

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OUTDATED & OVERBURDENED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

RISING 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

RIISING 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.

