

# Summary Report

## U.S. EPA Regional Sustainability Infrastructure Forum

### U.S. EPA Region 5 and Region 7

November 13 and 14, 2007

St. Louis, Missouri

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## **Goals of the Sustainable Infrastructure Forum**

This report is a summary of the discussions at the U.S. EPA Region 5/Region 7 Sustainable Infrastructure Forum held in St. Louis on November 13 & 14, 2007. Sustainable Infrastructure (SI) is a U.S. EPA initiative to raise awareness of water and wastewater infrastructure needs and to promote practices to ensure that infrastructure is properly operated and maintained, and that sufficient capital is available to fund future needs and interim replacements. The Forum in St. Louis was the second of a number of “Regional SI Forums” that U.S. EPA facilitated to provide SI information to representatives from utilities (administrators and operators), academia, state and federal governments, consulting engineers, and other water infrastructure stakeholders. The Forum was also designed to gather valuable feedback and insight from these water infrastructure experts regarding the challenges they have faced, the opportunities they have recognized, and the solutions they have implemented.

To elicit these insights, each Forum attendee participated in a series of facilitated interactive group discussions that focused on one of the Forum’s four topic tracks:

- Developing new and innovative technical solutions, and advancing beneficial solutions into practice
- Extending the life of utilities through Environmental Management Systems (EMS) and Asset Management approaches
- Reducing utilities’ future capital costs
- Identifying sustainability solutions for small utilities

The overall goal of the Forum was for U.S. EPA to assemble the SI solutions, approaches, and strategies that were generated in the track discussions into a suite of best practices that communities can access to inform the planning, design, financing, construction, and operation of their water and wastewater infrastructure. System managers, in coordination with their engineers, financing sources, contractors, and operators, will be able to examine the suite of best SI practices and select the most appropriate technical, operational, management, and financial solutions to affordably address the needs of their users.

## **Key Recommendations for U.S. EPA**

The facilitated discussions in each track generated a great deal of information about obstacles, opportunities, and actionable next steps for U.S. EPA. Those discussions are summarized in the Track Topics section of this report. In addition to these track-specific conclusions, there were four key recommendations for U.S. EPA that were developed at the Forum.

- U.S. EPA must facilitate the development and implementation of new SI solutions through ideas through education, outreach, research, and technical assistance.
- U.S. EPA must provide technical assistance and training to small systems seeking to develop and implement environmental management systems and asset management plans, to ensure that systems are run as efficiently as possible.

- U.S. EPA must recognize that each utility has distinctive needs, and must address those needs with strategies tailored to its specific circumstances. Smaller systems, in particular, must be offered potential SI tools and solutions that are both effective and practical in the context of their volume of activity and their financial, managerial, and operational capacity.
- U.S. EPA must take an active leadership role in promoting the value of water services, and must support regional and local education and outreach efforts that communicate to the public how local funding is necessary to build and maintain sound water infrastructure that protects public health.

### **Track Topic Discussions**

Each SI Forum attendee selected one of the four Track Topics, and participated in a series of facilitated discussions in which they shared their relevant perspective and experiences with their fellow track members. Track leaders guided these discussions through three serial phases:

- Identifying significant challenges and obstacles
- Sharing solutions, tools, and approaches for improvement
- Turning ideas in action / follow-up steps

For each of the four track topics, the key points raised in each phase are identified in the following pages of this Summary Report. Due to the magnitude of information that was developed with this approach, these key points are generally referenced in bullet fashion in this Summary Report. For additional context on these key points, please refer to the detailed record of Track Topic discussions that was captured in the Detail Report that serves as a companion to this Summary Report on the SI Forum. Selected discussions are also available on web-based video via the link: <http://accordent.powerstream.net/008/00136/SI%2DFORUM/>

(Note: The available video segments also include several presentations made to all Forum attendees in plenary sessions.)

### **Track Topic: Developing new and innovative technical solutions, and advancing beneficial solutions into practice**

#### **Key Challenges and Obstacles**

- Decision-makers are risk-averse, and are concerned about possible liabilities if something goes wrong. There may also be uncertainty as to what maintenance will be required for a new technology. These factors create important barriers to adoption of new technologies.
- Testing and demonstrating the performance of innovative technologies carries significant financial risks, especially for smaller companies that develop novel processes and technologies.
- State and federal review and approval of a new innovative technology requires significantly more resources than a "tried and true" technology. This is especially true

for radically new technologies, as reviewing agencies may not be familiar with some dimensions of the technology and/or suitable tools or protocols for assessment.

### Pathways for Progress/Action Steps

- It may be possible to counteract tendencies to be risk-averse by phasing in new technologies, using flexible designs (where feasible), and using adaptive management.
- It may be possible to improve communications related to new technologies, so as to share information about research activities and to share findings with standard-setting bodies, state agencies, and practitioners.
- For some new/emerging technologies, it may be appropriate for U.S. EPA to perform national or regional testing (versus localized testing), so as to achieve economies of scale and to foster a degree of standardization in decision-making criteria.
- To deal with approval process issues it may be feasible to make supplemental technical resources available to review bodies to better understand and evaluate radically different/new technologies.

### **Track Topic: Extending the life of utilities through Environmental Management Systems (EMS) and Asset Management approaches**

#### Problems, Challenges and Obstacles

- Communities must identify the current conditions and needs of their systems.
- Barriers to utilizing an EMS and/or Asset Management include: Insufficient resources to implement a new program, resistance to change, finding a leader to break the cycle.
- Lack of planning and lack of communication between the city and the utility contribute to inefficient solutions.
- Communities need to plan and better manage growth.
- We need to find ways to motivate communities to act independently, and to seek compliance for reasons other than force by regulatory agencies.
- We need to recognize and give credit to systems that perform operation and maintenance that increases the efficiency and life of their system or facility.
- Industry needs to believe in the value of what they are doing. Customers believe in the value of clean water, but staff and managers need to acknowledge that value.
- There's a need for subsidy programs that focus on optimal use of money.

