WATER TAP

WASHINGTON'S DRINKING WATER NEWSLETTER

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

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Small Communities Initiative Program helps with drinking water funding and projects

Three rural water systems in Pend Oreille County had a busy 2009. The small towns of Metaline and Ione built long-awaited water filtration plants that will better protect public health. Nearby, the Pend Oreille Public Utility District (PUD) finished a few critical water system projects for the Town of Metaline Falls.

The Metaline Water Treatment Plant was the first Washington State drinking water project completed using 2009 stimulus funding. Cutting the ribbon are, from left, Donna Favor, Mayor Trent Hansen, Secretary of Health Mary Selecky, and County Commissioner John Hankey. Photo: Cathi Read, Dept. of Commerce.

The success of these projects depended in large part on the Small Communities Initiative (SCI) Program. The SCI Program is a collaborative effort of the state departments of Health, Ecology, and Commerce. These agencies all recognize that small communities must meet the same public health and environmental mandates as larger cities, but they often lack the administrative, technical, or financial capacity to do so effectively. Since 1999, SCI has assisted small rural communities that are struggling with both economic viability and compliance with health and environmental regulations.

On December 18, Secretary of Health Mary Selecky helped Ione and Metaline celebrate the completion and start-up of their water filtration plants. Secretary Selecky noted that Metaline's project was the first Washington State drinking water project completed using 2009 American Recovery and Reinvestment Act (ARRA) economic stimulus funding.

The 2009 ARRA came at a perfect time for Metaline. Community officials were grappling with the possibility of taking on large loans to finance their project. In the end, grants funded almost the entire $1.6 million project. Key funding included $980,000 from the Community Development Block Grant (CDBG) Program and $660,000 as a forgiven loan from ARRA through the Drinking Water State Revolving Fund loan program.

Ione not only constructed a groundwater filtration plant to remove arsenic, iron, and manganese, but also replaced its entire distribution system. Since 1999, the town has spent about $5.6 million on engineering and construction costs. ARRA

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2009 Consumer Confidence Reports are due July 1, 2010.

Get the current form online at <http://www.doh.wa.gov/chp/dw/forms/331-203-F.pdf> or call (800) 521-0323.

Inside This Issue

The Director's Column

by Denise Addotta Clifford

Good news in hard times

A little over a year ago, Congress passed the American Recovery and Reinvestment Act (ARRA) to stimulate the economy and put people to work. The Act included $2 billion to finance drinking water infrastructure projects. Of that amount, Washington received about $38.5 million.

Our share went to communities in 18 counties for projects ranging from arsenic remediation to replacing uncovered reservoirs that are vulnerable to contamination. All 21 projects met the federal construction deadline and two recipients already finished their projects.

The Town of Metaline, which received $654,550, replaced an old wooden storage tank with a new 319,800-gallon water storage tank and built a new water treatment facility to replace a 50-year-old water-filtering system. And the City of Bridgeport, which received $173,000, completed a new 36-inch chlorine contact chamber.

The City of Bridgeport completed construction on a new chlorine contact chamber. *Photo courtesy of Thomas Dean & Hoskins*

Both projects saved or generated jobs and provided significant public health improvements.

During the fall application period for Drinking Water State Revolving Fund (DWSRF) loans, new federal legislation significantly increased funds and added new requirements. We put the brakes on until we could sort out how much we'd have available to lend and update the rules to reflect the new requirements.

The good news is that available funds increased 45 percent, from about $40 million to about $58 million.

The new requirements are similar to those in the ARRA. For example, we must dedicate about $7 million to "green" infrastructure projects with significant water use efficiency or energy efficiency benefits or to projects that use other innovative ways to protect the environment.

I hope many of you who applied for DWSRF loans took the opportunity to update your applications to take advantage of the "green" project incentives.

We're also required to use about $10.5 million for subsidies. This means some of the principal for low-interest loans won't have to be repaid in disadvantaged and economically distressed communities. The subsidies also will be used for water system restructuring projects that involve a change of ownership. Congress is also requiring borrowers to agree to comply with federal prevailing wage requirements.

We're updating our DWSRF Rule to include these changes. We'll soon begin scoring and ranking the applications. I expect we'll announce the recipients this summer.

Safe drinking water is becoming a bigger national priority. So here's to safe and reliable drinking water … and here's to your health!

What will you do? ...when the certified operator leaves your surface water treatment system

Small surface water systems can suddenly face the prospect of running a complicated treatment facility when their certified operator departs. Such departures present concerns and challenges with public health protection and regulatory compliance for system management and the Department of Health Office of Drinking Water (ODW).

You still must meet treatment techniques, operator certification, or monitoring and reporting requirements even though your operator is gone. Of course, we will do what we can to help.

Here are three steps you can take to ensure your system remains in compliance with drinking water rules after your operator departs.

Step 1: Before the certified operator leaves, get familiar with daily testing and monthly reports.

In addition to other reporting requirements, every system with a surface water treatment plant must submit at least three reports to ODW by the 10th of each month:

- An operations report showing chemical use, if applicable, and turbidity measurements.
- A disinfection report.
- A summary report.

The operations report is specific to the treatment technology used. The number and types of measurements required vary from once a day to several times a day, with some parameters requiring continuous monitoring. If you operate a conventional, direct, or in-line filtration plant, there is also a supplemental individual filter report form. Learn the measurements and reports your system is submitting while you still have a certified operator.

Step 2: When the certified operator leaves, immediately notify the Department of Health.

Notify the regional engineer and the Operator Certification Program as soon as you become aware of a change, or the possibility of a change. The regional engineer can advise you about your water quality monitoring and reporting requirements.

Don't rely on your departing certified operator to notify us in a timely manner. Operators often wait several weeks before they let us know they're at a new system. Some systems receive their only violations during the transition period between operators.

Step 3: Look for a replacement operator.

Immediately search for an operator who is certified at the level needed. The operator certification staff can advise you about the certification requirements for your new operator. You can get a list of certified contract operators online at <http://www.doh.wa.gov/ehp/dw/operatorcertification/Contract-Op.pdf>

If you are thinking ahead, it may be helpful to contact nearby surface water systems now. Ask them if they are willing to provide assistance if your operator leaves. Some operators are willing to provide contract service on an interim basis.

