

Drinking Water News

For America's Small Communities

# On tap

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## The Future Starts **NOW**

Setting Rates Helps Systems Today and Tomorrow

### Also in this issue:

Launching a Watershed Plan  
Getting Good PR Out of Your CCR  
Road Map to the Future  
Who Needs What Training?



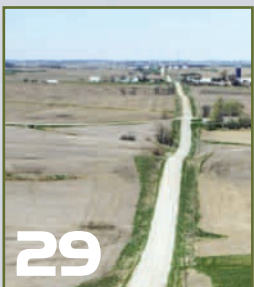




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## Tear-Out Insert

### Tech Brief

#### → Simultaneous Compliance with Drinking Water Regulations

Certain U.S. drinking water regulations have the potential to conflict with each other. This means that small system operators cannot simply comply with these mandates individually, but must consider how changing their treatment process to meet one rule might affect compliance with other rules. This *Tech Brief* provides information and strategies to effectively comply with those regulations that are most likely to conflict with one another.

## The Future Starts NOW

Getting Rates Helps Systems Today... and Tomorrow

By Carl E. Brown, President  
Carl Brown Consulting, LLC

**It's all about the money.** It has always been all about the money. If a farmer's all about the money, all water and sewer systems would run great all the time. We would have no need for National Environmental Services Centers, grant and subgrant from agencies, state water associations, and all the rest. We would have nothing but well-funded, self-maintaining water and sewer systems cranking out great service until the checkbook would they cease to be well-funded!

**Great rates.**

If rate setting were easy, all systems would have great rates. Well, I'm here to tell you that you can have great rates and a checkbook to be hard on your part.

This article will outline a thought and action process that uses hard facts for making good decisions about how to set rates properly. Maybe you will end up doing the analysis yourself, especially if you represent a very large or a very small system. Otherwise, you will hire a specialist to do the heavy lifting for you.

**Just the Facts**

Whether you decide to analyze rates yourself or use outside help, here are some facts to consider:

**FACT:** Water and sewer utilities are businesses. If run and financed well, they become profitable, providing excellent service. If not, they become a very visible source of trouble for a community.

**FACT:** All decisions are investment decisions. You are making them all the time—consciously or not.

**FACT:** All investment decisions tend to span three to five years, sometimes more. What great future? What return do I expect? What is the risk that I won't get my investment? Is the decision supported with data and estimates of outcomes?

**FACT:** According to the U.S. Environmental Protection Agency, under most circumstances by the U.S. one-fifth of funding allocated to wastewater treatment plants in 2000. The federal and state governments will fund only a few percent more, at least temporarily. Some systems will actually fail. Failures will probably occur over a long time so we won't really notice it. Some will be picked up by other systems or companies. Some will do the job right.

Your system is going to fail unless you already had a funding shortfall. Unless you have been cutting the rates for your system for 20 or 30 years, it's not all your fault, but the bad factors will be blamed on whoever is in charge at the time. Will that be your

**Gaining the Proper Perspective**

Accept the fact that you, or people who come before you, made decisions to under-invest in infrastructure, maintenance programs, and financial capability. Why did they do that? Simple really. On a current cost-benefit model, keeping rates low—"it's cheaper to underfund. We haven't kept up our current cost and the risk of being something worse in the future. But we give the financial for future gains little attention. That is why a few people get rich investing in Wall Street, Microsoft, and other big winners while the rest of us haven't benefited enough, only receive the cost of investment programs as we can just enjoy our golden years. We manage our rates and don't consider the same way, some people have figured out how to place investments, interests, and risks in proper perspective. Most of us haven't, but we can learn. That helps us to make change analysis.

**What is your change analysis?** It is nothing more than a decision support tool that plans investment, return, and risk in proper perspective. The analysis doesn't set your rates for you but it does give you the information you need so you can make good investment decisions for your system. While the specific techniques of your change analysis get very complex, the underpinning is just that simple.

If you analyze your rates regularly, when there is needed, manage the systems well, and consistently risk the opportunities to make improvements, you are headed for success. Do less and avoid the harmful problems, maybe minimal problems. However, this is not to say you need to learn how to analyze your own rates.

**The authors "Proper Rates are Critical for Financial Health" and "Managing Water Rates: How are public service organizations involved?" available on the National Environmental Services Center Web site at [www.nesc.wvu.edu](http://www.nesc.wvu.edu).**

**Rate Setting is Risky Business**

If you don't have a strong background in rate analysis, you run a significant risk of doing the math wrong. More significantly, you run a larger risk of making some wrong assumptions about the variables of which can be tripping or fatal.

How do you reduce your risk of fatal errors and reduce your big risks by having an experienced analyst do the heavy lifting? You can't avoid that level of analysis to medium-sized communities that level of analysis every two to five years. In years following the big analysis, people compare your annual financial performance with what the analyst predicted then take your rates accordingly. You just achieved the best of all worlds: low investment, low risk, and high return.

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by Carl E. Brown

www.nesc.wvu.edu 3



# On Tap

Drinking Water News and Information  
for America's Small Communities

Winter 2007 • Volume 6 • Issue 4

Sponsored by USDA Rural Development

James Andrew Administrator  
Randy Plum Loan Specialist

## Rural Development

USDA's Rural Development Utilities Service strives to serve a leading role in improving the quality of life in rural America by administering its electric, telecommunications, and water and waste programs in a service-oriented, forward-looking, and financially responsible manner. Founded in 1947 as the Farmer's Home Administration, Rural Development has provided more than \$35 billion for water and wastewater projects. For more information, visit their Web site at [www.usda.gov/rus/](http://www.usda.gov/rus/).

## The National Environmental Services Center

The National Environmental Services Center (NESC) is a nonprofit organization providing technical assistance and information about drinking water, wastewater, infrastructure security, utility system management, solid waste, and environmental training to communities serving fewer than 10,000 people.

To achieve this mission, NESC offers a toll-free technical assistance hotline, hundreds of low-cost or free products, magazines and newsletters, and several searchable databases. We also sponsor conferences, workshops, and seminars. Visit the NESC Web site at [www.nesc.wvu.edu](http://www.nesc.wvu.edu) or call toll-free (800) 624-8301 and request an information packet.

NESC is located at West Virginia University, one of the nation's major doctoral-granting, research institutions.

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As I write this note, the grey skies of a West Virginia winter have descended and snow is in the forecast. Earlier this winter, Buffalo and other communities around the Great Lakes had already received significant amounts of the white stuff. Although it may be winter outside, I'm thinking about summer.

All of the articles in this issue of *On Tap* have roots in last summer. **Carl Brown** and **Jean Holloway** were both trainers at our annual Environmental Training Institute for Small Communities, held on the campus of West Virginia University each August. Their articles about rate setting ("The Future Starts Now") and capital improvement planning ("Road Map to the Future"), respectively, are derived from courses they taught at the Institute.

The Institute was also the place where the National Environmental Services Center released the results of a three-year study about training needs. We've included a summary of this study in this *On Tap*. The article "Getting Good PR Out of Your CCR" is adapted from an article published by our friends at the Rural Community Assistance Partnership in their August 2006 *e-Bulletin*.

In last summer's *On Tap*, we provided an overview of watershed approaches to environmental problems. In the current issue, I begin a four-part series exploring watershed planning in a more in-depth fashion. Over the next year, we'll explore (1) how to start a watershed

### Who We Are

A number of people are responsible for putting *On Tap* magazine together each quarter. We encourage our readers to contact us with ideas and suggestions. An e-mail address is provided for each staff member below, as well as their phone extension. Call our main number toll free at (800) 624-8301 and enter the appropriate extension at the prompt.

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### Special Thanks

Cathleen Falvey

group to tackle water quality problems, (2) methods to measure and assess watershed conditions, (3) how to turn this data into a strategic plan, and (4) techniques for putting the plan into action so that goals are met.

While these articles have their genesis in warmer months past, they are conceptually united in a vision for the future, as at least two of their titles suggest. Although rate increases are rarely popular, training programs are woefully under-funded, capital planning is complicated, and the annual consumer confidence report can be a headache, our systems, our communities, and our futures are better because of these activities.

As always, we will augment the printed material found in the magazine with additional information on our Web site ([www.nesc.wvu.edu/ndwc](http://www.nesc.wvu.edu/ndwc)). Look for the *On Tap Online* logo in the articles.



I wish you and yours a healthy and happy New Year, and encourage you to let us know how we can improve *On Tap* in 2007.

Regards,



Mark Kemp-Rye  
**On Tap** Editor



# CALENDAR of EVENTS

## MARCH

### Water Quality Association Annual Convention and Exhibition

March 27–31, 2007  
Orange County Convention Center  
Orlando, FL  
Phone: (630) 505-0160  
Fax: (630) 505-9637  
[www.wqa.org](http://www.wqa.org)



### American Society of Civil Engineers/ Infrastructure Security Partnership

#### Annual Infrastructure Security Conference

March 28–29, 2007  
Crystal City Marriott  
Arlington, VA  
Phone: (703) 295-6408  
[www.tisp.org](http://www.tisp.org)

## APRIL

### National Association of Environmental Professionals Annual Conference

April 22–27, 2007  
Holiday Inn International Resort  
Orlando, FL  
Contact: Donna Carter  
Phone: (863) 679-3852  
Fax: (501) 423-1701  
Email: [conference@naep.org](mailto:conference@naep.org)  
[www.naep.org](http://www.naep.org)

### American Backflow Prevention Association International Conference and Trade Show

April 30–May 2, 2007  
Silver Legacy Resort  
Reno, NV  
Contact: Shane Dillard  
Phone: (979) 846-7606  
Fax: (979) 846-7607  
Email: [shane@abpa.org](mailto:shane@abpa.org)  
[www.abpa.org](http://www.abpa.org)

## JUNE

### National Environmental Health Association Annual Educational Conference and Exhibition

June 18–21, 2007  
Atlantic City, NJ  
Phone: (303) 756-9090  
Fax: (303) 691-9490  
[www.neha.org](http://www.neha.org)

### American Water Works Association Annual Conference and Exposition

June 24–28, 2007  
Metro Toronto Convention Centre  
Toronto, ON  
Phone: (800) 926-7337 or (303) 794-7711  
Fax: (303) 347-0804  
[www.awwa.org/ace07/](http://www.awwa.org/ace07/)

#### *Sponsoring an event?*

If you are sponsoring a water-related event and want to have it listed in this calendar, please send information to Mark Kemp-Rye, National Environmental Services Center, West Virginia University, P.O. Box 6064, Morgantown, WV 26506-6064. You also may call Mark at (800) 624-8301 or (304) 293-4191 ext. 5523 or e-mail him at [m Kemp@mail.wvu.edu](mailto:m Kemp@mail.wvu.edu).



## JULY

### National Association of Counties Annual Conference and Exhibition

July 13–17, 2007  
Richmond, VA  
Phone: (202) 393-6226  
Fax: (202) 393-2630  
[www.naco.org](http://www.naco.org)

## SEPTEMBER

### American Public Works Association Annual Conference

September 9–12, 2007  
Henry B. Gonzalez Convention Center  
San Antonio, TX  
Contact: Dana Priddy  
Phone: (800) 848-2792 or (816) 595-5241  
Fax: (816) 472-1610  
Email: [dpriddy@apwa.net](mailto:dpriddy@apwa.net)  
[www.apwa.net](http://www.apwa.net)

Photo by Edward Savaria, Jr., courtesy of [www.pcvb.org](http://www.pcvb.org)



### Annual National Rural Water Association Convention

September 23–26, 2007  
Philadelphia, PA  
Contact: Dawn Meyers  
Phone: (580) 252-0629  
Fax: (580) 255-4476  
[www.nrwa.org](http://www.nrwa.org)

## OCTOBER

### Water Environment Federation WEFTEC '06

October 13–17, 2007  
San Diego, CA  
Phone: (800) 666-0206 or (703) 684-2452  
Fax: (703) 684-2492  
[www.weftec.org](http://www.weftec.org)



## EPA Recognizes Leaders In Water Efficiency

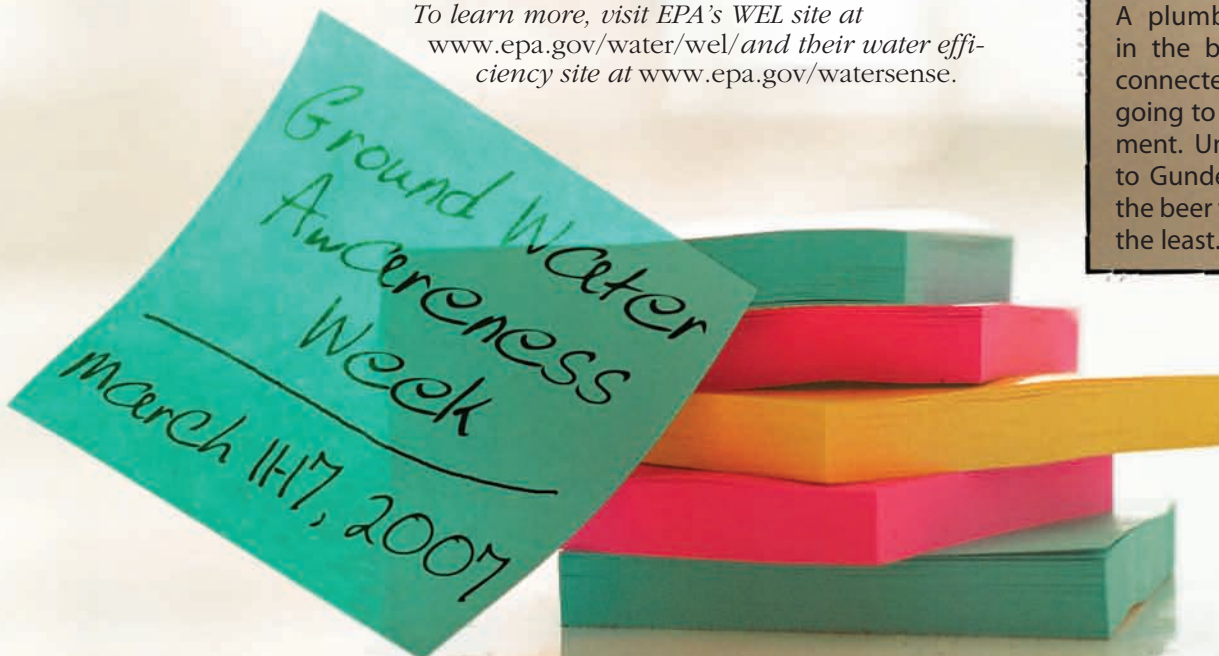
The population of the U.S. has nearly doubled over the last 50 years but water use has more than tripled. To promote more efficient use of our water resources, the U.S. Environmental Protection Agency (EPA) has developed the Water Efficiency Leader (WEL) Awards. Chosen by a panel of national water experts and based on three criteria (leadership, innovation, and water saved), winners of the first WEL Awards are:

- **TOTO USA** (Atlanta)—Large Corporation/Industry—TOTO demonstrates leadership and innovation in water efficiency through their plumbing product development, manufacturing processes, and advocacy.
- **Advanced Mobile, LLC** (Seattle)—Small Corporation/Industry—This mobile carwash company relies exclusively on sustainable and water-efficient practices.
- **New York State Funeral Directors Association** (Albany)—Organization/Teams/Associations—This group promotes an innovative technology to reduce the volume of water used in embalming from 120 to five gallons.
- **Southern Nevada Water Authority's Water Smart Program** (Las Vegas)—Utilities/Water Districts—The program is a collection of strategic initiatives in conservation programming, including progressive policies, aggressive education, and substantial incentive programs.
- **Bill Sartor of the San Antonio (Texas) Water System**—Individual—Mr. Sartor has consistently demonstrated leadership and innovation in reducing water usage in his area of the country.
- **State of Florida's Water Reuse Program**—Government/Military—This state program is a model for efficient use of water on a statewide level.