#### Solutions/Pathways to Progress

- Implement Environmental Management Systems.
- Conduct Asset Management.

- Develop a way to measure success so that results are tangible to showcase the value of an EMS or Asset Management program.
- Information is readily available, but someone needs to translate it to let others know how it relates to them.
- Utilize resources to prepare EMS or Asset Management plans. Resources include: the PEER Center, MEMP, web resources, county extensions and finance centers.
- Communities will act independently if they are given a vision. Some communities are uncertain of where or how to improve their system or facility, but will respond once this is identified.
- The public will trust the government if good environmental stewardship and good politics are implemented.
- Funding for capital has led people to think capital is the best way. The bias needs to be taken out of subsidies or subsidy programs should be eliminated.

#### Turning Ideas into Action

- Representatives of two cities participating in the track discussion expressed interest in exploring the ideas and tools discussed during the track.
- U.S. EPA should provide technical assistance and training to small systems seeking to develop and implement environmental management systems and asset management plans, to ensure that systems are run as efficiently as possible.

#### **Track Topic: Reducing utilities' future capital costs**

#### Problems, Challenges & Obstacles

- Small systems have distinctive problems which will need different solutions.
- Rate increases are infrequent and inconsistent.
- Public and community representatives are not aware of the value of water and water treatment services.
- Some future costs will increase rapidly with worldwide developments underway.

#### Solutions/Pathways to Progress

- Better means to utilize regional management solutions are needed to reduce capital and operational costs.
- Better communication between City Councils and the public is needed to raise awareness of the value of water.
- Management via a watershed approach has many benefits.
- Variability in commodity costs in planning future capital costs must be considered.

## Turning Ideas into Action

- Maximize economies of scale through regional planning, and by providing communities with decision-making tools that contemplate growth and changing infrastructure needs.
- Regionalize community education.
- Develop and support efforts to raise public awareness of the value of water services, through promotional campaigns and business/financial approaches to education (Asset Management).
- Emphasize watershed approaches by generating water quality monitoring data and sharing it via the internet.
- Craft more effective legislation to address agricultural pollutant loading.
- Encourage use of new innovative technologies to reduce variability in capital planning.
- Promote development of tools to more accurately model lifecycle cost and performance of infrastructure assets.

## **Track Topic: Identifying sustainability solutions for small utilities**

### Problems, Challenges and Obstacles

#### *Challenges Specific to Small Systems*

- Small systems have difficulty obtaining financing, and may lack sufficient continuing system revenues to repay infrastructure loans due to declining populations.
- Utility operators and municipal managers in small communities are often over-extended, and may not be able to provide the attention that their system requires.

#### *Challenges Faced by Systems of All Size*

- Infrastructure is not a high priority in the federal budget, given budget increases for defense and military spending, and aid directed to natural disasters.
- Empirical information, rather than anecdotal information, is needed to make decisions on how to proceed.
- Even in cases where acute violations necessitate changes be made to a public water system quickly, it is difficult to obtain funding immediately.
- Municipal managers need to be better educated and/or hold more expertise in order to make decisions about how to maintain public water systems.
- Due to the comparable abundance of water resources in the Midwest, the public is not as accepting of rate increases to address water quality problems (versus water quantity).
- Infrastructure is aging, and construction costs are increasing.
- Communities are having difficulty keeping up with new regulations.
- Decisions regarding infrastructure improvement can be delayed due to political barriers.

## Solutions/Pathways to Progress

- Operators need to be better equipped for the position, through additional training, higher skill requirements, and increased salaries.
- Regulatory agencies need to improve communication about risks.
- Communities should take advantage of increased media attention to drinking water quality issues to raise public awareness of and support (funding/rates) for water services.
- Operators of public water systems should be held responsible for non-compliance situations; in addition to the City Council.
- Capacity development should be expanded so as to improve compliance.
- Training tailored to local officials should be available.
- Raise public awareness about the value of drinking water.
- State Revolving Fund (SRF) should be better used, and funding opportunities should be consolidated.
- Facilities should implement asset management.
- There should be a System Management Intervention Program to assess consolidation as a means to increase protection of public health protection, compare economic advantage, and ensure wells are abandoned properly.

## Turning Ideas into Action

### *Challenges Specific to Small Systems*

- Small systems should consolidate with larger systems to improve water quality and/or keep costs down. The number of small systems that purchase water is increasing because it is getting too costly to treat the water within the community.

### *Challenges Faced by Systems of All Size*

- EPA, States and industry need to promote and utilize the State Revolving Funds (SRF) so that it is being used to its full potential.
- Training opportunities should be expanded to allow for varying types and sizes of systems.
- Asset Management should become a necessity, rather than a novelty.
- Current operators and City Council should document managerial and financial decisions so that future operators and City Council members can make more informed decisions.
- Regulatory enforcement should transition to become more focused on acute violations, and less focused on chronic violations.
- EPA and the States need to further promote the Operator Certification Expense Reimbursement Grants Program

- “Personalized” information should be distributed to customers.
- Infrastructure needs to plan for both procedural and operational continuity by diagnosing gaps and identifying mechanisms, including identifying the cost to replace key staff and costs of services provided by volunteers.