful Fashion

While Summit discussions did not address broader policy issues associated with potential changes to the CWA, significant focus was placed on the need for an equitable accountability framework to ensure that all sources of nutrients are considered and controlled accordingly. While authority is lacking at the federal level to directly control nonpoint source contributors, several states, including Wisconsin, have developed programs for addressing nonpoint sources that could serve as models for other state and national efforts. NACWA believes that the establishment of accountability frameworks at the state level must be a top priority. These frameworks would include a quantitative allocation process for all sources, performance standards (to enable progress monitoring), and implementation drivers (e.g., loss or redirection of funding for nonpoint source management to the extent possible under current law).

Other Important Considerations

Beyond the recommendations above, Summit participants identified other considerations that will need to be factored into future efforts to address nutrient-related water quality impacts.

Though there is no established methodology for doing so, Summit participants recognized that efforts on nutrient control must consider near and far field impacts. Protection of downstream waters is a crucial issue and one that EPA is now aggressively pursuing with its work on downstream protection values in Florida. NACWA believes that more work is needed in this area. How potential downstream impacts are addressed, especially when local waters may not require nutrient controls, will need to be considered further. Ignoring the health of local biological systems and installing treatment to protect downstream, far-field impacts will be a major challenge for utility managers who must demonstrate to their ratepayers the benefits gained from their investments.

Summit participants also highlighted the importance of education and outreach as an element of future work on nutrient controls. Specifically, EPA, states and the discharger community must work to increase the level of awareness regarding the complexity of nutrient impacts and the flexibility currently available under the CWA to address them. In this context, Summit participants emphasized the need to conduct community and advocacy group outreach to develop a common understanding of nutrient challenges, state regulator outreach to raise awareness of existing CWA flexibility, and public outreach to inform about the relative importance, value, and budget requirements for nutrient management investments.

States play a key role in CWA implementation. Given the current limitations of the CWA's statutory reach, many see the states playing an even more integral role in efforts to address all sources of nutrients, including nonpoint sources. But states will no doubt face tremendous obstacles to addressing nutrient contributions from agriculture. Addressing interstate water issues, such as the hypoxia in the Gulf of Mexico, will further complicate a state-by-state approach. States will need to maintain or develop certain capacities to enable site-specific criteria development, the use of adaptive management approaches, and the increased use of existing CWA tools such as UAAs and variances. The clean water community will need to support and encourage states to invest in the tools and talent needed to enable this level of management and advocate for federal money to support states' capacity needs. The clean water community should also actively engage states in support of criteria development.

Conclusions and Next Steps

NACWA understands that continued efforts are needed to address nutrient-related water quality impacts nationwide. NACWA's September 2010 Nutrient Summit was convened to explore new approaches to nutrient goal development, cite programs that are making real progress, and determine what the clean water community can do to improve the country's efforts to address nutrient impairments. NACWA strongly believes that reliance on criteria development and permit implementation approaches that are poorly linked to the ecological effects of nutrient pollution will result in major expenditures for point sources with possibly no or minimal improvement to water quality for many waters. How nutrient water quality impacts are assessed, criteria are set, and controls are implemented must ultimately result in water quality improvements, provide lasting benefits, and be affordable and sustainable.

At the same time, there is increasing interest in making progress in the interim, while additional data are collected to help resolve some of the uncertainty surrounding control efforts. Proceeding in the absence of a clear causal link, however, necessitates significant flexibility in implementation.

NACWA believes that a range of control approach options combined with better reliance on existing CWA tools will accelerate current efforts to address nutrient-related water quality impacts.

NACWA's Nutrient Summit was only the first step in what NACWA hopes will be an active and sustained dialogue among EPA, the states, and the clean water community on these issues. NACWA has already had preliminary discussions with both EPA and the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) and plans to use this issue paper to guide these discussions going forward.