"These water efficiency stars are shining examples of cooperative conservation and innovative technology," says Benjamin H. Grumbles, assistant administrator for water. "EPA salutes these leaders for helping America save water, money, and energy for families and communities."

The WEL Awards seek to foster a nationwide ethic of water efficiency, as well as to inspire, motivate, and recognize efforts that save water. The program allows EPA to document best practices, share information, and create a network of water efficiency leaders.

To learn more, visit EPA's WEL site at [www.epa.gov/water/wel/](http://www.epa.gov/water/wel/) and their water efficiency site at [www.epa.gov/watersense](http://www.epa.gov/watersense).



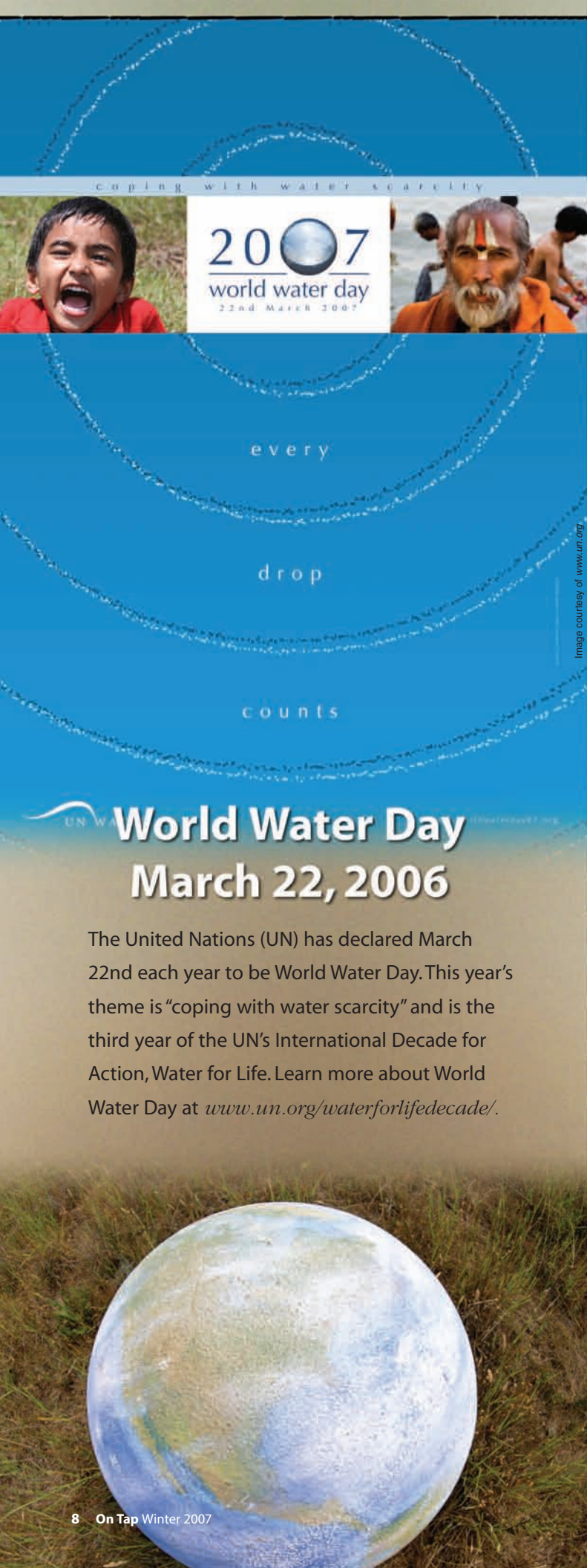
### A Different Kind of Suds in the Sink

Beer drinkers have long joked that kitchen sinks should provide access to their favorite beverage. For a family in Norway, this fantasy became a reality earlier this year.

"We had settled down for a cozy Saturday evening, had a nice dinner, and I was just going to clean up a little," said Haldis Gundersen, in a March 13, 2006, Associate Press story. "I turned on the kitchen faucet and beer came out." Meanwhile in the bar downstairs, bartenders were puzzled by water coming out of the beer taps.

A plumbing mistake resulted in the bar's beer hoses being connected to the water pipes going to the Gundersen's apartment. Unfortunately, according to Gundersen in the AP article, the beer was flat and not tasty in the least.





COPIING WITH WATER SCARCITY

2007  
world water day  
22nd March 2007

every

drop

counts

Image courtesy of www.un.org

# World Water Day March 22, 2006

The United Nations (UN) has declared March 22nd each year to be World Water Day. This year's theme is "coping with water scarcity" and is the third year of the UN's International Decade for Action, Water for Life. Learn more about World Water Day at [www.un.org/waterforlifedecade/](http://www.un.org/waterforlifedecade/).



## EPA Publishes Loan Information

Established by the 1996 Safe Drinking Water Act amendments, the drinking water state revolving fund (DWSRF) provides money to drinking water systems through state primacy agencies to finance infrastructure systems. For the current fiscal year, DWSRF funds total \$341.5 million, up four million from FY2006.

DWSRF funds may be used in many different ways. The U.S. Environmental Protection Agency provides numerous publications about the fund. Recently, the agency added the *Drinking Water State Revolving Fund: Program Operations Manual* (Provisional Edition) and the *DWSRF Guide to Understanding Audits* to the DWSRF Web site (see below). The program emphasizes providing funds to small and disadvantaged communities and to programs that encourage pollution prevention as a tool for ensuring safe drinking water.

According to EPA, "the nation's water systems must make significant investments to install, upgrade, or replace infrastructure to continue to ensure the provision of safe drinking water to their 240 million customers. Installation of new treatment facilities can improve the quality of drinking water and better protect public health. Improvements are also needed to help those water systems experiencing a threat of contamination due to aging infrastructure systems."

*For more information about DWSRF loans and requirements, visit the EPA Web site at [www.epa.gov/OGWDW/dwsrf/index.html](http://www.epa.gov/OGWDW/dwsrf/index.html), or call the Safe Drinking Water Hotline at (800) 426-4791.*

## Sustainable Infrastructure Training

The U.S. Environmental Protection Agency's Region 3 Environmental Finance Center (EFC) and the National Environmental Services Center are sponsoring a training program for small utility decision makers, officials, and managers. The pilot program will offer courses about utility finance and management in Maryland and Virginia. The times and locations of this training will be determined over the next six months.

The training is designed to educate decision makers and nontechnical system personnel about management topics related to long-term sustainability of small utilities, and to offer a certificate of proficiency after completing the program requirements.

*For more information or to check dates of course offerings, contact Jean Holloway at (410) 632-1853 or [jhollowa@umd.edu](mailto:jhollowa@umd.edu) or visit the Region 3 EFC Web site at [www.efc.umd.edu](http://www.efc.umd.edu).*

## This Water Bill's Too High

Think your water bill is too high? In November 2006, a Winston-Salem, North Carolina woman got 287 water bills totaling nearly \$20,000. According to an account published in *U.S. Water News Online*, a computer glitch was to blame and the city fixed the problem.



## RDUS Loans: Poverty Rate Unchanged; Others Down

The Rural Development Utilities Service (RDUS) recently announced interest rates for water and wastewater loans. RDUS interest rates are issued quarterly at three different levels: the poverty line rate, the intermediate rate, and the market rate. Each has specific qualification criteria.

The rates, which apply to all loans issued from January 1 through March 31, 2007, are:

- ▷ **poverty line:** 4.5 percent (unchanged from the previous quarter);
- ▷ **intermediate:** 4.25 percent (down 0.125 from the previous quarter); and
- ▷ **market:** 4.125 percent (down 0.125 percent from the previous quarter).

For this quarter, all loans will be obligated at the lower (4.125) rate. RDUS loans are administered through state Rural Development offices, which can provide specific information concerning RDUS loan requirements and applications procedures.

For the phone number of your state Rural Development office, contact the National Environmental Services Center at (800) 624-8301 or (304) 293-4191. The list is also available on the Rural Development Web site at [www.rurdev.usda.gov/recd\\_map.html](http://www.rurdev.usda.gov/recd_map.html).

## EPA Finalizes Ground Water Rule

In October, the U.S. Environmental Protection Agency (EPA) finalized the Ground Water Rule. The compliance date for the rule requirements is December 1, 2009, unless otherwise note.

The rule is intended to foster increased protection against microbial pathogens in public water systems that use ground water sources. According to EPA, the Ground Water Rule "establishes a risk-targeted approach to target ground water systems that are susceptible to fecal contamination, instead of requiring disinfection for all ground water systems. The occurrence of fecal indicators in a drinking water supply is an indication of the potential presence of microbial pathogens that may pose a threat to public health. This rule requires ground water systems that are at risk of fecal contamination to take corrective action to reduce cases of illnesses and deaths due to exposure to microbial pathogens."

For more information about the Ground Water Rule, visit EPA's Web site about the topic at [www.epa.gov/OGWDW/disinfection/gwr/regulation.html](http://www.epa.gov/OGWDW/disinfection/gwr/regulation.html) or call the National Environmental Services Center technical specialists at (800) 624-8301 and select option "3."



## Attention Manufacturers and Consultants

Are you a company or individual that offers products and services to small community water and wastewater utilities? If so, you may be interested in being listed in the National Environmental Services Center's Manufacturers and Consultants Database. To learn more about this service, call NESC's technical assistance staff at (800) 624-8301 and select option "2."


## Ground Water Awareness Week, March 11-17, 2007

The National Ground Water Association encourages yearly water testing and well maintenance during Ground Water Awareness Week. Just as you seasonally check your furnace or smoke detector batteries, spring is a good season to have an annual water well checkup before the peak water-use season begins.

For more information about Ground Water Awareness Week see [www.ngwa.org/awareness/aware.cfm](http://www.ngwa.org/awareness/aware.cfm).



## Watershed Info on the Web

There are numerous Internet sites devoted to watershed issues. The sites marked with a  are ones that National Environmental Services Center staff find especially helpful.

### Natural Resources Conservation Service

[www.nrcs.usda.gov](http://www.nrcs.usda.gov)

The Natural Resources Conservation Service (NRCS), formerly called the Soil Conservation Service, provides information for those involved in watershed planning and source water protection.

According to the NRCS Web site, “communities and local governments work with NRCS state offices and local USDA [U.S. Department of Agriculture] Service Centers to help them protect their natural resources. NRCS also provides information on climatology, water management, watershed planning, and flood control. A coalition of state conservation agencies, The National Association of State Conservation Agencies, provides guidance and operates state environmental, sediment control, and soil erosion prevention programs. The Resource Conservation and Development program focuses on improvement of quality of life achieved through natural resources conservation and community development. NRCS can provide grants for land conservation, water management, community development, and environmental needs in designated areas.”

The site features information on community planning, water quality, water management, water supply, watershed protection, and flood prevention. Watershed planners will want to download the *National Watershed Manual* ([www.nrcs.usda.gov/programs/watershed/NWSM.html](http://www.nrcs.usda.gov/programs/watershed/NWSM.html)). Those involved with source water protection should visit the National Water Management Center ([wmc.ar.nrcs.usda.gov](http://wmc.ar.nrcs.usda.gov)).



### National Watershed Coalition

[www.watershedcoalition.org](http://www.watershedcoalition.org)

The National Watershed Coalition is a membership organization made up of national, regional, state, and local organizations, associations, and individuals, that advocate dealing with natural resource problems and issues using watersheds as the planning and implementation unit. Their Web site provides information about watersheds, legislation affecting watersheds, and various brochures and reports.

## The U.S. Environmental Protection Agency

[www.epa.gov](http://www.epa.gov)

The U.S. Environmental Protection Agency (EPA) provides a variety of information about watersheds, watershed planning, and funds for undertaking watershed projects.