If a properly certified operator is not available, you may consider asking the Operator Certification Program for temporary certification. The request must:

- Be in writing.
- Include an application for temporary certification for a specific designated operator.
- Include the application fee.

The designated operator must be qualified to take the exam for the proper certification level. If the Certification Program grants temporary certification, it will consider your system in compliance with the operator certification requirement during the designated period. Compliance will continue if the operator passes the exam. If the operator fails the exam or fails to take the exam, an alternative approach to achieve compliance will be required.

For more information

Call the Waterworks Operator Certification Program at (360) 236-3141 or visit the Web site at <http://www.doh.wa.gov/ehp/dw/our_main_pages/opcertification.htm>

Call the nearest ODW regional office:

Eastern Region, Spokane Valley	(509) 329-2100
Northwest Region, Kent	(253) 395-6750
Southwest Region, Tumwater	(360) 236-3030

Water system requirements and EPA's Risk Management Program

If your water system holds regulated chemicals equal to or above the threshold levels listed below, you must develop a Risk Management Program and file a Risk Management Plan with the U.S. Environmental Protection Agency (EPA).

- Chlorine ..... 2,500 pounds
- Sulfur dioxide ..... 5,000 pounds
- Anhydrous ammonia .... 10,000 pounds

These requirements apply to all stationary facilities, including water and wastewater treatment plants. They are part of the Clean Air Act Section 112(r).

The Risk Management Program

The Risk Management Program protects the public and promotes industry safety standards. It prevents accidental or catastrophic releases of toxic or flammable substances by establishing an accident prevention and emergency response program. It reduces risks of accidents at your facility by requiring:

- Employee training and equipment maintenance.
- Emergency response planning to protect employees and the community.

Failure to take such preventive action can have devastating human and environmental consequences if a release occurs. Needless to say, a release would also be financially burdensome.

How the Risk Management Program helps you

The Risk Management Program provides a framework of prevention and planning activities to help you comply with federal regulations and improve safety at your site and for the surrounding community.

In addition to this program, EPA's Chemical Emergency Preparedness and Prevention Program (CEPP) includes regulations such as the Emergency Planning and Community Right-to-Know Act of 1986. Together, these programs enforce safety standards for hazardous chemicals and bridge the gaps in knowledge between communities and the chemical industry.

For more information

EPA Region 10 in Seattle offers free training and materials that can help you develop a Risk Management Plan. Visit EPA Region 10 online at < http://yosemite.epa.gov/R10/airpage.nsf/Enforcement/rmp>

To subscribe to EPA's CEPP newsletter, e-mail allen.stephanie@epa.gov

Operator fined, loses certification for neglect

The state Department of Health revoked the certification of the former operator of the Hillview Water Association for 12 months for repeatedly failing to monitor the water for potentially harmful substances. In addition, he and the association were fined $12,600.

Bruce Forenpohar of Selah is responsible for $8,400 of the fine. The association, which fired Forenpohar, already paid its share. The system serves about 30 homes near Selah in Yakima County.

The penalties follow a series of notices and warnings we sent to Forenpohar for failing to regularly test the system's water. He was given many chances to comply with required testing for coliform bacteria, nitrate, lead, copper, herbicides, pesticides, and other chemicals.

He also violated state and federal rules requiring him to inform customers about the state's orders and to provide them with important information about the quality of their water.

"This is more than a couple of slip-ups," said Denise Clifford, director of the Office of Drinking Water. "We consider these to be intentional violations and gross negligence of Forenpohar's duty to provide safe and reliable drinking water. This violates the trust we place in water system operators to protect public health."

Forenpohar appealed the fine and revocation. His appeal was heard by an administrative law judge in November. The judge recently determined that the state acted appropriately in imposing the penalties. Forenpohar is entitled to further appeal the fine and revocation.

Washington's drinking water program: 30 years of changes, challenges, and constants

Editor's note: Several of our staff with 30 or more years of experience in the Office of Drinking Water recently retired, or plan to retire soon. Water Tap asked them for this two-part historical view of the program. Part 2 will appear in June.

All of us—water systems, laboratories, local health agencies, our state regulators—should take pride in what we do, and have done over the past 30 years. For us, public health success means preventing bad things from happening to the citizens and visitors in our state who consume public drinking water.

We must be doing something right. It has been over 30 years since our last major waterborne disease outbreak. The City of Camas experienced in 1978 what was at that time a national vanguard episode of giardiasis. Since then, we've had a few incidents, most of which affected only a small number of people. We've avoided the more notorious events some other states experienced, such as the Milwaukee *Cryptosporidium* outbreak in 1994.

Early on, the main concern was *Giardia*. Largely because of this organism, the Surface Water Treatment Rule (SWTR) came along in the 1980s. This was a big step and a huge challenge for the water systems using surface water sources, or sources classified as "groundwater under the influence of surface water."

Along with the SWTR, the U.S. Environmental Protection Agency (EPA) adopted a new Coliform Rule to make sure treatment processes were effective. In 1986, the first amendments to the federal Safe Drinking Water Act (SDWA) started many activities that affected all of us.

A time of change

A small part of the 1974 and 1986 versions of the SDWA addressed concerns over chronic contaminants—organic materials such as pesticides and degreasing agents, inorganic materials (mostly metals), trihalomethanes, and radionuclides.

As we moved into the 1990s, the rules (called Phase 2/5 rules) expanded to include volatile and synthetic organic chemical contaminants in drinking water sources, and lead and copper from home plumbing.

The new rules led to significant anxiety and costs for water systems and the state program. In addition, it was taxing on all of us to explain the rules to the consumers who eventually had to pay to implement them.

With 170 years of collective experience, our 30-year employees look at the 1970 public water system rules. In the foreground are a small portion of rules and guidance documents developed in the last 40 years to help water systems comply with the rules. Pictured from left are Simon Tung, John Aden, Peggy Johnson, Jim Hudson and Cheryl Bergener.

Fortunately, with legislative direction and borrowed funding, we showed we could waive some of the more costly monitoring requirements and still protect public health. Some estimates suggest waivers saved water systems about $14 million in up-front monitoring costs statewide.

The 1996 SDWA amendments added more regulatory requirements. But they also recognized that water systems need some form of financial support to meet their public health protection goals. The Drinking Water State Revolving Fund (DWSRF) loan program came into play.

