



By Benjamin H. Grumbles

## The cruellest month

*Commentary on trends in water reuse and new storm water policies*

T.S. Eliot's lines ring true not just to taxpayers but also to water policy-makers and practitioners. April is the blending of hardened experience with youthful exuberance, often resulting in disappointment as the new spirit cannot quite deliver with the old body. So it is, as the "honeymoon" for a new administration wears off for good and the realities remain for better or for worse.

### Breeding Lilacs & New Water

The world's excitement over clean and renewable energy should take root in water, too. Technology and innovation may breed a revolution in water reuse and reclamation, but it will take time. Regulators, researchers and entrepreneurs all have roles to play in promoting responsible recycling. The U.S. Environmental Protection Agency's (EPA) 2008 Water and Climate Strategy, available at [www.epa.gov/water/climatechange](http://www.epa.gov/water/climatechange), identifies "industrial water conservation, reuse and recycling technology transfer as one of its top 44 actions to mitigate greenhouse gases and adapt to changing water conditions."

EPA's Office of Water is funding an important study by the National Academy of Sciences (NAS) on "Assessment of Water Reuse as an Approach for Meeting Future Water Supply Needs." The study, slated for completion in 2010, is reviewing the current state of technology in wastewater treatment and production of reclaimed water; how available treatment technologies compare in terms of treatment performance, cost, energy use and environmental impacts; challenges and limitations; infrastructure requirements of water reuse for various purposes; life-cycle costs; benefits of water reclamation; and how reuse compares with other supply alternatives.

According to EPA's January 2009 update on its strategy, the NAS study will help to:

- Revise EPA's 2004 water reuse guidelines;
- Develop a comparison of performance, costs, energy requirements and greenhouse gas releases for different levels of wastewater treatment;
- Develop a comparison of costs, energy requirements and greenhouse gas releases for water reclamation/reuse vs. desalination vs. long-distance transport of water supplies and vs. pumping from deep aquifers;
- Update the comparison of costs of wastewater treatment systems' performance, costs and energy use included in the 1993 report on managing wastewater in coastal urban areas issued by the NAS; and
- Develop case examples of the use of reclaimed municipal effluent as an alternative water supply by various industries.

Quite a tall order, but a worthwhile national effort to get to the bottom of scientific and policy issues involving water reuse, energy and environment. Although, I suspect communities opposed to indirect potable reuse will still label such efforts as "toilet to tap."

Another study by the NAS, "Desalination: A National Perspective" (2008), probes the potential for seawater and brackish groundwater to meet water supply needs in the U.S. Requested by the Bureau of Reclamation and EPA, the report finds the cost of treatment is no longer the primary barrier to desalination technology. Other challenges or uncertainties, however, can include regulatory or financial issues of concentrate management; impingement or entrainment of fish at water intakes; and increased energy consumption and greenhouse gas emissions. It recommends a coordinated, strategic research effort with steady funding.

### Mixing Memory and Peak Flows

Sewer system overflows, bypasses and exceedances: We've been here before and know we can do better. Fifteen years ago this very month, EPA finalized a Combined Sewer Overflow (CSO) Control Policy. Congress codified it into law in 2000. EPA has used a similar but not identical approach to sanitary sewer overflows (SSOs). With both, the country has made environmental progress. Congress has also taken positive steps in the last year to increase reporting and recordkeeping of sewage overflows.

Two areas, however, continue to cause concern: regulatory consistency for "blending" of peak flows within treatment works and affordability considerations for long-term control plans.

EPA worked closely with utilities and environmental organizations to develop a proposed policy for peak flows within treatment works of separate sewer systems.

It differed from an earlier proposal by retaining more environmental safeguards and recognizing more clearly that blending is not a long-term solution but may be necessary when there is no feasible alternative, subject to regulatory review and public oversight.

"April is the cruellest month,  
Breeding lilacs out of the dead land,  
Mixing memory and desire,  
Stirring dull roots with spring rain..."

—T.S. Eliot, *The Waste Land*

The current administration should finalize the policy to increase consistency among regions and reinforce the principle that dilution is not the solution to pollution. EPA should also update and revise its financial capability analysis (from the 1990s) for long-term control plans. This is not necessarily code for extending the time frame for compliance from 15 to 20 or 25 years, but it does mean taking a fresh look at the economics (e.g., what is the right percentage of median household income) and other environmental conditions to reach a good and fair environmental result.

### Stirring Green Innovations

Wet-weather flows (sewer overflows, storm water discharges and nonpoint source runoff) need innovative approaches such as "green" infrastructure, integrated permitting and water quality trading. Increasing precipitation, pavement and population in some regions make the watershed approach all the more timely. Watch for incremental experimentation nationwide as communities, states and EPA confront "urban stream syndrome" (Urban Stormwater Management in the U.S., NAS 2008 report).

### May Flowers

Maybe April is not so cruel after all. Real opportunities are emerging to reuse and reclaim, to resolve blending and treating disputes and to realign storm water policies along watershed lines. And did anyone mention the start of baseball? All in all, a new season of hope, whether on the field or in the watershed. **WWD**

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