### Funding

[www.epa.gov/owow/funding.html](http://www.epa.gov/owow/funding.html)

### Discussion Forum

[www.epa.gov/watershedforum/](http://www.epa.gov/watershedforum/)

### Tools

[www.epa.gov/owow/watershed/tools/](http://www.epa.gov/owow/watershed/tools/)

### Training

[www.epa.gov/owow/watershed/wacademy/](http://www.epa.gov/owow/watershed/wacademy/)

### Section 319 Nonpoint Source Program Grants

[www.epa.gov/owow/nps/cwact.html](http://www.epa.gov/owow/nps/cwact.html)

### Targeted Watersheds Grants Program

[www.epa.gov/owow/watershed/initiative](http://www.epa.gov/owow/watershed/initiative)

### Watershed Approach Framework

[www.epa.gov/OWOW/watershed/framework/html](http://www.epa.gov/OWOW/watershed/framework/html)





## Center for Watershed Protection

[www.cwp.org](http://www.cwp.org)

The Center for Watershed Protection is a nonprofit organization that provides local governments, activists, and watershed organizations around the country with the technical tools for protecting streams, rivers, and lakes. The center has created and distributed a multidisciplinary strategy for watershed protection that encompasses planning, restoration, research, site design, education, outreach, and training. The site includes a calendar of events, publications, listing of watershed projects, technical tools for assessing and protecting watersheds, and a watershed quiz.

## The River Network

[www.rivernetwork.org](http://www.rivernetwork.org)

River Network is a national nonprofit organization working for clean and healthy waters. The Portland, Oregon-based organization supports grassroots groups working for watershed protection. Their Web site includes a resource library, networking opportunities, and information about the Network's services such as training and consultation.



## The Chesapeake Bay Program

[www.chesapeakebay.net](http://www.chesapeakebay.net)

This program is a regional partnership of various state, federal, academic, and local watershed organizations that builds and adopts policies supporting restoration of the Chesapeake Bay. Their Web site features an information clearinghouse, publications, maps, and data.

## Infrastructure Security Training on the Web

[www.dhs.gov/nipp](http://www.dhs.gov/nipp)

"The terrorist attacks of September 11, 2001, raised the nation's awareness of the potential vulnerability of our critical infrastructure and key resources and of the need for a unified and coordinated approach to their protection," says Barbara Yagerman with the U.S. Department of Homeland Security's (DHS) Office of Infrastructure Protection. "Uninterrupted operation of basic services, such as energy, communications, water, and transportation, and unbroken access to other goods and services used on a daily basis are essential to America's security, safety, economic vitality, and way of life."

*Introduction to the National Infrastructure Protection Plan* (NIPP) is a Web-based course developed by the DHS Office of Infrastructure Protection and the Federal Emergency Management Agency (FEMA) Emergency Management Institute. The course provides an orientation regarding the key concepts of the NIPP and is designed to meet the training needs of a wide range of government and private sector security partners involved in implementing infrastructure protection programs.

The course addresses the importance of protecting the nation's critical infrastructure and key resources and provides an overview of many of the key concepts of the NIPP, including: the risk management framework, the partnership model designed to facilitate coordination and cooperation between infrastructure owners and operators and the government, the networked approach to information-sharing, and the new risk-based approach to resource allocation. It describes the 17 sector-specific plans that address the particular needs of each sector, including the water sector, and it underscores the opportunities and benefits of participation.

The course is available free of charge and may be accessed through the EMI Independent Study Web site at <http://training.fema.gov/EMIWeb/IS/crslist.asp> (select course number IS-860). The course can be taken for certificate credit or for information purposes only.





Each issue, we ask members of the *On Tap* Editorial Advisory Board to answer a drinking water-related question. We then print as many responses as space permits. The opinions expressed are not necessarily those of NESCA.



Many communities know that their water rates are too low, but they are reluctant to raise rates to appropriate levels. After all, higher fees are never popular with customers. Another, often overlooked, aspect of these increases is that a state regulatory body usually must approve them.

**Q: Which is more difficult: raising the rates or getting the increase approved by the state public service commission?**

**What are some ways to make implementing rate increases easier?**

#### Editorial Advisory Board

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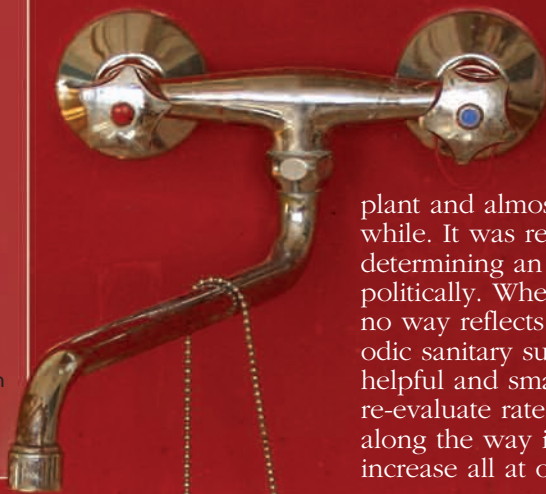
Water Supply Division Director  
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Environmental Conservation

##### Amy Vickers

Engineer and Water Conservation  
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#### You Won't Win a Popularity Contest

I may not be qualified to answer this question because I've never been involved in the approval process with the public service commission. However, when I worked as an operator with the City of Helena, Montana, the city built a new surface water treatment plant and almost doubled the rates. We were unpopular for a long, long while. It was relatively easy to do the math—projecting the costs and determining an appropriate water rate. It was just not popular nor easy politically. When I look at rates for many small communities, I see it in no way reflects the real cost of operating the system. I think that periodic sanitary surveys that take an overall look at the operation are very helpful and small systems should use that three- to five-year interval to re-evaluate rates on a periodic basis and make needed adjustments along the way instead of hitting customers with a 100 percent (or more) increase all at once.



**Kevin Kundert**

President and Chief  
Instructional Systems  
Mechanic

eTRAIN ONLINE, Inc.

## Raising Rates Is Never Easy

In Washington, the procedure for increasing rates varies depending system ownership, as does the rate of success. The easiest process for getting rate increases approved has been with our nonprofit managed systems. Typically, it requires meeting with board members to discuss cost of service and necessity for a reserve account, and voting. By contrast, conducting a cost of service study and increasing rates and fees for our owned systems has been next to impossible, even though we have the ability to do it in-house.

As a struggling nonprofit water utility within a financially solvent electric company, it has been extremely hard to propose a rate increase. Since the first rates were adopted in 1996, there has been an increase in 2000 and another in 2003. The company had a consultant recommend the last rate increase. Our rates consist of a single base rate (not meter size dependent) with six tiers (too many, in my opinion). Most customers are within the first two tiers, even during the summer.

Since the last rate increase, staff have had salary increases each year, gas prices continued to rise, material costs increased, and interest expense paid on debt water owed the company more than doubled. We have also completed necessary significant capital improvements on several systems, all without an increase in rates or connection fees. Most recently, meter reading was outsourced at more than double the cost.

Investor owned systems have to submit annual financial reports and prepare cost of service rate studies to change their tariff (procedures, rates and fees) to the Washington Utilities and Transportation Commission (WUTC). Working with WUTC accountants is not easy. In my opinion, they do not have a standard submittal process, nor are they clear about what they want, but they have the ability to propose significant changes after lots of time is spent developing proposed rate increases. WUTC is not as assistance-oriented as other state regulatory agencies. Despite the lack of technical guidance, we have successfully completed three tariff filings in five years.

To improve the rate increase process, I offer the following recommendations:

- 1** Connection fees and minimum base rates should be based on equivalent residential units and meter capacity, respectively.
- 2** Tiers should be minimized and send a clear water conservation and efficiency message. Three easy tiers to explain to customers are ones that establish a reasonable winter and summer use, plus an excessive rate tier.
- 3** For nonprofit water systems, if the cost of service increases, rates should increase proportionally. Not increasing rates only forestalls the inevitable and requires that customers pay a higher future rate.
- 4** Utilities should consider adopting a reasonable annual increase reflective of the cost of living increase, along with immediately adopting surcharges for significant capital improvements that sunset once debt is paid off.
- 5** Rates should be paying down debt, if any, and build a reserve for replacing capital facilities.



**Lisa Raysby, P.E.**  
Water Engineer  
Peninsula Light  
Company



## To the Editor,

While reading through the summer *On Tap*, I couldn't help but be incensed at the article, "Making Water Through Cloud Seeding." Apparently, humans have screwed up the environment so much that now we need to inject chemicals into the atmosphere to increase the amount of snow that falls in the mountains of Arizona, Utah, and six other states to replenish the water in the Colorado River.

Could it be that humans are taking too much water from the Colorado River? To be used for what: Irrigating lands that were not meant to grow the crops that are grown on them? Watering grass in the heat of the Southwest? Washing cars? Flushing toilets with one tissue in them? To produce energy by damming up the great Colorado for places like Las Vegas? To make energy for restaurants to run their air conditioning at 65 degrees in the middle of summer?

I am sick of humans interfering with the environment to such an extent that we resort to creating snow in the mountains. How about the animals that live in those mountains? What effect does this have on them? Typically, humans, think of themselves, no sacrifices for them, but everything else, including the environment must pay.

As for the news item titled "Concern for Environment Wanes," maybe it's because the political pundits, the news media, and our current Washington administration all have it on the back burner. No one hears of mercury in the air and water. No one hears of wolves in Alaska being shot, bison in Yellowstone and Montana being killed, mountain top mining blowing off the tops of mountains in West Virginia causing huge environmental catastrophes, sonar testing in the oceans causing whales to beach themselves, over-fishing in the oceans, entire lakes drying up, on and on and on. If the truth was on the front burner as much as TomKat, we would all be better informed and concern for the environment would not be last on the list.

**Karen Ash**

Maumee, Ohio

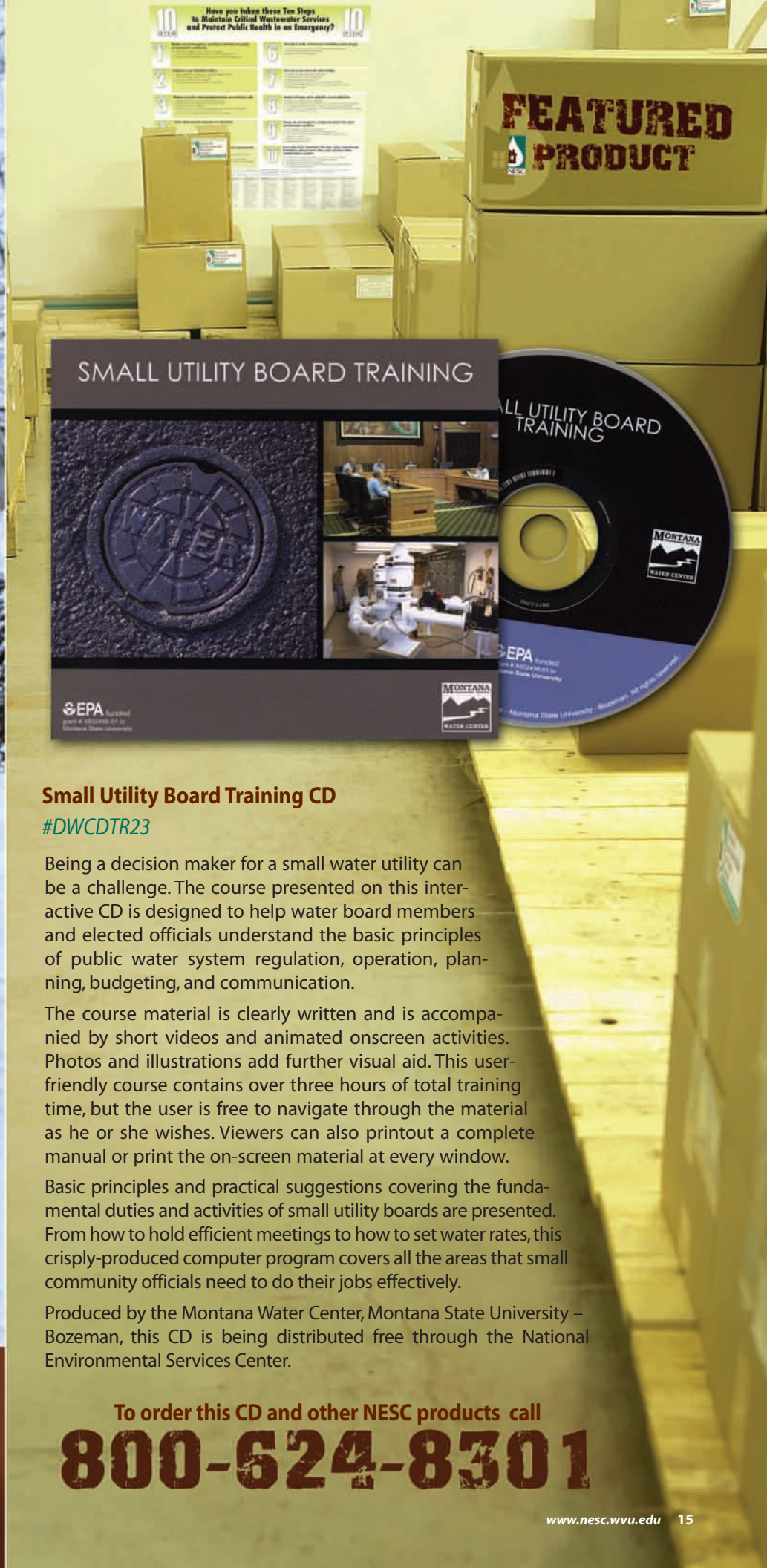
## Editor's Response

*Thank you for writing to On Tap. Obviously, we wish that everyone had the utmost concern for the environment. One of the themes that we've repeated often in our magazine over the years can be encapsulated by Ben Franklin's old adage "an ounce of prevention is worth a pound of cure." With respect to specific news items, readers should keep in mind that we try to report information related to drinking water. We aren't necessarily advocating cloud seeding but thought it was something our readers should know.*

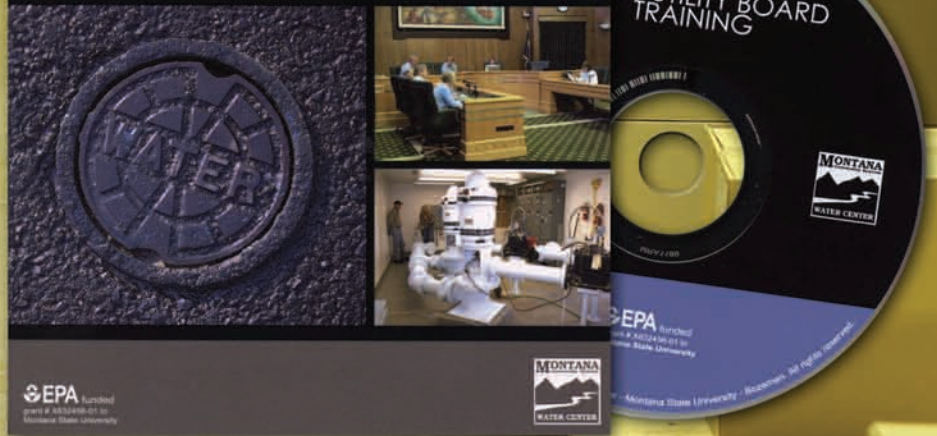
## We're all ears!