Building on the successes of the Referendum 27 and 38 grant programs from the late 1970s - 80s, the DWSRF provided low-interest loans that enabled many water systems to address water quality and facility problems.

From the late 1990s into the late 2000s, we saw even more requirements because of the amended SDWA. Increased attention to disinfection practices for enhanced microbial contaminant protection fostered more focus on what was happening in water system distribution piping. EPA established very complicated rules for monitoring disinfection byproducts. Even the disinfectants themselves received regulatory consideration as "maximum disinfection residual levels."

Part 2 will discuss how 30 years of changes and challenges shaped five elements of our drinking water program: operator certification, water system planning, data management, water system design criteria, and consumers' right-to-know.

Rule update for Group B water systems

Group B water systems serve fewer than 15 connections and fewer than 25 people per day. The state's 13,000 Group B systems serve about 110,000 people, which is about 2 percent of the state's population.

Last year, the Legislature cut funding to oversee these small Group B systems. Legislators also changed the law to allow the State Board of Health (Board) to adopt a rule for Group B systems that:

- Regulates the initial approval and design.
- Doesn't have ongoing monitoring requirements.
- Exempts systems with fewer than five connections from all requirements.

We met with the Board after the law changed to get direction for the Group B Rule. The Board told us to develop a draft rule and get public input. We plan to complete the Group B Rule draft in April. At that point, we will take informal comments through e-mail and schedule public meetings to provide an opportunity for discussion.

For more information

If you have questions about the Group B Rule, call Dave Christensen, policy unit supervisor, at (360) 236-3153 or e-mail david.christensen@doh.wa.gov

Join the rulemaking e-mail list

To receive information about rule drafts, meeting notices, and other materials, please subscribe to our Group B e-mail list. Visit the Group B Web page at <http://www.doh.wa.gov/ehp/dw/groupb.htm> and click on the link in the right column.

Other Current Rulemaking

- Groundwater Rule
- Lead and Copper Short-term Revisions
- Drinking Water Laboratory Reporting Rule
- Waterworks Operator Certification Rule
- Drinking Water State Revolving Fund Loan Program Rule

For more information about our rulemaking activities, please visit us online at <http://www.doh.wa.gov/ehp/dw/our_main_pages/regula.htm> or call Theresa Phillips, rules coordinator, at (360) 236-3147.

Contaminant of the Quarter

The Groundwater Rule: Pathogens in Groundwater?

We summarized the new Groundwater Rule (GWR) in the December 2009 **Water Tap**. The U.S. Environmental Protection Agency (EPA) started implementing the GWR on December 1, 2009. We plan to adopt the rule this fall. The GWR applies to all systems with one or more groundwater sources **not** under the influence of surface water. You can get specifics about the GWR online at <www.epa.gov/safewater/disinfection/gwr>

The purpose of the GWR is to protect groundwater sources from waterborne disease. EPA estimates that the rule will protect more than 100 million people across the country by identifying and correcting deficiencies in water systems.

Pathogens in groundwater

EPA evaluated data on waterborne disease outbreaks and determined that some groundwater systems are susceptible to fecal contamination. Contaminated groundwater may contain pathogens (organisms that can cause illness). Ingesting these pathogens can cause nausea, vomiting, diarrhea, and stomach cramps. Symptoms may be more severe in children, the elderly, and individuals with underlying health issues.

Bacterial pathogens may include *E. coli, Salmonella, Shigella,* and *Vibrio cholerae*. Viral pathogens may include hepatitis, rotavirus, and norovirus. Protozoan pathogens may include *Giardia* and *Cryptosporidium*.

How groundwater is contaminated

Human feces from failed septic systems or leaking sewer lines can contaminate a well or spring source. Animals and their feces may contaminate a groundwater system through openings, such as a missing vent on a well casing. Human or animal feces may also contaminate an

An opening, such as this, allows direct access for an animal, such as a rodent, to get into the well.

(Continued on next page, bottom)

How to use the WUE annual reporting database

Your annual Water Use Efficiency (WUE) report is due before July 1. Have you collected your annual water use data? Have you established your customer goals for water efficiency? If not, now is the time!

When you're ready to submit your 2010 WUE report, you will now use the new database.

You can access the WUE database through Sentry Internet, or by visiting the WUE Web site at <http://www.doh.wa.gov/ehp/dw/programs/wue.htm> Click on the link below the WUE icon that says "Submit your Annual WUE Report Now." Next, enter your water system identification number, fill in the necessary information, and hit the "submit" button. It's that easy.

After you successfully submit your annual report, you will receive a confirmation e-mail. Then your information, along with every other WUE report, will be available online. Also, don't forget to report to your customers.

The database will make WUE information more accessible by:

- Making it easier for you to submit your annual WUE report.
- Showing your historical WUE performance.
- Giving the public access to your efforts to achieve water efficiency.
- Allowing you to view WUE reports from neighboring water systems. Now you can see what they're doing to protect our most valuable resource: water!

Important notes about the WUE database:

1. We continue to fix problems and make improvements. As with any new database, it will take time to make sure this new system operates smoothly for you, as the user, and us. Thank you for your patience.
2. You must submit your annual WUE report through the database. We will not accept mail, e-mail, or faxed reports. Submitting your report online saves paper and reduces data transfer errors.
3. Make sure you have the information you need before you begin submitting your report. After 30 minutes of inactivity, the database will automatically close and any data you entered will be lost. You can't save partially completed reports. So, if necessary, print a blank report, fill it out, and then return to the database to fill in the information.
4. You must complete all required fields. The database won't allow you to submit the annual report unless you complete the required fields, such as annual total production (water pumped and purchased), authorized consumption for the year, and your customer goal.
5. You can save and print the report after you submit it. Print copies for your own records after you successfully submit it for the year.

We hope you find the new WUE annual reporting database useful and simple. If you have comments or questions about the database, call our help desk at (360) 236-3113 or e-mail HelpDeskEH@doh.wa.gov

Groundwater Rule... *(Continued from Page 6)*

aquifer. This usually occurs in shallow unconfined aquifers and affects shallow wells. Fecal contaminants can enter a well from the surface along its casing, or through cracks if the well is not properly constructed, protected, or maintained.