Do you have a suggestion for improving this magazine or a great idea for an article we should explore? Do you have a question for our "Ask the Experts" column or a Web site that you find particular helpful? *On Tap* editors are always eager to learn from you. Here's how you get ahold of us:





## SMALL UTILITY BOARD TRAINING



### Small Utility Board Training CD

#DWCDTR23

Being a decision maker for a small water utility can be a challenge. The course presented on this interactive CD is designed to help water board members and elected officials understand the basic principles of public water system regulation, operation, planning, budgeting, and communication.

The course material is clearly written and is accompanied by short videos and animated onscreen activities. Photos and illustrations add further visual aid. This user-friendly course contains over three hours of total training time, but the user is free to navigate through the material as he or she wishes. Viewers can also print out a complete manual or print the on-screen material at every window.

Basic principles and practical suggestions covering the fundamental duties and activities of small utility boards are presented. From how to hold efficient meetings to how to set water rates, this crisply-produced computer program covers all the areas that small community officials need to do their jobs effectively.

Produced by the Montana Water Center, Montana State University – Bozeman, this CD is being distributed free through the National Environmental Services Center.

To order this CD and other NESC products call

# 800-624-8301

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# The Future Starts **NOW**

## Setting Rates Helps Systems Today and Tomorrow

By **Carl E. Brown**, President  
Carl Brown Consulting, LLC

**I**t's all about the money. It has always been all about the money. If it weren't all about the money, all water and sewer systems would run great all the time. We would have no need for National Environmental Services Centers, grant and subsidized loan agencies, rural water associations, and all the rest. We would have nothing but well-funded, self-sustaining water and sewer systems cranking out great service round the clock. And how would they come to be well funded?

#### *Great rates.*

If rate setting were easy, all systems would have great rates. Well, I'm here to tell you that you **can** have great rates and it doesn't have to be hard, on your part.

This article will outline a thought and action process that uses hard facts for making good decisions about how to set rates properly. Maybe you will end up doing the analysis yourself, especially if you represent a very large or a very small system. Otherwise, you will hire a specialist to do the heavy lifting for you.

#### **Just the Facts**

Whether you decide to analyze rates yourself or use outside help, here are some facts to consider:

**FACT:** *Water and sewer utilities are businesses.* If run and financed well, they become invisible wonders providing excellent service. If not, they become very visible sources of trouble for a community.

**FACT:** *All decisions are investment decisions.* You are making them all the time—sometimes well, sometimes not.

**FACT:** *All investment decisions boil down to three basic questions: What must I invest? What return do I expect? What is the risk that I won't get what I expect?* Such decisions should be supported with data and estimates of outcomes.

**FACT:** *According to the U.S. Environmental Protection Agency, water and sewer utilities in the U.S. are facing a funding shortfall of hundreds of billions of dollars by 2020.* The federal and state governments will bail out a few ailing systems, at least temporarily. Some systems will actually fail. (Failures will probably occur over a long time so we won't really notice it.) Some will be gobbled up by other systems or companies. Some will do the gobbling.

Your system is going to (and maybe already has) hit a funding shortfall. Unless you have been calling the shots for your system for 20 or 30 years, it's not all your fault. But the final failure will be blamed on whoever is in charge at the time. Will that be you?

#### **Gaining the Proper Perspective**

Accept for now that you, or people who came before you, made decisions to under-invest in infrastructure, management prowess, and financial capability. Why did they do this? Simple, really. On a current cost basis—read “keeping rates low”—it's cheaper to under-fund. We human beings normally give current cost and the risk of losing something plenty of attention. But we give the potential for future gains little attention. That is why a few people got rich investing in Wal Mart, Microsoft, and other big winners while the rest of us haven't invested enough, early enough in our retirement programs so we can just enjoy our golden years. We manage our water and sewer utilities the same way. Some people have figured out how to place investment, return, and risks in proper perspective. Most of us haven't, but we can learn. That brings us to user charge analysis.

What is user charge analysis? It is nothing more than a decision-support tool that places investment, return, and risk in proper perspective. The analysis doesn't set your rates for you, but it does give you the information you need so you can make good investment decisions for your system. While the specific techniques of user charge analysis get very complex, the underpinning is just that simple.

If you analyze your rates regularly, adjust them as needed, manage the systems well, and continually look for opportunities to make improvements, you are headed for success. Do less and you are headed for problems, maybe terminal problems. However, this is not to say you need to learn how to analyze your own rates.



The articles “Proper Rates are Critical for Financial Health” and “Increasing Water Rates: How are Public Service Commissions Involved?” are available on the National Environmental Services Center Web site at [www.nesc.wvu.edu/ndwc](http://www.nesc.wvu.edu/ndwc).

#### **Rate Setting Is Risky Business**

If you don't have a strong background in rate analysis, you run a moderate risk of doing the math wrong. More significantly, you run a huge risk of making some wrong assumptions along the way, some of which can be crippling or fatal.

How do you reduce your risk of loss? Control and reduce your big risks by having an experienced analyst do the big, all-encompassing analyses for you. Most small- to medium-sized systems need this level of analysis every two to five years. In years following the big analysis, simply compare your actual financial performance with what the analysis predicted, then adjust your rates accordingly. Voila! You just achieved the best of all worlds: low investment, low risk, and high return.





# RISK:

## Who Does it Hurt?

If you are a single person with no heirs and no one who would be affected by your death, you really have no need for life insurance. We buy insurance to protect from the risk of loss those we would leave behind.

A father and mother of five small children have a large need to protect their heirs. While they are not at high risk of dying, the potential cost to their children is great. If they happen to be wealthy, they don't need insurance. They are self-insured by their own means. If these same parents and children have little wealth, life insurance is exactly what they need.

Water and sewer systems have much at risk. These systems are expensive to build, operate and maintain. They have many "heirs" (current ratepayers and one or more generations of ratepayers to come) who depend on those systems. Setting your rates incorrectly is not a fatal action in itself but it can lead to other fatal or crippling actions.

Now you're thinking, "OK, what is this high return going to cost me?" Of course, that all depends on your specific situation, but the following should give you a basic idea of what to expect in a professional rate analysis.

A professional rate analysis may result in the fees collected by a 500-user water or sewer system to go from \$150,000 per year to \$202,500 during the year after the analysis. That is an increase of \$52,500 or 35 percent. The system would pay the specialist about \$4,000 for the analysis, or 7.6 percent of the first year's extra revenues. After paying the analyst, the system would net an additional \$48,500 in its first year after rate adjustment and the full \$52,500 each year after that until the next analysis is done.

In this scenario, the first year return on investment would be more than 1,200 percent and would go up by more than 1,300 percent each year after that. These returns do not include any future inflationary increases the analyst would probably recommend. (The first year return on investment for smaller systems is normally a few hundred percent on the low end.) In other words, the system will pay to the analyst for about 28 days the additional rate revenues that the analyst enabled them to collect. From day 29 forward the system will pocket the rest of the additional income.

Of course, there is no free lunch. The ratepayers pay the cost whichever way you go. However, as a result of the analysis, the ratepayers get a system that is more assured of proper funding, and that makes excellent operations and service to them possible.

### The Pain Threshold

A few of you got stuck on the "fee increase of 35 percent" statement above. Here is why many systems need to raise their rates and fees about 35 percent.

The typical small- to medium-sized water or sewer system's management operates on the "pain threshold" principle. All people have several thresholds of pain. Water and sewer systems are run by people so they have thresholds, too. Most decision-makers will try to "suck it up" in the form of making their operators scrimp on operating costs, equipment repair and replacement, and the like before they will consider undergoing the pain of pushing through a rate increase. For many small systems that threshold equates to about a 20 percent rate increase. The upper threshold is about 45 percent. Beyond that, most managers just can't stand the pain of scrimping any longer, so they fix the problem: they raise rates.

When management finally succumbs to the pain and raises rates, they usually don't raise rates all the way up to where they need to be. They stop 10 percent or so short in an effort to go easy on the ratepayers, salvage their reelection bid, or whatever. In addition, everyone smarts so badly from the rate increase pain that no one wants to go through that again for several years, if ever. Inflation happens and new things need to be built, and, thus, the downward spiraling cycle never really stops. We need to break this cycle and chart a new rate setting course.

How can you achieve low investment, low risk, and high return in a user charge analysis? You must select the right specialist, invest wisely (pay an appropriate fee), and guide and support them well. Fortunately, this part of the process is easy and pain-free for anyone who has the authority to do it, who has their heart in the right place, who is well reasoned, and who can follow a step-by-step process.

### The Politics of Rate Increases

Why don't systems already have great rates? Consider this final fact. Attempting to do the analysis and propose the big catch-up rate increase on your own could end your office tenure or career. This risk is real. The mayor of one of my recent client cities got voted out of office over a rate increase he proposed a few months ago. Trying to serve his city to the end, he hired me to do rate studies to get to the bottom of their rate problems before he left office. I had the benefit of lots of data, number crunching, and experience to determine the proper structure for this city's rates and fees. But the mayor actually got the funding level about right in the adjustment he proposed. Thus, my results proved him to be mostly right on the rate adjustment issue, but he was still wrong on the getting re-elected issue.

How do you get great rates and not get voted out of office or get fired? Try this. (It's weasel but it works.) Get the right specialist with broad shoulders to analyze your rates, then blame him or her for the rate increases they say you have to adopt. Raise your rates all the way up to where the analyst says. At the same time, tell your

*Continued on page 35.*





**P**ine Haven is a small town in the northeast corner of Wyoming near Devil's Tower and the Black Hills. Over the last few years, Pine Haven has been discovered by retirees, summer home buyers, and energy field workers, and the population has grown by a whopping 12 percent per year.

You might think that Pine Haven's water and sewer systems are rolling in the cash: rapid growth to fuel tax receipts and rate revenues, but you'd be wrong. Their rates have been too low for many years. In fact, they are not even high enough to cover all their current operating costs. Twelve percent annual growth also means flow through the water and sewer systems doubles about every six years. Just try to keep your system providing a respectable level of service faced with that kind of growth. Pine Haven's debt service to fund new construction is slated to balloon.

Things looked dire for the town. The ratepayers thought they would really take it on the chin with unaffordable rate increases. A water and sewer rate analysis revealed the facts of the situation and pointed the way to solutions. Recent rate increases generally fixed the financial problems on a gross revenue basis, but they weren't getting the right amount of revenue from users of various sizes. In other words, the rate structures were not very equitable. Rates still needed to go up to the high-end users. But some low-end user's rates actually needed to go down. The analysis proposed new rates that will now be adequate for a long time, fair to the ratepayer classes, and affordable. Best of all, assured adequate funding will enable the city to continue providing good service and accommodate continued growth.

After the analyses were complete, Pine Haven officials remarked that several other towns they know of are worse off than Pine Haven was before rate adjustments, but those towns show no interest in fixing those problems. Alas, they have experienced a most common situation—cities and districts are in bad shape and they don't know it, or they sense it but they don't want to face the cold hard facts. This problem won't fix itself, as another client discovered the hard way.

This city, which will remain nameless, was facing financial ruin, literally. Its total annual budget was about \$12 million. Toward the end of fiscal year 2006 it became clear the city would bring in only about \$10 million. The numbers are big but the math is easy. Emergency analyses showed many things that needed to be changed in this city. Chief among them, their water and sewer rates were too low. Their operating costs were about \$3.5 million per year but revenues only totaled about \$2.6 million. That's a shortfall of about \$1 million every year to cover operating costs and several hundred thousand dollars more to cover debt service for future capital improvements that are needed. So, rates had to go up substantially, but they remained affordable.

Between those rate increases and some cost saving measures, the city will be fine in about two years. Unfortunately, many city employees had to lose their jobs, and lots of needed projects have been postponed to get the city out of this fix. The ratepayers always pay. In this case it will be in reduced service for several years.

*Read more about Pine Haven at [www.carlbrownconsulting.com/PineHaven.htm](http://www.carlbrownconsulting.com/PineHaven.htm).*







# Launching a WATERSHED

Getting a Proper Start Improves



Getting Started • Assessing Your Watershed • Crafting a Plan • Putting the Plan to Work

**Editor's Note:** Many experts see watershed planning and management as being the most effective way to deal with water and wastewater issues. In *On Tap* during 2007, we will present a four-part series about watersheds that will provide an overview about how to start a watershed initiative, how to assess problems, how to develop a workable plan, and how to implement these watershed efforts. This article is the first of the series.





# WATER QUALITY PLAN

By Mark Kemp-Rye,  
*On Tap* Editor


## How Results Down the Road



**M**aybe the local creek is fouled by wastewater from straight pipes. Or maybe acid mine drainage has killed all the wildlife in the waterway. Perhaps runoff from agricultural fertilizers and pesticides is to blame. Whatever the case, many communities around the country are looking to a watershed approach as a way to address ongoing pollution problems in their rivers, lakes, and streams. It's a strategy that makes a lot of sense, given the nature of water pollution in the decades after the Clean Water and Safe Drinking Water Acts were first passed.

According to the U.S. Environmental Protection Agency (EPA), "Thirty years ago, most water quality problems were linked to discharges from factories and wastewater treatment plants. Today, however, 40 percent of our nation's waters do not meet their water quality goals from streets, farms, mines, yards, parking lots, and other nonpoint sources of pollution. Solving these problems requires the commitment and participation of stakeholders throughout our communities."

Although the specifics of the water quality situation will vary from place to place, one feature that nearly all successful watershed efforts have in common is a core group of individuals with a commitment to achieving a solution.



For an introductory article about watersheds, see the article "Watershed Approach Helps Mend Waterways" on the NESC Web site at [www.nesc.wvu.edu](http://www.nesc.wvu.edu).

### Getting Started

Evan Hansen has worked with water quality and watershed projects in Massachusetts, California, and West Virginia. As a consultant with Downstream Strategies and president of the Friends of Deckers Creek watershed group in Morgantown, West Virginia, Hansen understands that most watershed efforts begin with a problem. (See the article on page 25 for more information about the Friends of Deckers Creek.)

"Watershed groups usually start because a situation, such as pollution, has developed to the point that it can no longer be ignored," he says. "Beyond recognizing that there's a problem, though, is the realization that something can be done. The real work begins when a group makes the decision to pull together to find a solution." Ideally, a wide cross-section of the community will want to be involved. But Hansen observes that these projects often fall on a "superstar volunteer" who is willing to devote a great deal of time to the cause.





# WATERSHED PLANNING CHECKLIST

The first part of a watershed management plan is to get an idea of “where we are now and where we want to go.”

- ✓ Identify the driving forces.
- ✓ Identify the geographic scope of the effort.
- ✓ Identify the community’s key issues and goals.
- ✓ Determine the level of stakeholder involvement needed.
- ✓ Form partnerships after deciding who to include initially.
- ✓ Itemize goals and objectives for addressing community concerns.
- ✓ Develop a problem statement regarding priority issues to be investigated, assessed, and managed during this part of the process.
- ✓ Conduct outreach on how the approach will be carried out and how stakeholders can participate.

Source: U.S. Environmental Protection Agency, *Engaging and Involving Stakeholders in Your Watershed*

Some organizations refer to the leader of this sort of project as a “sparkplug,” because he or she provides the motivation to get things moving. “The ‘sparkplug’ is the indispensable ingredient for a community project,” says Christopher Conway with Small Towns Environment Program and one of the authors of *The Self-Help Handbook for Small Town Water and Wastewater Projects*. “This is the person or persons—sometimes there are two or three, but rarely more than that—who takes responsibility for galvanizing support for the project and defining it in terms of local volunteers and other resources that will get the job done.

“This does not mean that the sparkplug has to do everything him or herself,” Conway continues. “Rather, the sparkplug energizes and organizes other residents who bring their time and talents to the endeavor.” Because a project like watershed restoration can be a long-term endeavor, this person should also have a strong commitment to the effort and the tenacity to see it through.

Once a problem has been identified, the core team faces several tasks. (See the sidebar above for a to-do list.) Basically, the group must answer a series of questions. How will the group be organized?

What are the initial goals of the project? What is the geographic scope? What are the community’s concerns and how will they be addressed? Who are some likely partners? When and how will the larger group of stakeholders be involved? What information about the watershed already exists? Of course many things will change over the duration of the project. At this stage, however, the group should have a clear sense of who it is, what it hopes to accomplish, and how it can involve others to achieve its goals.

According to the *User’s Guide to Watershed Planning in Maryland*, “The first step in the watershed planning process analyzes watershed conditions to develop clear consensus among stakeholders on the goals, objectives, and indicators that will guide watershed planning. The process starts by examining the existing regulatory, programmatic, and scientific information that will influence the planning process. The core team should also consider its local capacity, existing data, and stakeholder concerns when setting goals.”

Hansen recommends getting as much information as possible as early as possible. Usually, a wealth of information can be found in federal, state, and local government studies, as well as sources in the community such as newspapers and environmental groups. “Don’t waste time and resources reinventing the wheel,” Hansen says. “Use available data to better understand the issues and to set realistic goals.”

## The More the Merrier

The prevailing wisdom is that watershed groups should involve stakeholders (e.g., interested citizens, community groups, government agencies) from the beginning. Keep in mind, however, that unless you have some idea of what you’re doing and how you intend to do it, meetings will lack focus and potential supporters can become disillusioned. As outlined above, the core group should perform certain tasks before opening up the process.





Photo by Scott Bauer, www.ars.usda.gov

## WHY WATERSHED PLANS FAIL

The Center for Watershed Protection has identified six primary reasons that watershed plans fail:

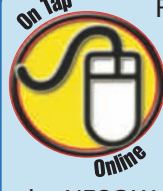
- 1 Planning activities were conducted at too great a scale.
- 2 The plan was a one-time study rather than a long-term management process.
- 3 Stakeholder involvement and local ownership were lacking.
- 4 The plan skirted land-use/management issues in the watershed.
- 5 The document was too long or complex.
- 6 Recommendations were too general.

Source: The Center for Watershed Protection

“Once you’ve determined why you’re undertaking a watershed planning or management initiative, it is important to examine your organization’s internal goals and objectives regarding the project,” the Center for Watershed Protection notes in *A User’s Guide to Watershed Planning in Maryland*. “Addressing this issue before involving stakeholders will help you determine which stakeholders need to be involved based on your goals and objectives.”

Nevertheless, stakeholders should be involved as early as is logical and feasible. “A larger group of people will have a larger set of ideas and more approaches, which can lead to better solutions,” Hansen says. “The more resources you have available to the project, and the more buy-in you have from people and groups in the community, the greater your chance for success.”

**On Tap** For more information about working with stakeholders and message development, see the articles “Getting Citizens Involved” and “Accentuate the Positive” on the NESc Web site at [www.nesc.wvu.edu](http://www.nesc.wvu.edu).



EPA strongly encourages participation from the community in the broadest sense. In the guide *Engaging and Involving Stakeholders in Your Watershed*, the agency presents a compelling argument: “The move toward integrated, holistic watershed management has meant that more attention must be paid to factors beyond the water body itself—how land is used, what type of vegetation or other cover it has, and how it is managed,” EPA notes. “Such an approach requires the involvement of landowners, developers, farmers, urban government, homeowners, recreational groups, and other constituents in the watershed if real progress is desired.”

Related to stakeholder involvement is getting help through partnerships with other organizations. The basic idea is to get a variety of people from different groups working on the project. When crafted correctly, partnerships can:



## AN OUNCE OF PREVENTION

Most watershed projects develop as a way to address a problem. But it doesn't have to be that way. "The most compelling reason to create watershed plans is because small communities often have an excellent opportunity to protect their water resources prior to development rather than trying to restore them after degradation of water quality has occurred," observes Chris Swann, watershed planner with the Center for Watershed Protection. "A local watershed management plan is arguably the best and most comprehensive tool to protect streams, lakes, and estuaries from the cumulative impact of land development." If your community is blessed with excellent water quality, a watershed organization might provide a good mechanism for keeping it that way.

Photo by Pedro Ramirez Jr, www.fws.gov

- further increase participation and buy-in;
- supply more information for the project; and
- provide more resources to the project, in terms of volunteers and potential release time for employees with similar duties (e.g., state workers).



For more information about land-use planning and watersheds, see the article "Land Conservation" on the NESC Web site at [www.nesc.wvu.edu](http://www.nesc.wvu.edu).

Hansen reports that state agencies will, occasionally, devote staff time to help watershed projects once they are up and running. "This kind of assistance can be extremely helpful," he says.

Partners that might be involved in a watershed project include: state agencies (e.g., department of environmental protection, community development offices); nonprofit services providers (e.g., the National Environmental Services Center, the Rural Community Assistance Partnership); environmental groups (e.g., Sierra Club, Trout Unlimited); extension service (the university-based USDA program with offices in every county in the U.S.); and local businesses (e.g., banks, outdoor recreation).

### Getting the Word Out

We live in the "Information Age," but many worthy projects flounder because participants don't adequately address communications efforts. The savvy watershed group will create a communications plan and consider ways to publicize their efforts in the community.

According to Model Institutions for Excellence's *Communications Cookbook*, a good communications plan should include:

- Goals—Define clearly what the watershed group wants and plans to accomplish.
- Audience—Who is the group trying to inform?
- Messages—What does the group want the audience to know? Carefully think through what the content of messages will be.
- Implementation—How will the group convey messages to their audiences? What is the best way to achieve these goals?
- Materials—Develop materials that will clearly state the message and capture the audience's attention.
- Outcomes—Inform the public about what the expected outcomes are of plans implemented by the group.

Once you feel comfortable with your communications plan, it's time to let people know what you're doing. Getting the word out can be accomplished in a number of different ways:

- Newsletters—If there's enough interest in a project, a newsletter can be invaluable. These range from multi-page, commercially printed productions to two-sided photocopies (remember to leave room for the mailing address).
- Web site—More and more, communities are turning to the Internet to post information. Setting up a Web site has never been easier. Once it's up and running, updates can be made and there are no printing or mailing costs.
- Cable—Most cable television companies have a channel devoted to community events. This is typically a free service.
- TV and Radio—Radio and television stations make public service announcements about public events.

*Continued on page 26.*





# With a Little Help From My Friends

## Friends of Deckers Creek Restore Watershed

**Editor's Note:** In each segment of the four-part series about watershed groups, we'll show how the Friends of Deckers Creek, a successful watershed organization in West Virginia, has implemented the ideas presented in their restoration efforts.



Local legend has it that Deckers Creek was one of the finest trout streams in the East during the 18th and early 19th centuries. By the end of the 20th century, though, the creek, which runs through two counties in northern West Virginia, was a stinky, orange mess. Fouled by acid mine drainage, industrial waste, and raw sewage, Deckers was categorized "severely impaired" by the state Department of Environmental Protection and, for most of its length, nearly devoid of life.

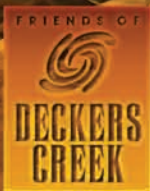
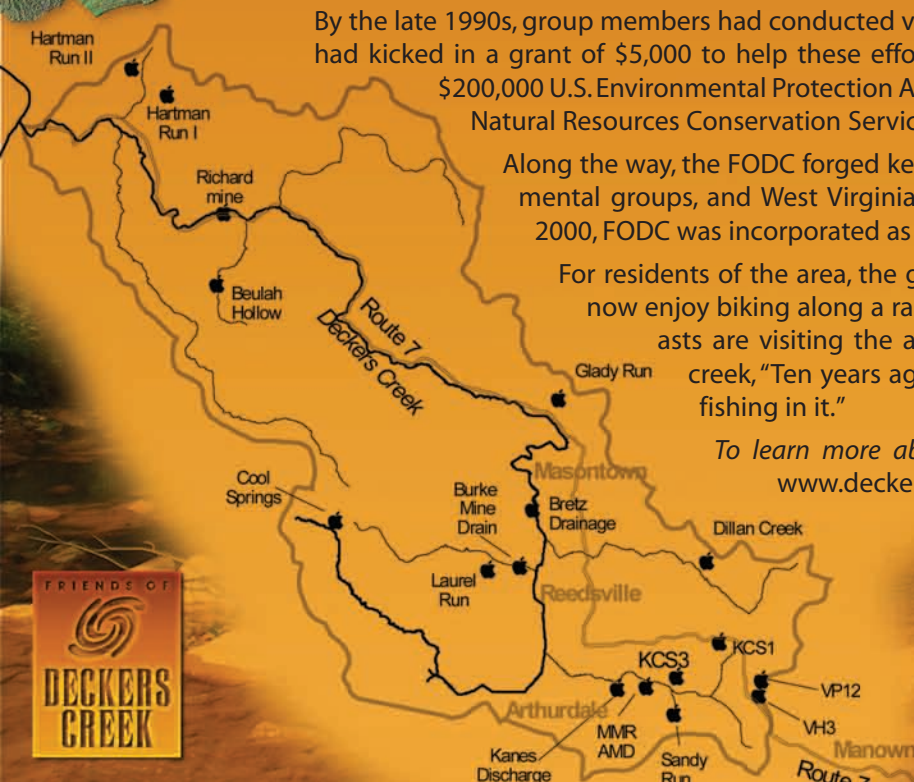
In 1995, a group of kayakers, rock climbers, and other environmentalists formed the Friends of Deckers Creek (FODC) to address the pollution problems. Initial activities included an Adopt-a-Highway program and trash clean-ups that removed literally tons of waste from the watershed. Early on, the FODC launched CarpFest, an annual community picnic and fundraiser that continues to this day.

By the late 1990s, group members had conducted various water quality studies and the state of West Virginia had kicked in a grant of \$5,000 to help these efforts. By the group's 10th anniversary, they had secured a \$200,000 U.S. Environmental Protection Agency grant and commitments from the state and the U.S. Natural Resources Conservation Service for \$10 million to address acid mine drainage cleanup.

Along the way, the FODC forged key partnerships with state government, nonprofit environmental groups, and West Virginia University's National Mine Land Reclamation Center. In 2000, FODC was incorporated as 501c(3) organization and held its first membership drive.

For residents of the area, the group's efforts have made a noticeable difference. People now enjoy biking along a rail/trail that parallels the creek and other outdoor enthusiasts are visiting the area. As FODC President Evan Hansen likes to say of the creek, "Ten years ago we were picking up trash. Ten years from now we'll be fishing in it."