How the rule will help

The rule will identify sources at risk for fecal contamination by requiring testing and corrective action if *E. coli* is detected in groundwater. To identify and correct deficiencies, there also will be more frequent sanitary surveys. Water systems with 4-log (99.99 percent) disinfection may choose to monitor chlorine to ensure it's always at a level that will inactivate pathogens, instead of source water testing.

You are the best defense against fecal contamination! Inspect your system components regularly and correct any problems you see. Perform regular and preventive maintenance. Collect your coliform samples as required and follow up promptly on unsatisfactory samples.

For more information, call our regional office:

Eastern Region, Spokane Valley	(509) 329-2100
Northwest Region, Kent	(253) 395-6750
Southwest Region, Tumwater	(360) 236-3030

Start-up tips for seasonal water systems

If your operating season is summer, it's time to think about starting up your water system. The start of your season will be trouble-free if you take steps to ensure there are no coliform bacteria in the water system when you begin serving water to the public.

Start by using the *Small Water System Startup Shut-Down Self-Inspection Checklist (331-312) as a guide to:**

Inspect the system. Inspect all components of your water system, including your distribution lines. If you identify any deficiencies, make all necessary repairs.

Activate the source(s). Turn on the power to your source pump(s). Record the source meter reading. If you don't have a source meter, arrange to have one installed. Disinfect the level probe, then measure and record the static water level in your well(s). If you don't have a level probe, contact your local health jurisdiction to see if you can borrow one. If you don't have a source sample tap, arrange to have one installed.

Activate the treatment system, if applicable. Turn on the power to any treatment equipment. For a chlorinated system, purchase fresh chlorine, mix fresh feed solution, replace or clean all lines and parts, and verify the feed rate of the feed pump. For other treatment, refer to the manufacturer, your operating procedures, or consult with your regional engineer.

"Open" the system. Run water through the entire water system by opening up hydrants, blow-offs, and faucets. Make sure all pressure tanks are pressurized.

Disinfect and flush. Disinfect and flush all sources, pressure tanks, storage tanks, and distribution lines. Tips are in ***Emergency Disinfection of Small Systems**** (331-242). If anyone has access to the water during your disinfection process, chlorinate using a dose of 2 parts per million (ppm). If no one has access to the water, chlorinate at 5 ppm. Leave chlorinated water in the system components and distribution lines for at least 24 hours. After a minimum of 24 hours, flush all components and the distribution lines beginning with the taps closest to the source(s.) If you have a storage tank, watch the water level in it to ensure that you maintain 30 pounds per square inch of pressure in the lines. Dechlorinate flushed water before discharging it near surface water bodies such as lakes, streams, and ponds.

Collect coliform samples. At least two weeks before you open your system to the public, collect several coliform samples at different locations in your distribution system to ensure all areas are free of coliform bacteria. We recommend you collect these samples when:

- There is zero free chlorine residual measured throughout the system in a system that is not continuously chlorinated.
- The free chlorine residual is at whatever level is 'normal' or required for a system that is continuously chlorinated.

Follow the ***Coliform Sampling Procedure**** (331-225). Check the "Sample Collected for Information Only" or the "Other" box under "Type of Sample" on your lab slip. These samples will not count for compliance.

Respond to unsatisfactory coliform samples. Re-evaluate the water system. There are tips in ***Troubleshooting Checklist for Coliform Contamination**** (331-180). Call our regional office for assistance.

Add these things to your "to do" list

- **Review your Water Facilities Inventory (WFI)** to ensure the contact person, population figures, and other information are correct. Note changes and send a copy to us.
- **Review the coliform sampling schedule** in Box 33 of the WFI. Mark your calendar on the day each month you intend to collect your coliform sample. We recommend you collect samples in the first or second week of each month. Be sure to know where to drop off or mail your sample and your lab's schedule for accepting samples for analysis.
- **Collect other water quality tests** as needed, such as your annual nitrate sample from each source.
- **Test all backflow prevention devices** using a certified backflow assembly tester. Have repairs made if needed.
- **Open and shut each valve** in your system to ensure that all are operable.
- **For your treatment system:**
  - **Refine treatment operations.** Understand water flow rate, chemical feed rates, pressure differentials, and so on. Make sure the treatment system is removing, or adding, what it was designed for by measuring it.
  - **Calibrate all instruments.**
  - **Inventory supplies** and order what you need for the entire season.
  - **Check the area where backwash discharges** (if applicable) to ensure there is no blockage and water can drain freely. Make sure backwash water can't re-enter the water supply.

Questions

If you have questions, please call our regional office:

Eastern Region	(509) 329-2100
Southwest Region	(360) 236-3030
Northwest Region	(253) 395-6750

*You can download or order publications online at <https://fortress.wa.gov/doh/eh/dw/publications/publications.cfm> or by calling (800) 521-0323.

Drinking Water State Revolving Fund loan cycle changes

To give water systems an opportunity to take advantage of new federal requirements, such as "green" projects, we reopened the application period for the current Drinking Water State Revolving Fund loan cycle. October 6, 2009, was the original deadline. But, from February 1 to March 1, 2010, we accepted new applications and allowed applicants who wanted to emphasize the green aspects of their projects to reapply.

The Drinking Water State Revolving Fund is a state-run, federally funded construction loan program. It provides low-interest loans to help water systems address public health problems and compliance issues.

The program has about $58 million available to lend this year. Of that, about $24 million is new federal funding. The rest includes loan repayments, interest, and a state contribution. The available funding is up considerably from the $40 million available for the 2008 loan cycle.

The additional money comes with some strings:

- About $7 million must be dedicated to "green" infrastructure projects that have significant water use efficiency or energy efficiency benefits, or projects that use other innovative ways to protect the environment.
- About $10.5 million will be used for subsidies. This means some of the principal for low-interest loans won't have to be repaid in disadvantaged and economically distressed communities. We'll also use the subsidies for water system restructuring projects that involve a change of ownership.
- Borrowers must comply with federal prevailing wage requirements.

"We're thrilled there will be more money available for loans this year," said Denise Clifford, director of the Office of Drinking Water. "This means we'll be able to do more to help water systems protect the health of their customers."

For information about the DWSRF loan program and the current funding cycle, visit us online at <http://www.doh.wa.gov/ehp/dw/our_main_pages/dwsrf.htm>

Small Communities Initiative... *(Continued from Page 1)*

funding came too late to benefit Ione, but the town did secure about 75 percent of project funding in the form of grants.