To learn more about the Friends of Deckers Creek, visit their Web site at [www.deckerscreek.org](http://www.deckerscreek.org).



[www.deckerscreek.org](http://www.deckerscreek.org)





Photo by Scott Bauer, www.ars.usda.gov


# NEXT INSTALLMENT

The second article in the watershed series—coming in the Spring 2007 *On Tap*—looks at different ways to assess the health of a watershed, including the use of existing information and field measurement techniques.

*Continued from page 24.*

- Local Media—Local talk shows are often willing to host a show about things like watershed restoration. Similarly, the local newspaper will be interested in running a story about the project.

One of the keys to effective communication is to get the message out in as many formats as possible and to repeat the message as often as possible. You never know where or when someone will hear what you're saying.

**On Tap**  
  
**Online**

For more information about public relations, see the article "Communicating Your Message" on the NESC Web site at [www.nesc.wvu.edu](http://www.nesc.wvu.edu).

## Closing Thoughts

By the end of this stage of the project, the fledgling watershed group should have a core group of committed volunteers, a vision for what needs to be done, a list of desirable stakeholders and partners, a communications plan, and willingness to do the work that lies ahead. A flexible strategy and tactics will, therefore, come in handy.

Unfortunately, there is no blueprint for designing and implementing watershed plans. As *A User's Guide to Watershed Planning in Maryland* notes, "Each local watershed is unique, with a different combination of impacts, planning objectives, development pressures, stakeholders, and local protection capacity. Consequently, watershed planning is always somewhat improvisational: a unique sequence of planning

methods is applied to arrive at the desired outcome." Many things will change and new challenges will emerge as the project develops. In reality, the best people to understand what will work in a community are the people who live in that community.

What must drive these efforts, though, is an unwavering commitment to do what it takes to save the watershed. When you encounter difficulties, as you inevitably will, keep in mind the words of the anthropologist Margaret Mead: "Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has."

## For More Information

Several watershed Web sites are featured on pages 12 and 13 in this *On Tap* and on the NESC Web site at [www.nesc.wvu.edu](http://www.nesc.wvu.edu). *A User's Guide to Watershed Planning in Maryland* may be downloaded from the Maryland Department of Natural Resources Web site at <http://dnr.maryland.gov/watersheds/pubs/planninguserguide/UserGuideCover-Ack.pdf> and the EPA manual *Engaging and Involving Stakeholders in Your Watershed* may be found at [www.epa.gov/owow/watershed/outreach/documents/stakeholderguide.pdf](http://www.epa.gov/owow/watershed/outreach/documents/stakeholderguide.pdf).

The League of Women Voters (LWV) publishes *Strategies for Effective Public Involvement: Drinking Water Source Assessment and Protection*, which is available free-of-charge from the National Environmental Services Center (NESC). To order this book, call (800) 624-8301 or (304) 293-4191, or email [info@mail.nesc.wvu.edu](mailto:info@mail.nesc.wvu.edu) and request item # DWBLPE75. To learn more about the LWV and

the efforts to promote safe drinking water and public participation, visit their Web site at [www.lwv.org](http://www.lwv.org) or write to 1730 M Street, NW, Washington DC, 20036, or call (202) 429-1965.

NESC the "Training Skills Handbook" that explains how adults learn—an important consideration for planning public participation. The 59-page book costs \$8.50 plus shipping and handling, and may be ordered by calling (800) 624-8301 or by sending an e-mail to [info@mail.nesc.wvu.edu](mailto:info@mail.nesc.wvu.edu). Request item # TRBKTR13.

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**On Tap Editor Mark Kemp-Rye** lives in the Deckers Creek watershed, part of the Monongahela River sub-basin, in turn, part of the Ohio River basin.



# Getting Good PR Out of Your CCR

**D**oing a good job in the drinking water utility business can be a thankless task. As long as the water faithfully pours out of your customers' taps and everybody's white laundry remains that way, most people will fail to recognize all the planning and hard work that goes into providing a safe, affordable, and reliable supply of drinking water.

Yours is a job that goes on behind the scenes, until a water main breaks or it's time for a rate increase. Up until that time most people pretty much take their drinking water for granted.

This is why it is important that systems large and small take advantage of every opportunity to communicate with their customers and let people know about all the hard work that goes into keeping their water safe and secure.

As you go about putting together your annual Consumer Confidence Report (CCR) over the coming days, why not take advantage of this opportunity to tell your customers a little about what is going on behind the scenes at their local water treatment plant.

## **The ABC's of the CCR**

The CCR is the centerpiece of the right-to-know provisions of the 1996 Amendments to the Safe Drinking Water Act. Under these amendments, all community water systems serving at least 25 year-round customers are directed to create an annual report on the quality of the drinking water they produce

While a CCR doesn't have to be fancy, both state and federal guidelines require that they contain key information including:

*Water System Information*—Provide the name, and address of the water system, and the phone number of the person who can answer customer's questions about the report. Also provide information about public participation opportunities (times, dates, and locations of board meetings, etc.) and information for non-English speaking customers (if necessary).

*The Source of Your Water*—List the name and location of water sources used by your system, provide information about where and how to obtain a copy of the most recent source water assessments completed by your system, and include information about significant sources of contamination that could potentially impact your system's water source.



**Definitions**—Provide explanations for:

- **Maximum Contaminant Level (MCL):** The highest level of contaminant that EPA allows in drinking water
- **Maximum Contaminant Level Goal (MCLG):** The level of contaminant in drinking water below which there is no known or expected health risk
- **Maximum Residual Disinfectant Level (MRDL):** A level of disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects

And, other definitions as required by your state.

**Detected Contaminants**—Develop a summary of data on all detected-regulated and unregulated-contaminants; known or likely source of each detected contaminant with an MCL/MRDL; a description of potential health effects related to the contaminant; information on *Cryptosporidium*, radon, and other contaminants as required by each state; a statement showing compliance with other drinking water regulations; an explanation of any violations, potential health effects, and steps taken to correct the violations; and an explanation of any variances/exemptions that may apply to your water system.

**Required Educational Material**—Provide an explanation of contaminants and their presence in drinking water, a warning for vulnerable populations about *Cryptosporidium*, and informational statements on arsenic, nitrate, and lead as required in your state.

The deadline for the annual distribution of the CCR to your customers and your state primacy agency is July 1. Your report should cover from January 1 to December 31 of the previous calendar year.

It's important to remember that this is not a comprehensive list of information required in your system's CCR. Be sure to check with your state primacy agency to learn what specific information is required in your neck of the woods.

### **Build Confidence with Your CCR**

The CCR is one of the simplest and most effective tools that you have to generate communication with your customers. Think of it as a prime opportunity to shine a little light on all

the hard work that you do each and every day.



The article "Communicating Your Message: Good Public Relations Makes the Job Easier" is available on the National Environmental Services Center

Web site at [www.nesc.wvu.edu/ndwc](http://www.nesc.wvu.edu/ndwc).

Depending on how much space you have left after listing any and all violations that occurred over the previous year (and we hope that you have plenty of space left), take some time to write a few paragraphs about any current projects that your system is working on or successes that you've had over the past year. Remember, a CCR is an educational tool and is a great way to educate your customers on the job that you do.

One good way to drive home the notion that a safe and reliable source of drinking water is clearly a great value is to offer up a few vital comparisons, such as:

*Lipton Ice Tea* 16 oz for \$1.19 = \$9.52 per gallon

*Diet Snapple* 16 oz for \$1.29 = \$10.32 per gallon

*Evian* (water) 9 oz for \$1.49 = \$21.19 per gallon

*STP Brake Fluid* 12 oz for \$3.15 = \$33.60 per gallon

*Pepto Bismol* 4 oz for \$3.85 = \$123.20 per gallon

*Vicks Nyquil* 6 oz for \$8.35 = \$178.13 per gallon

*Whiteout* 7 oz for \$1.39 = \$254.17 per gallon

*Absolut Vodka* 59.3 oz for \$26.99 = \$58.26 per gallon

*Cover Girl Nail Polish* 0.4 oz for \$2.79 = \$892.80 per gallon

*Good Ol' Tap Water* = average \$0.05 per gallon

And best of all, unlike the other products listed here, the water you provide is delivered straight to their house! So don't hesitate to gently remind your customers of this simple fact.

Savvy water systems, public service districts, and sewer systems know that their success depends, to some extent, on good relationships with their customers—and their communities. So, go ahead and take advantage of this opportunity to create a little good PR while you have the chance.

Remember, the EPA gives you quite a bit of flexibility when it comes to

the design of your CCR. So why not spend a few extra dollars and add an extra page to your next CCR letting your customers know what's going on down at the treatment plant.

### **A Little Help From the EPA**

While the thought of producing a CCR might seem daunting, remember that you aren't alone. EPA has designed *CCRIWriter* to help you along. *CCRIWriter* is a Web-based program that allows water systems operators or designated personnel to enter data and generate a CCR.

This program walks users through all the required sections of the CCR, helps you convert lab results, and allows you to insert and edit the EPA's recommended text into your own report.

Once you are done, many systems elect to go ahead and publish their CCR on the EPA's Web site for their customers to view. It is also a great place to go and view the CCRs of other systems as you prepare to make your CCR even better in the coming years.

### **For More Information**

EPA has other CCR-related resources on their Web site, including:

- The CCR Quick Reference Guide—[www.epa.gov/safewater/ccr/pdfs/quickrefguide\\_ccr.pdf](http://www.epa.gov/safewater/ccr/pdfs/quickrefguide_ccr.pdf)
- CCRIWriter—[www.ccriwriter.com](http://www.ccriwriter.com)
- CCR Fact Sheet—[www.epa.gov/safewater/ccr/ccr-fact.html](http://www.epa.gov/safewater/ccr/ccr-fact.html)
- Manual for Preparation of Drinking Water Consumer Confidence Reports—[www.state.tn.us/environment/dws/pdf/Epadraft.pdf](http://www.state.tn.us/environment/dws/pdf/Epadraft.pdf)

Check to see if your system's CCR is listed on the EPA Web site (or add your CCR if it is missing) by visiting <http://yosemite.epa.gov/ogwdw/ccr.nsf/America?OpenView>.

The National Environmental Services Center offers a booklet with instructions about writing a CCR for small systems without computer access. To order this booklet, call (800) 624-8301 or e-mail [info@mail.nesc.wvu.edu](mailto:info@mail.nesc.wvu.edu) and request product number DWBLMG40.

*This article was adapted from The Safe Drinking Water Trust e-Bulletin, a free e-mail bulletin about security, regulations, and safe and efficient operation of small water and wastewater plants. Developed by the Rural Community Assistance Partnership, the services is available at [www.watertrust.org](http://www.watertrust.org).*





# Road Map to the Future

Capital Improvements Planning for Small Water Systems

By **Jean Holloway**, Training and Education Manager  
The University of Maryland Environmental Finance Center

**D**o you have a capital improvements plan (CIP)? Is it really a plan or is it a list of projects you hope to do over the next several years? How often is the plan updated? Do you review your plan each year? How many years does your plan cover? Do you have a plan for financing each project in your plan or do you proceed with projects until the money runs out? Does your plan mesh with your long-range plan, comprehensive plan, land-use plan or other “vision” plan for your overall community? Have you thought about how the projects in your CIP will affect your long range goals or vision for your community? These are just some of the questions you should ask in reviewing the adequacy (or inadequacy) of a capital improvement program or plan. In short, what is your system’s future (as you see it today) and how do you plan on getting to that future?

## What is a Capital Improvements Plan?

Capital improvements planning is the multi-year scheduling of system improvements accompanied by the intended sources of funding for those improvements and the approximate timetable for accomplishing the listed projects. These improvements may take the form of system upgrades and expansions to accommodate growth or simply involve the replacement or restoration of existing apparatus to like new condition. A true CIP is a road map to the future of an infrastructure system of any kind: where you want to go and how you plan to get there. It is perhaps the single biggest step in moving a system, particularly a small system, from that reactive, crisis management mode, into a planned for, “I meant to do that” mode. Your list of projects, if that is what you have, is just that: a wish list, and not a plan for attaining those goals and improvements.

**You cannot  
escape the  
responsibility  
of tomorrow by  
evading it today.**

**Abraham Lincoln  
(1809–1865)**





The articles "Running Your System Like a Good Business" and "How to Develop a Multi-Year Capital Plan" are available

on the National Environmental Services Center Web site at [www.nesc.wvu.edu/ndwc](http://www.nesc.wvu.edu/ndwc).

There are a number of misconceptions about the CIP process that a community may run into when attempting a first CIP. Common questions include how rigid these plans are, how much debt they will entail, if they are required, and the need for developing one in the first place.

*If I develop and adopt a CIP, won't I be locked into doing all the things it lists?*

The public, and sometimes even decision makers, perceive the multi-year schedule as something that locks them into the planned improvements. Because a CIP document must be flexible and reviewed each year to reassess needs and goals, the CIP is not a rigid document that commits the system to the projects it contains. If it is not reviewed and adapted as goals and needs change, it becomes simply an exercise in planning, or something one must do to comply with requirements rather than a useful guidance document for better management of the system.

*If I develop and adopt a CIP won't I be burdened with debt to accomplish the projects?*

The CIP process incorporates an analysis of affordability and debt service capability and, thus, helps to avoid imprudent debt obligations. It can be a valuable tool in and of itself in the avoidance of over-burdensome debt. Analyzing affordability includes figuring out what your customers can pay for as well as what your system can afford to assume.

Moreover, this common misconception about the CIP process overlooks the fact that debt is but one of the ways to pay for capital improvements and replacement. With proper advance planning and sound financial management, even a small system can do some CIP projects without incurring any debt at all. Pay-as-you-go funding is largely dependent on adequate monetary reserves accumulated over time by recognizing equipment wear as a real cost of operation rather than a "paper" number that doesn't need to be funded by rates. In short, recognizing depreciation and funding it annually will enable more such self-funding of smaller projects and

will accumulate the local match that is usually required by programs that fund larger projects. Don't ever be tempted to defer the accumulation of reserves for fear of not qualifying for funding because you don't need it. One way or the other that money will not go to waste in the proper stewardship of your system.