The Pend Oreille PUD has worked on fixing the aging Metaline Falls water system since 1995. They are seeking as much grant funding as possible because Metaline Falls water rates are already high. Last year, the PUD rehabilitated the source water intake and replaced a key transmission main, using $780,000 in CDBG grants. As funding becomes available, future projects will continue replacing the distribution system.

While filtration plants are critical for public health protection, they are expensive to build and they increase operation and maintenance costs for the water system. Luckily, all three projects benefited from a favorable bidding climate in 2009, which kept construction costs well below original estimates. In addition, all three water systems were able to secure very low-interest loans and grants only available to low- and moderate-income communities.

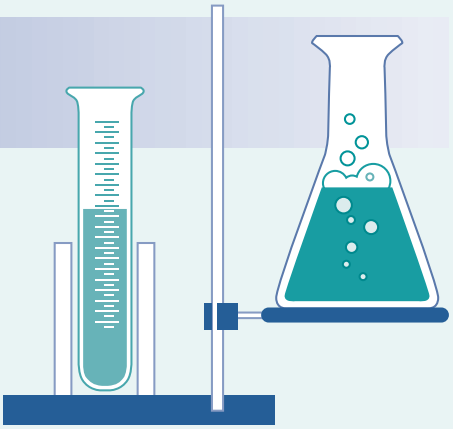
Despite the project cost savings and grants, the water systems ultimately had to raise user rates to pay for new operations and maintenance expenses. It was especially difficult to make this decision in the midst of the current economic conditions. Like many small communities in Washington, these three towns face economic challenges, with unemployment rates well above the state average.

For more information

To find out how technical assistance providers such as the Small Communities Initiative can help you with your project, please call our regional office:

Eastern Region	(509) 329-2100
Northwest Region	(253) 395-6750
Southwest Region	(360) 236-3030

LAB CORNER



Timing is everything!

The law requires water systems to test water for different things and report by certain times throughout the year. We use our computer system, Sentry, to help determine whether systems fulfill their monitoring requirements. This only works when the data from the lab slips are entered into Sentry. To avoid monitoring violations, they must be entered by the 15th of the following month.

We noticed that a problem occasionally occurs when labs hold onto lab slips for extended periods. For example:

A water system takes a routine monthly coliform sample late in the month. The lab analyzes the sample in the appropriate time, but batches the slips and doesn't mail them until the 12th or 13th of the next month. Add a weekend or a holiday and our data entry staff may not be able to get the information into Sentry before it creates monitoring violations.

Laboratories could eliminate this problem by batch mailing their lab slips at least once a week. Otherwise, labs must pay special attention to certain times when they must submit data. These times usually run around the end of months, quarters, years, and occasionally the end of 3-, 6-, and 9-year time periods.

So, please mail lab slips to us every week and encourage your water system customers to sample early in the month.

Lab Slip Tip

Important water system information

Lab Corner (left) advises labs to mail lab slips to us at least once a week. But, water systems also play a part in making sure your sampling results reach us in a timely manner.

For example, we usually get lab slips within six weeks after you collect the sample. All Group A and B water systems should have their labs send us a copy so we can enter your results into Sentry.

If you get a reminder postcard at least six weeks after you took your sample, and you marked your lab slip "send copy to DOH," or you have an agreement with the lab to do so:

- Ask the lab if it may have missed sending a copy to us.
- Confirm that you instructed your lab to send lab slip copies to the state Department of Health. If the lab sends the copies anywhere else, we may not receive them and you may not get credit for your sample.

Our address is Department of Health, Office of Drinking Water, P.O. Box 47822, Olympia, WA 98504-7822.

Four new locations

Waterworks exam testing sites

Washington State uses computer-based exams for waterworks operators. Applied Measurement Professionals, Inc. (AMP) provides testing sites for the Association of Boards of Certification (ABC) computer-based exams. Waterworks operators can take their certification exam at testing sites in the following locations:

Bellevue	Spokane	*Everett	Tacoma	*East Wenatchee
*Vancouver	*Kennewick	Yakima	Portland, Oregon	Other AMP locations, nationwide

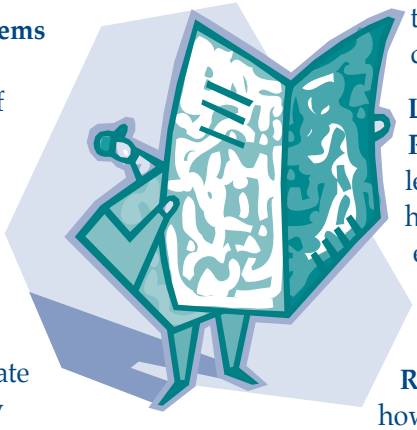
**New locations*

For information about the Waterworks Operator Certification Program, call (800) 525-2536.

For information about AMP and its testing service, visit the Web site at <http://www.goamp.com/>

New & Revised Publications

Asset Management for Small Water Systems (331-445). New! Four pages will help you understand asset management, benefits of asset management, best practices in asset management, and how to implement an asset management program.



Historical and Cultural Review - Section 106 (331-446). New! Four pages explain how the National Historic Preservation Act requires the state's Drinking Water State Revolving Fund Program to consider how a project will affect historic and culturally significant properties.

Groundwater Rule: What you need to know (331-447). New! Five pages explain how the federal rule builds on the Total Coliform Rule by addressing the health risks of fecal contamination in groundwater sources used by public water systems.

Office of Drinking Water authority over operators and water systems (331-449). New! Two-page fact sheet outlines our authority to ensure public water systems always provide their customers an adequate and safe drinking water supply.

Lead and Copper Monitoring (331-111). Revised. Three pages discuss distribution system monitoring requirements, action levels for lead and copper, selecting sample sites, and sample collection procedures.

Water System Design Manual (331-123). Revised. A 319-page start-to-finish electronic reference for engineers and others involved in water system design. It covers the design, review and approval of sources, storage reservoirs, booster pump stations, water treatment facilities, and other aspects of designing water systems.

Lead in Drinking Water (331-177). Revised. Two-page fact sheet discusses lead, how it gets into drinking water, health effects, ways to reduce lead exposure, how to measure it, and drinking water regulations.

Copper in Drinking Water (331-178). Revised. Two-page fact sheet explains how copper gets into drinking water, health effects, and how to detect it.