*Is there a regulation or rule that says I have to have a CIP?*

There is no rule in federal regulations that says a system must have a CIP. However, if a system applies for funding from a state revolving fund program or any other that examines its financial management practices as a condition of funding, one of the first things that will be asked is whether the system has a CIP. Having a CIP is both a practice and a measure of sound financial and managerial capacity in any water or wastewater system, regardless of regulation. Financial and managerial capacities are cornerstones of a system's sustainability. Can it be run in a consistent, compliant level over time? Conversely, the lack of these capacities can lead to a system's inability to operate in compliance with regulations and operational requirements, and, thereby, its eventual failure.

*If I don't have to have a CIP why should I go to the trouble to develop one?*

A CIP can offer a jurisdiction a number of advantages in addition to its inherent asset management benefits. A CIP provides a formal framework for the decision making process and a clear link to long range or master plans. It helps to focus a community's attention on goals, needs, and financial capability while helping to avoid the waste of public resources. It serves as a guide for system operations for the planned years and provides a formal vision for the system's future and its value to the community. This planned approach to managing the community's assets helps to sustain the utility and to provide some stability to the rate structure over time. The plan and the planning process can also be used by the utility to heighten public awareness of the system, its activities, and its needs.

The need for a CIP is all the more evident in light of recent U.S. Environmental Protection Agency estimates that approximately \$224 billion would need to be expended for the next 20 years for capital improvements to water and wastewater systems nationwide to keep them in compliance with health and regulatory standards. For systems serving more than 100,000 people, this estimate represents a significant impact per connection, but for



small systems—those under 10,000 in population—the potential impact is staggering. While the large systems may have a higher total expenditure figure for their improvement needs, they have a larger customer base over which to spread the costs. The heavier burden on the small systems just means they need to be that much more careful in their planning and in how they spend their more limited resources. Small systems need to get the optimum “bang for their buck” so that no time or money is wasted, and that means planning for expenses rather than simply covering them as they arise. One of the best and most basic ways to do that is to have a CIP.

### Getting Started

The first step in doing a CIP is to establish the framework for the process itself. This means determining the participants, the timetable, the procedures, and the policies that will direct the planning process. Establishing clear and defensible standards for judging and prioritizing proposed projects is one area where a written policy can be crucial to the success of a plan. Someone is bound to ask why one project was ahead of another on the list of planned improvements and a written set of standards that governed those decisions can go a long way toward satisfying such questions and potential criticisms. Other policies may relate to things like borrowing versus self-funding, citizen input procedures, or to something as pedestrian as the format for the written CIP document. Looking at CIP documents from other jurisdictions may help identify a format and presentation that works for your community.

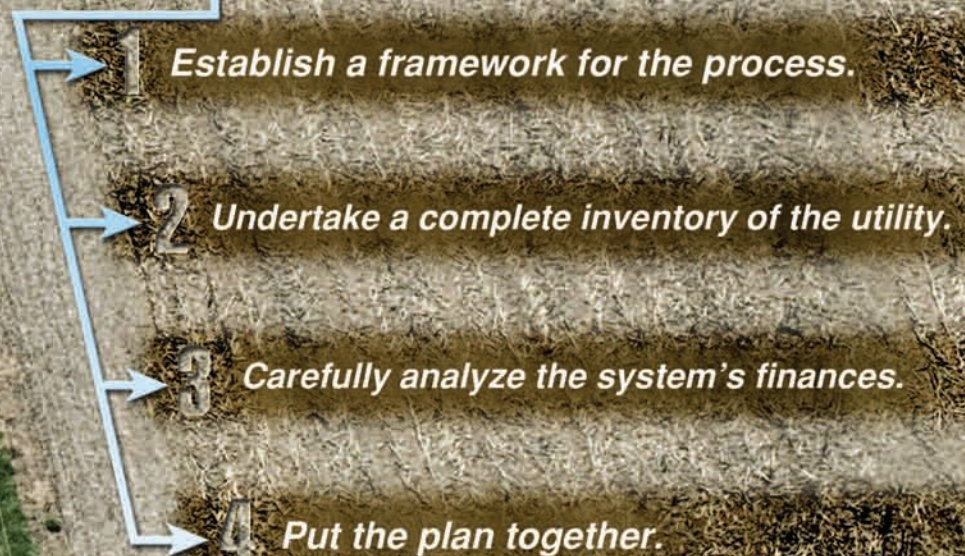
The next step is to do an inventory of the system and all its assets, fixtures, and equipment, itemizing and evaluating the conditions found. Doing this inventory with an eye toward possible visual aids and data that will help support and sell the eventual plan is a good way to approach this step. Pictures of rusty pumps and data on time spent repairing ancient equipment will be a more effective tool than mere verbal assertions saying the same thing. Data on wasted resources due to decrepit equipment can also be a big consideration in prioritizing projects.

From this inventory a list of needed projects can be derived and the planning body can begin to prioritize projects to address the most urgent needs. Some of the considerations for prioritization could be:

1. Is there a legal mandate or order requiring a particular improvement?
2. Will the project eliminate an existing or potential threat to the public health?
3. Will the project benefit all the population or only a segment?
4. Will the project provide better safety for system employees?
5. Will the project improve efficiency, save money and time, or enhance service quality?
6. Will a project modernize an outdated facility or piece of equipment that has outlived its expected usefulness?

There are any number of questions that might be asked, depending on the community and its philosophy and goals for

## The Four Steps of Capital Improvement Planning





the future of the utility. There are times where the priority order of a project may be changed for funding availability, timing, or for factors outside of the objective considerations attached to prioritizing needs. For example, a water line replacement planned for the third year of a plan may be moved up to the first year if it is learned that the state or county intends to re-pave the street over it. The same project could be moved back in priority to a later date if it is to coincide with another jurisdiction's plans for the related area.

The third step in the CIP process is to analyze financial capacity of both the system and its customers. The utility may look at things like trends and growth prospects along with its past financial performance for itself. Another consideration may be the portion of its average customer's income that goes to pay utility user charges when examining the impact of planned expenditures and debt on its customers. It is important to be sure, in either context, that the projects included in the final plan will be affordable for the utility and its users. If the utility can't afford to pay the debt service, it will have to raise rates even higher than planned for that project. But, if the rates go up higher than the average residential customer can legitimately afford to pay, the utility's cash flow and bottom line revenue will suffer from unpaid bills. Either scenario would be a disservice to the consuming public.

From this financial analysis, the planning body can go forward with identifying specific funding options and programs for the various projects. Potential sources will likely include the traditional (grants, loans, and bonds), as well as the less traditional (impact fees, depreciation reserves, cash reserve funds, and the like). The important thing is that general fund and tax dollars should not be spent to keep utility enterprise funds afloat. Enterprise funds are supposed to be exactly what the name implies: self-supporting enterprises. By the same token, enterprise funds are not designed to be cash cows for the general fund. Either side of the coin is contradictory to the premise behind enterprise or "proprietary" funds—that users pay for what they use, rather than just for the generic service involved.

The final step in the planning process is to put the plan together, making sure to include all the pertinent information for each project proposed. The plan should contain the project description and purpose, alternatives considered and rejected along with the reasons, cost estimates,

proposed funding sources, and the intended schedule of improvements. Be especially attentive to funding program requirements and whether or not your specific activities or projects are eligible for their funding. Also make sure that you can meet the various application and advertising deadlines specified by the programs you are suggesting as sources. Allow enough lead time to advertise and meet any public hearing or notice requirements.

After any internal reviews and approvals and adoption by the governing body, it is critical that the CIP is not treated as just another study or exercise in planning that gathers dust on a shelf. It must be a guiding document as well as a fluid document that can be reviewed and revised as the community's needs and goals change. A road map is only helpful if it is consulted before the driver gets lost. Likewise, a CIP is only helpful if it is referred to and reviewed regularly as the community moves forward.

### For More Information

The National Environmental Services Center has several products to help systems with planning and budgeting.

- The "Small System Guide to Financial Management" discusses financial planning, budgets, estimating system revenue, and more. Request product #DWBLFN40.
- The "Utility Manager's Guide to Water and Wastewater Budgeting" presents financial concepts, especially as they apply to annual budgets. Request product #FDBLFN1349.
- The Summer 2004 *On Tap* was devoted to "Running Your System Like a Good Business." Request product #DWQUNL14.

To order these products, call (800) 624-8301 or e-mail [info@mail.nesc.wvu.edu](mailto:info@mail.nesc.wvu.edu). 



A former town manager and town administrator for a number of small towns on Maryland's Eastern Shore, **Jean Holloway** is the training manager for the Environmental Finance Center at the University of Maryland, a position she has held since 1999.





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## Who Needs What Training? National Needs Assessment Provides Answers

by **Trina K. Waffle**, NESc Interim Communications Manager

**C**onducted between 2002 and 2005, the National Environmental Services Center's (NESc) Training Needs Assessment indicated that a well-developed training network—driven largely by certification requirements—exists for operators of environmental infrastructure but is lacking for others who are involved in wastewater, drinking water, and solid waste systems for communities of 10,000 or fewer residents. According to authors Craig Mains and John Hoornbeek, the training and technical assistance community needs to reach under-trained audiences and make effective use of different training approaches and technologies.

Training programs offered by major training networks were reviewed during a six-month period. For background in applicable mandates, the authors reviewed the Clean Water and Safe Drinking Water Acts. Eighty-two individuals (town administrators, plant operators, public works directors, transfer station/recycling center managers, regulators, technical assistance providers, consultants, and trainers from 50 states and Puerto Rico) were also interviewed for this study.

While those interviewed said they preferred conventional classroom training, they also said their biggest obstacles to training were time, money, and travel limitations.

The interviews also revealed a gap between the training needs local officials identified for themselves and the needs ascribed for them by others. Assistance providers and regulators participating in the interviews regularly identified more training needs for local officials than local officials identified for themselves.

The study revealed six areas of training needs:

1. financial management,
2. emergency preparedness training,
3. regulatory compliance,
4. wet weather flow issues,
5. decentralized wastewater treatment and management, and
6. municipal solid waste.





*Financial management* topped the list of local officials, utility board members, assistance providers, and consultants. Specific topics of interest were capital improvements planning, asset management, maintaining financial viability, retaining qualified operators, and understanding funding channels. Management courses, in general, and financial management courses, in particular, are offered less frequently than operator training courses. Despite an increasing awareness among training organizations about the need, financial management training is still not widely available.

*Emergency preparedness training* ranked high with system managers, plant operators, local officials, and assistance providers, partly in response to federal requirements, and partly due to concerns resulting from the September 11, 2001 terrorist attacks. All expressed a need for increased capacity for small communities to be able to respond to emergencies no matter what the cause of the disruption.

*Regulatory compliance* appeared to be acutely needed by drinking water system personnel due to a series of relatively complex regulations affecting a large number of systems. Regulations under the Microbial Disinfectants/Disinfection Byproducts Cluster (M-DBP Cluster) were of particular interest because of the potential for systems to encounter treatment conflicts while trying simultaneously to reduce microbial contaminants and disinfection byproducts. Participants indicated a need for training that addresses simultaneous compliance with multiple drinking water regulations, including information on using advanced technologies, such as membrane filtration and reverse osmosis, as compliance strategies. (For more information about simultaneous compliance strategies, see the "Tech Brief" insert in this issue of *On Tap*.)

*Wet weather flow issues* were identified as a priority wastewater training need. Inflow/infiltration of rainwater to sewage systems issues were considered high priority, reinforced by a series of recent wastewater regulations. The data indicated that fewer courses were offered for collection systems and stormwater systems than for treatment plant operation.

*Decentralized wastewater treatment and management* were also areas of significant training need. A lack of federal regulations for decentralized wastewater and a variety of regulatory approaches at the state and local levels present significant challenges to designers, installers, regulators, local officials, and system monitors and maintainers. Participants indicated a need for more technical training on different alternative systems, training on centralized management of decentralized wastewater systems, and monitoring and maintenance of decentralized systems. Fewer than half of the states currently have decentralized wastewater training centers.



Attendees at the Environmental Training Institute for Small Communities, sponsored by the National Environmental Services Center each year in Morgantown, West Virginia, learn about water and wastewater issues confronting America's small communities.

Plus the perception among regulators, funding agencies, and engineers remains that decentralized wastewater treatment is a less preferable option than centralized systems. A number of participants also mentioned that a lack of enforcement at the state level meant there was little incentive for working toward, and verifying, adequate treatment.

*Municipal solid waste* was viewed as increasingly being managed at the county or multi-county level rather than the town or small community level. Nevertheless, priority training needs were identified including controlling illegal dumping for solid waste managers, local officials, and assistance providers and managing operational costs. Recycling center managers were interested in training on managing operational costs.

*The complete training needs assessment is available on DVD and may be ordered from NESCC at (800) 624-8301. Mention product #TRCDGN29. The cost is \$10.00 plus shipping charges. The NESCC Web site has information about the Clean Water and Safe Drinking Water Acts, as well as a small systems compliance chart at [www.nesc.wvu.edu/netcsc/netcsc\\_regs.htm](http://www.nesc.wvu.edu/netcsc/netcsc_regs.htm).*



NESCC Interim Communications Manager **Trina K. Wafle** has served as associate director of the National Research Center for Coal and Energy, where NESCC is housed, for the last 17 years.





Continued from page 19.

ratepayers that each year you will look at what happened last year and what is on the horizon for next year. Inform them that they need to plan on rate increases to meet rising needs every year. Most years those increases will be an inflationary increase in the range of two to four percent. That will amount to perhaps \$0.50 to \$1.00 per user per month. An increase that small is basically unnoticeable and completely understandable to ratepayers. Few will come out to a public meeting to discuss a \$1.00 per month rate increase anyway.