Nitrate Sampling Procedure (331-222). Revised. Two-page brochure explains how to collect water samples for nitrate laboratory testing. Discusses containers, timing, sampling points and methods, forms, and procedures.

Lead and Copper Sampling Procedure (331-227). Revised. Two-page brochure explains where, when, and how to take water samples for lead and copper monitoring.

Financial viability for small water systems (331-405). Revised. Four pages explain how to obtain sufficient funds to develop, construct, operate, maintain, and manage a public water system, in full compliance with local, state and federal requirements.

For copies of Office of Drinking Water publications, call (800) 521-0323 or visit the Web site at <https://fortress.wa.gov/doh/eh/dw/publications/publications.cfm>

Get e-mail copies of new and revised publications. Sign up at <http://listserv.wa.gov/cgi-bin/wa?SUBED1=wa-drinkingwaterpub&A=1>

Apply NOW for a 2012 Public Works Trust Fund Construction loan

Loans up to $10 million! Interest rates as low as 0.25%!

About $236 million is available for local government infrastructure projects. Applications are due by 6 p.m., Tuesday, May 11, 2010. For details, visit the Web site at <http://www.pwb.wa.gov/> or call (360) 725-3150. **The Governor and the Legislature must agree to appropriate funds for this cycle during the 2011 Legislative Session. Please check with the Public Works Board for continuing updates about the cycle and the prospects of funding.**

Training and Education Calendar: March - June 2010

Date	Topics	Location	Contact	Phone #	Cost/CEU
March 8-12	Backflow Assembly Tester Certification Course	Auburn	WETRC	1-800-562-0858	$665/3.7
March 8-12	Backflow Assembly Tester Certification Course	Spokane Valley	WETRC	1-800-562-0858	$665/3.7
March 9	Excavation Safety / Competent Person Certification	Issaquah	ERWOW	1-800-272-5981	$110/$135/0.7
March 10	Bacteriological Sampling Basics for Small Systems	Anacortes	ERWOW	1-800-272-5981	Free/0.4
March 10	Confined Space Entry for Water & Wastewater Utility Workers	Shelton	ERWOW	1-800-272-5981	$110/$135/0.7
March 11	Cross-Connection Control Specialist Certification	Shelton	ERWOW	1-800-272-5981	$110/$135/0.7
March 11	SEMS-Water/Wastewater Ops & Compliance Reporting	Friday Harbor	ERWOW	1-800-272-5981	Free/0.4
March 16	Basic Water & Wastewater Chemistry	Shelton	ERWOW	1-800-272-5981	$65/$95/0.4
March 16	Interpreting Utility Maps and Drawings	Bellingham	ERWOW	1-800-272-5981	$80/$105/0.5
March 17	Small System Board Training	Mt. Vernon	ERWOW	1-800-272-5981	$60/$85/NA
March 17-19	Water Distribution Certification Exam Review	Spokane	WETRC	1-800-562-0858	$305/2.1
March 22-25	32nd Annual Washington Operator Workshop (WOW)	Wenatchee	WETRC	1-800-562-0858	$175/2.4
March 26	Basic Electrical for Water & Wastewater Utilities	Bremerton	ERWOW	1-800-272-5981	$110/$135/0.8
March 26	WAC Review	Moses Lake	ERWOW	1-800-272-5981	$110/$135/0.7
March 30	Interpreting Utility Maps & Drawings	Yakima	ERWOW	1-800-272-5981	$80/$105/0.5
March 30	Managing a Public Water System	Pt. Angeles	ERWOW	1-800-272-5981	$110/$135/0.7
March 31	Excavation Safety/Competent Person Certification	Spanaway	ERWOW	1-800-272-5981	$110/$135/0.7
April 1	Intro Water Rights/Watershed Planning & In-Stream Flows	Pt. Angeles	ERWOW	1-800-272-5981	$110/$135/0.7
April 2	BTO/WTPO OIT & Level 1 Certification Exam Review	Spokane	WETRC	1-800-562-0858	$130/0.7
April 6	Basic Water and Wastewater Chemistry	Longview	ERWOW	1-800-272-5981	$65/$95/0.4
April 6	Water Audits and Leak Detection – A General Overview	Moses Lake	ERWOW	1-800-272-5981	TBA
April 6-7	Components of a Small Public Water System	Shelton	ERWOW	1-800-272-5981	TBA
April 7	Water System Math	Kennewick	ERWOW	1-800-272-5981	TBA
April 8	SEMS-Water/Wastewater Ops & Compliance Reporting	Walla Walla	ERWOW	1-800-272-5981	Free/0.4
April 8	Water Audits and Leak Detection – A General Overview	Omak	ERWOW	1-800-272-5981	TBA
April 12-14	Water Distribution Manager Certification Exam Review	Moses Lake	ERWOW	1-800-272-5981	$225/$275/2.2
April 12-16	Backflow Assembly Tester Certification	Auburn	WETRC	1-800-562-0858	$675/3.7
April 13-15	Cross-Connection Control Specialist Cert Exam Review	Olympia	ERWOW	1-800-272-5981	$225/$275/2.1
April 13	Water Meter Technology	Issaquah	ERWOW	1-800-272-5981	$90/$115/0.6
April 14	Excavation Safety / Competent Person Certification	Friday Harbor	ERWOW	1-800-272-5981	$110/$135/0.7
April 14	Water/Wastewater Utility Confined Space Entry	Auburn	WETRC	1-800-562-0858	$159/0.7
April 14-15	Components of a Small Public Water System	Liberty Lake	ERWOW	1-800-272-5981	TBA
April 14-18	Backflow Assembly Tester Certification Course	Auburn	WETRC	1-800-562-0858	$675/3.7
April 15	Water Meter Technology	Vancouver	ERWOW	1-800-272-5981	$90/$115/0.6
April 15-16	Competent Person for Cave-In Protection	Auburn	WETRC	1-800-562-0858	$259/1.4
April 20-21	Advanced Backflow Assembly Test/Troubleshoot/Repair	Auburn	WETRC	1-800-562-0858	$305/1.4
April 20-22	Water Distribution Manager Certification Exam Review	Olympia	ERWOW	1-800-272-5981	$225/$275/2.2
April 20	Interpreting Utility Maps & Drawings	Spanaway	ERWOW	1-800-272-5981	$80/$105/0.5
April 21	Basic Control Valves	Shelton	ERWOW	1-800-272-5981	$85/0.7
April 22	Are You Ready? Being Prepared for Your Sanitary Survey	Auburn	WETRC	1-800-562-0858	$179/0.7
April 23	WAC Review	Olympia	ERWOW	1-800-272-5981	$110/$135/0.7
April 27	Small System Board Training	Omak	ERWOW	1-800-272-5981	$60/$85/NA
April 27-29	Water Works Basics	Mt. Vernon	WETRC	1-800-562-0858	$305/2.1
April 29	Interpreting Utility Maps & Drawings	Pullman	ERWOW	1-800-272-5981	$80/$105/0.5
April 29	Small System Board Training	Liberty Lake	ERWOW	1-800-272-5981	$60/$85/NA

Training and Education Calendar: March - June 2010

Date	Topics	Location	Contact	Phone #	Cost/CEU
May 4	Chemical Feed-Chlorination	Shelton	ERWOW	1-800-272-5981	TBA
May 4	Interpreting Utility Maps & Drawings	Longview	ERWOW	1-800-272-5981	$80/$105/0.5
May 4-6	Basic Electrical	Spokane	WETRC	1-800-562-0858	$315/2.1
May 5	Chemical Feed-Chlorination	Moses Lake	ERWOW	1-800-272-5981	TBA
May 6	Basic Water and Wastewater Chemistry	Bonney Lake	ERWOW	1-800-272-5981	$65/$95/0.4
May 11	Bacteriological Sampling Basics for Small Systems	Walla Walla	ERWOW	1-800-272-5981	Free/0.4
May 11	Intro Water Rights/Watershed Planning & In-Stream Flows	Kennewick	ERWOW	1-800-272-5981	$110/$135/0.7
May 11	Water Audits and Leak Detection – A General Overview	Mt. Vernon	ERWOW	1-800-272-5981	TBA
May 11-13	Water Distribution Certification Exam Review	Everett	WETRC	1-800-562-0858	$315/2.1
May 12	Bacteriological Sampling Basics for Small Systems	Goldendale	ERWOW	1-800-272-5981	Free/0.4
May 12	Introduction to Pumps	Auburn	WETRC	1-800-562-0858	$150/0.7
May 12	Intro Water Rights/Watershed Planning & In-Stream Flows	Yakima	ERWOW	1-800-272-5981	$110/$135/0.7
May 13	Water Audits and Leak Detection – A General Overview	Longview	ERWOW	1-800-272-5981	TBA
May 18	Excavation Safety/Competent Person Certification	Yakima	ERWOW	1-800-272-5981	$110/$135/0.7
May 18-20	Backflow Assembly Tester Refresher	Auburn	WETRC	1-800-562-0858	$360/2.1
May 19	Small System Board Training	Kennewick	ERWOW	1-800-272-5981	$60/$85/NA
May 19-21	Pump Operation & Maintenance	Spokane	WETRC	1-800-562-0858	$335/2.1
May 21	Basic Electrical for Water & Wastewater Utilities	Ellensburg	ERWOW	1-800-272-5981	$110/$135/0.8
May 25-27	Water Treatment Plant Operator Certification Exam Review	Shelton	ERWOW	1-800-272-5981	$225/$275/2.1
May 26-27	Fire Hydrants: Install, Test, Operate and Repair	Auburn	WETRC	1-800-562-0858	$265/1.4
May 27	CCC Specialist Certification Exam Review	Moses Lake	ERWOW	1-800-272-5981	$110/$135/0.7
May 28	SEMS-Water/Wastewater Ops & Compliance Reporting	Yelm	ERWOW	1-800-272-5981	Free/0.4
June 1	Water Conservation from a Utilities Standpoint	Omak	ERWOW	1-800-272-5981	TBA
June 1-3	Water Distribution Manager Certification Exam Review	Moses Lake	ERWOW	1-800-272-5981	$225/$275/2.2
June 2	CCC Specialist Certification Exam Review	Mt. Vernon	ERWOW	1-800-272-5981	$110/$135/0.7
June 2	Water Conservation from a Utilities Standpoint	Colville	ERWOW	1-800-272-5981	TBA
June 2-4	Water Works Basics	Auburn	WETRC	1-800-562-0858	$305/2.1
June 4	WAC Review	Moses Lake	ERWOW	1-800-272-5981	$110/$135/0.7
June 7-9	Pump Operation & Maintenance	Mt. Vernon	WETRC	1-800-562-0858	$335/2.1
June 8	Confined Space Entry for Water & Wastewater/Utility Workers	Longview	ERWOW	1-800-272-5981	$110/$135/0.7
June 14-18	Backflow Assembly Tester Certification	Auburn	WETRC	1-800-562-0858	$675/3.7
June 16	Refreshing Your Emergency Response Plan	Yakima	ERWOW	1-800-272-5981	TBA
June 17	SEMS-Water/Wastewater Ops & Compliance Reporting	Yakima	ERWOW	1-800-272-5981	Free/0.4

Our training calendar is updated monthly; please visit the additional training links for current information.

For information about distance learning activities, call Certification Services, Green River Community College at (877) 780-2444, Ext. 3.

Additional Training Links:

AWWA King County Subsection Web site <**http://www.kcawwa.org/**>

ERWOW Web site <**http://www.erwow.org/**>

WETRC Web site <**http://www.wetrc.org/**>

AWWA Pacific Northwest Section Web site <**http://www.pnws-awwa.org/**>

EPA Electronic Workshops Web site <**http://www.epa.gov/safewater/dwa/electronic.html**> (No CEU assigned to these courses.)

Partnership for Water Conservation <**http://www.partners4water.org**>

For the complete Training Calendar, visit the Drinking Water Homepage and click on Training - <http://www.doh.wa.gov/ehp/dw>

NOTE: Links to external resources are provided as a public service and do not imply endorsement by the Washington State Department of Health.

Reducing consumer demand while saving water for future growth

By Brian Faust, National Water Company

Water efficiency involves the distribution system, as well as the water lines on the private side of the meter. However, making homeowners aware of the amount of water they use and then educating them on why it matters, is only part of a successful plan. Giving them resources to achieve your water system's water efficiency goals also is critical. Homeowners often do not have the resources, especially when there is an emergency where the costs of a leak or break are very expensive.