How does our story conclude? If you hire a good analyst, “blame” him or her for the rate increases needed, adjust your rates appropriately now and adjust them appropriately each year, your rate increases will be a snap, your systems will remain continuously well funded, they will serve the ratepayers well, you will be a hero, you will get re-elected or retain your staff job and all will live happily ever after.

### More Information


To learn more about rate setting, visit Carl Brown’s Web site at [www.carlbrownconsulting.com](http://www.carlbrownconsulting.com). The site has information about rate setting, asset management, and other topics, and tools to help systems understand and calculate good rates.

The National Environmental Services Center (NESC) maintains a Manufacturers and Consultants Database, a list of companies and consultants that offer products and services to small community water and wastewater utilities. Call NESC’s technical assistance staff at (800) 624-8301 and select option “2” to help you located a rate specialist in your area.

NESC also has several products to help systems with rate setting.

- “Show-me Ratemaker,” part of the Environmental Management Suite CD, is a free water and sewer user charge analysis program developed by Mr. Brown. Request product number DWCDMG57.
- The “Small System Guide to Rate Setting” helps decision makers keep track of a system’s finances, make changes in rate structures, and gain customer support for rate increases. Request product number DWBLMG49.
- The booklet “Water Rates: Information for Decision Makers” provides an overview of four different rates structures. Request product number DWBLTR05.

To order these products, call (800) 624-8301 or e-mail [info@mail.nesc.wvu.edu](mailto:info@mail.nesc.wvu.edu).

The Environmental Finance Center at Boise State University offers Plan2Fund, RateCheckup, and other asset management and rate analysis programs. Visit their Web site at <http://sspa.boisestate.edu/efc/> to learn more. 



**Carl Brown** is President of Carl Brown Consulting, LLC; specializing in water, sewer and storm water system rate analysis and rate setting, asset management program development and training nationwide. Mr.

Brown may be contacted by phone at (573) 619-3411, by e-mail at [carlbrown@mchsi.com](mailto:carlbrown@mchsi.com).

# RATE

## Analyst Selection Process

Selecting a rate analyst can be done in a series of steps.

- 1 Examine your existing acquisition process. Compare it to the following steps. As needed, revise your processes to make them work better.
- 2 Get advice on what kinds of rate analysis services (scope of service) you need.
- 3 Develop a probable scope of services.
- 4 Ask service providers for firms and others that do rate studies.
- 5 Prepare a request for qualifications (RFQ) that includes the scope of services.
- 6 Talk with prospective rate specialists and give them the RFQ.
- 7 Review responses.
- 8 Select a responder with whom you want to discuss doing the project and talk it over.
- 9 Check references.
- 10 Have the specialist give you a firm proposal for what they will do, what you need to do, and what they will charge you.
- 11 If the proposal is acceptable to you, present it to your decision-making body for approval or disapproval. If they approve it, proceed. If not, go back to step 7.
- 12 As your specialist does the work, ask questions, be involved and assure yourself that things are going well. If they are not, and your specialist can’t fix the problem, fire them and use another analyst.



# Calculating Rate Adequacy and Affordability

**R**ate analysis is a very specialized field. You may not have the time or expertise to do your own rate analysis. However, there are three simple calculations—operating ratio, coverage ratio, and affordability index—that you can do to find out if your rates are adequate and affordable to your ratepayers. These indicators can help you decide if you can simply make small rate adjustments to keep your revenues adequate and your rates affordable or if you need a full rate analysis to get back on track.

If you calculate and track these three indicators regularly, you will get a good sense of the financial health of your utilities and how easy it is for your customers to pay their bills.

## For More Information

*To make this task even simpler, there is a Microsoft Excel spreadsheet template for a basic financial statement that will calculate these indicators for you. Download the template free at [www.carlbrownconsulting.com/Tools.htm](http://www.carlbrownconsulting.com/Tools.htm).*



## OPERATING RATIO



### How it is calculated:

Operating Income / Operating Expenses\*

*\*Not including debt expenses*

### Example:

\$150,000 operating income / \$100,000 operating costs = 1.5 operating ratio

### What it does:

Indicates how easy or hard it is to pay your operating expenses.

A ratio of 1.0 means you have just enough income to pay your operating costs. Less than that and you cannot pay all those costs during the time period being considered. Less than zero and you cannot pay any of those costs. From one year to the next your operating ratio should remain fairly stable or grow slightly but it can vary widely over shorter periods. Small systems (a few thousand connections or less) should have an operating ratio of 1.25 or higher. Very small systems (a few dozen connections or less) may need an operating ratio as high as 2.0 to get through short periods when income dips or costs jump.

## COVERAGE RATIO



### How it is calculated:

Funds Available to pay Debt\* / Actual Debt Costs

*\*Generally includes operating income not needed to pay operating costs plus any funds dedicated to debt expenses.*

### Example:

\$50,000 funds available to pay debt / \$20,000 actual debt expenses = 2.5 coverage ratio

### What it does:

Indicates how easy or hard it is to pay your loan payments, closing costs and other debt related expenses.

If you have no debt, you have no coverage ratio. As with operating ratio, a coverage ratio of 1.0 means you have just enough funds to pay your debt related costs. And, as with operating ratio, from one year to the next your coverage ratio should remain fairly stable or grow slightly but it can vary even more wildly than operating ratio. Most systems should have a coverage ratio of 1.25 or higher. Generally a strong operating ratio will result in a strong coverage ratio as well. Having both may get your system better terms and interest rates on loans and bonds.

## AFFORDABILITY INDEX



### How it is calculated:

Monthly Bill for 5,000 Gallons of Residential Water or Sewer Service / Monthly Median Household Income Within the Area Served at Those Rates

### Example:

\$20 average residential bill for 5,000 gallons of water / \$2,000 median household income = 1.0 affordability index

### What it does:

Indicates how easy or hard it is for your residential water or sewer customers to pay their utility bill.

A ratio of 1.0 means your residential customers are using, on average, one percent of their household income to pay their water or sewer bill. This rate level is fairly common across the U.S. and is considered affordable. As a reference point, the U.S. Department of Agriculture's Rural Development Utilities Program targets an affordability index of two percent as the threshold for issuing grants to a system.



**WORD PUZZLE\***

- watershed
- planning
- management
- stakeholder
- communication
- rates
- calculation
- politics
- public
- capital
- improvements
- training
- source
- compliance
- regulations
- groundwater

g k o u t r a i n i n g r t x h v l r c o s q a r  
n t q o s s i p m a i n b o f f i l d z m a c a l  
r e d l o h e k a t s y n m o r t u h n i u t o h  
s e g u r y v i f t p o l i t i c s l o r e d t m  
c a g a e v a i p r u g i a n h c u p j s i n a j  
c o n u e w b g i x b k t j e q a b t a d b f k e  
x i m y l o q r a u l o c n r t n e m e g a n a m  
z k i m n a d d i a i v p s y n a c c p k s r v l  
h i m a u n t k l j c g f l d i h n i e y x h o g  
t r u a o n n i s a e a s o z x l a o u v z b i r  
o k o k o a i s o r o n p t k a n i m e n a c t o  
d m r l g p n c u n q m v i l k o l o f t n j a u  
k d c o y b l v a t s i d h t l q p t i e j r s n  
f l o y x a t r t t z n c k a a y m a s b i f o d  
o h r d j w t i o y i m a h n i l o i e u n e t w  
q e e i s n h a m c x o o s w o a c o k m s j d a  
l l e n i l y z a p i m n d c z i h f i g a l y t  
a s t n e m e v o r p m i e s x d t n e g p c t e  
a t u a v a v l y o t s n h c g n i a o t r w h r  
d k b y d f r s r n l g n s i h q s a l w p n v g  
r v e r m o n a u t q d e r d u b a m l u t e e n  
p l a n n i n g g x m f i e j m a j i m z c n s p  
o d o h k i l o e n z h s t x i h a v d i m l p f  
j l e g i f e g n b i r k a a l s e i r k n o a i  
b p s m z p y f s t n r a w o q e c r u o s g a c

\*Solution on page 39

Wordsearch by Sheila Anderson

**QUOTES**

*The good rain, like the bad preacher, does not know when to leave off.*

—Ralph Waldo Emerson (1803–1882)

*A little rain each day will fill the rivers to overflowing.*

—Liberian proverb

*The trees reflected in the river—they are unconscious of a spiritual world so near to them. So are we.*

—Nathaniel Hawthorne (1804–1864)

*A river seems a magic thing. A magic, moving, living part of the very earth itself—for it is from the soil, both from its depth and from its surface, that a river has its beginning.*

—Laura Gilpin (1917–1932)

*If you're not part of the solution, you're part of the precipitate.*

—Steven Wright (1955– )

**WATER TRIVIA**

The Mississippi River watershed is the largest in the United States and among the largest in the world. The Mighty Mississippi drains parts of 30 U.S. states and two Canadian provinces. How much mud and silt does the river deposit in the Gulf of Mexico each year?

- a) 15 tons
- b) 175 million tons
- c) 300 million tons
- d) 500 million tons
- e) 1 billion tons

*Each year, the Mississippi River transports an estimated 500 million tons of mud and dirt along its 2,000-mile length. The travel journalist Charles Kurat once quipped, "The busi-ness of the Mississippi, which it will accom-plish in time, is methodically to transport all of Illinois to the Gulf of Mexico."*

**Hmmmm**

An automatic dishwasher uses approximately nine to 12 gallons of water, while hand washing dishes can use up to 20 gallons.

Source: American Water Works Association



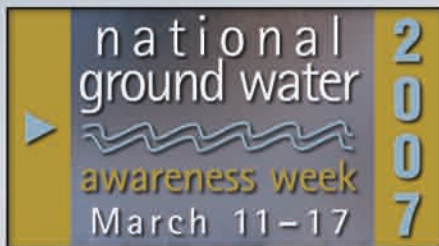


# Shedding Light on What Lurks **B**

By **Cliff Treyens**  
 Director of Public Awareness,  
 National Ground Water Association

Groundwater is a *vast* resource, so vast that it constitutes 95 percent of the world's available fresh water. Yet, it is out of sight and out of mind for most people. That can be a problem because if you own a well, you *are* your own water system manager.

In America, 46 percent of the population regularly depends upon groundwater for its drinking water supply. Groundwater also supplies 42.4 percent (58 billion gallons/day) of all water used for irrigation.



## Understanding Ground Water and Wells

On the whole, groundwater is better protected from contamination than surface water. As water moves through the ground, much of the chemical or biological contamination is broken down or filtered out by the time it reaches the water-bearing geological formation called an aquifer. If necessary, treatment technologies are available to remove any unsafe substances that remain in well water and improve the water's quality. Regular water testing is the key to knowing whether your well water is safe.

Most well owners know little about the inner workings of their wells. When something goes wrong, they panic. If you suspect trouble, have a qualified water well system contractor inspect and service your well. A qualified contractor will have the expertise and equipment necessary to accurately diagnose and remedy problems.

It's good, however, to become an informed well owner. For instance, knowing that regular well maintenance check-ups and water testing are important is part of being a responsible well owner. (You can learn more about well ownership by going to National Ground Water Association's Web site [www.wellowner.org](http://www.wellowner.org).)

## Protecting Ground Water

For the most part, protecting groundwater means conserving it and keeping contamination away. In many parts of the country—not just arid or semi-arid places—the amount of water being withdrawn from aquifers is problematic. In some instances, water tables drop, which may require lowering the pump or drilling a deeper well. In other cases, heavy withdrawals from an aquifer may cause the levels of surface water bodies such as streams to lower, because they usually are connected to groundwater. Conserving water is always a good practice, no matter where you live.

Keeping contamination away from groundwater is not always in the well owner's control. Sometimes, contamination occurs naturally in the environment. Other times, it comes from a distance and contaminates the aquifer from which one draws water. Other times, rain runoff can wash fertilizer from farms or oil, fuel and road salt from roads into the ground, and eventually, into the groundwater. If such contamination cannot be cleaned up or prevented by the responsible party, treating your water may be the best option.

However, there are several things well owners can do on their property to help prevent contamination from entering the groundwater such as:

- Properly storing and disposing of household hazardous wastes
- Keeping animal waste away from the wellhead
- Making sure the well cap is secure and in good repair
- Sloping ground away from the wellhead to prevent the pooling of water around it.

Many public water systems rely on groundwater, too, so please do your part to help.

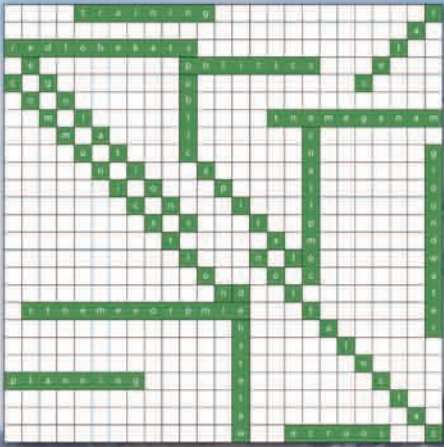


**Cliff Treyens** is the director of public awareness with the National Ground Water Association. Learn more about the NGWA by visiting their Web site at [www.ngwa.org](http://www.ngwa.org).





WORD PUZZLE ANSWER KEY



# Looking for National Drinking Water Clearinghouse products?

For the last five years, we've printed a list of our products in *On Tap*. Like many other organizations, though, we've had to cut costs. So, we won't be running the product list here anymore.

Rest assured we still have hundreds of free and low-cost products. You may peruse these items on our Web site at [www.ndwc.wvu.edu](http://www.ndwc.wvu.edu).

If you don't have Internet access or you'd like to discuss your particular situation, please call us toll free at (800) 624-8301 and select option "3" to talk with one of our technical assistance specialists.



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*...all you have to do is A.S.K.*



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