"Achieving water efficiency isn't just about meeting the state mandated 10 percent distribution system leakage standard," said Mike Dexel, water resource lead at the Office of Drinking Water. "Municipalities should also explore ways to help their customers reduce water losses on the homeowner side."

Step One: Awareness

Teaming up with homeowners is a powerful, collaborative way to save water for your community.

How much water does a typical homeowner use? Most people underestimate their household water use and think they only use a few hundred gallons per month. In fact, most single-family homes use more than 15,000 gallons per month. There are resources available for calculating monthly household water use. National Water Company provides an online water calculator for homeowners. Click the "Education" tab, then "Water Calculator" at <http://www.nationalwatercorp.com/>

How much water is lost on the private side of the meter? The real answer is "nobody knows exactly." However, according to data collected by municipal, state, and federal agencies, for every gallon lost due to leakage from public water lines or water mains, another gallon may be lost on the private side of the meter. Furthermore, many cities and private water systems have limited or no reserve water, so helping homeowners eliminate leaks or save water on the private side of the meter provides an inexpensive and cost-effective opportunity for communities to continue to grow.

Step Two: Education

After homeowners know how much water they use each month, they can use the water saving tips for homeowners, below, to create a Household Water Efficiency Plan.

(Continued on next page, top)

Water Saving Tips for Homeowners

These ideas could save 50 percent or more of a household's water usage.

1. Create a Household Water Efficiency Plan.
2. Know the location of the main water valve at the city meter and the home's water shut-off valve to isolate a possible leak inside or outside the home.
3. Walk your property seasonally to detect possible leaks.
4. Look for water pooling; dripping, or leaking outside faucets; and soft areas in the ground.
5. Occasionally check your water meter. A meter that runs when no water is on inside or outside of the home indicates a leak.

Inside the home:

1. Install low-flow showerheads and low-flow faucet aerators.
2. When you upgrade your dishwasher, laundry washer, or toilet, select a low-flow or water efficient model.
3. Turn off water when brushing teeth and washing hands.
4. Rinse razor in the sink.
5. Check faucets, showerheads, and pipes for leaks.
6. Check for running toilets.
7. Insulate hot water pipes.
8. Take shorter showers.
9. Run the dishwasher and clothes washer only when full.
10. Minimize use of the kitchen garbage disposal.
11. When washing dishes by hand, do not leave the water running for rinsing.
12. Do not use your toilet as a garbage can.
13. Keep a pitcher of drinking water in the refrigerator.
14. When you have a leaky toilet or faucet, call a certified plumber right away. Until it's fixed, turn the water valve off when not in use.

Outside the home:

1. Check faucets and pipes for leaks.
2. Monitor irrigation or sprinkler times and change or turn off when rain is more prevalent.
3. Position sprinklers to water only what you want. Don't water sidewalks and streets.
4. Water early in the day. Don't water when it's windy.
5. Put mulch around trees and plants to absorb water and decrease watering time.
6. Use a drip-irrigation system for shrubs and trees.
7. Use a spray nozzle and bucket when washing your car.
8. Use a broom and not a hose to clean your driveway or sidewalk.
9. Check irrigation or sprinkler lines in the spring for leaks or breaks.
10. Check water bills for unexpected high usage.

For more tips, visit <http://www.nationalwatercorp.com/> Click the Education Tab and then "Saving Water Tips."

Reducing Consumer Demand... (Continued from Page 14)

Step Three: Resources

Municipalities and private water systems are working hard to detect leaks, upgrade infrastructure, and educate staff on how to reduce water loss more effectively. This takes a team of people planning and developing real solutions to difficult aging infrastructure. But, homeowners don't have the same resources available to them.

As communities age across the United States, the probability of leaks from older water pipes and related infrastructure will increase dramatically. That will put additional financial pressure on residents in communities where owners bear responsibility for all water line repairs between the main service pipe and their homes.

As a result, it is the homeowner's responsibility—and in his or her best interest—to take action. Homeowners are ultimately responsible financially for their water usage and, in many cases, maintenance of their private water distribution lines from the city meter to their home.

Nevertheless, the water system can feel good about taking the lead and accepting the homeowner as part of the team in helping to save water for the community.

Water systems can give homeowners peace of mind while also helping to save millions of gallons each year for future growth, by making them aware of warranties and insurance plans available to help them repair or replace water and sewer lines when a leak or break occurs. For information about warranties and insurance plans, contact National Water Company toll-free at (888) 565-6426.

Brian Faust is the national account director of National Water Company, a water conservation, education, and leak detection company. For more information, call Brian Faust at (888) 565-6426 or visit the Web site at <http://www.nationalwatercorp.com/>

2009 WUE Annual Report Summary

Last year, for the first time, we required all municipal water suppliers (publicly owned Group A community water systems) to submit annual water use efficiency (WUE) reports. We are proud to report that 85 percent of you submitted your reports. You're clearly motivated to jump-start one of the nation's most comprehensive regulatory WUE programs.

The reports revealed some successes and some areas for improvement in 2010.

2009 WUE Report by the numbers

9.3 = median percent of leakage. (Half the systems are below 9.3 percent and half are above.)

10 = water systems that reported negative water loss. That means they sold more water than they pumped! These numbers indicate some water systems need better data. Having accurate water use data will be half the battle as systems start to understand the amount of water physically leaking from their systems.

14 = state average percent of distribution system leakage.

85 = percent of water systems that submitted their annual WUE reports.

312 billion = gallons of total production (pumped or purchased from another water system).

25 billion = gallons reported as distribution system leakage. This includes real losses, such as physical leaks, and apparent losses, such as theft and meter inaccuracies.

2009 successes

1. You understood the annual requirement to report to us and your customers by July 1.
2. You took several steps to better manage your systems' water loss and efficiency. These efforts will allow you to monitor water use patterns, and lead to better decision-making when it comes to saving water and managing water loss:
   - Understanding that collecting good water use data is critical.
   - Determining what you can do differently to ensure you're reporting the most accurate numbers.
   - Calibrating source meters and replacing old service meters with new auto-read technology.
   - Beginning to install meters on authorized uses that have never been metered, such as city parks, town hall, and fire hydrants.

Areas for improvement in 2010

Set goals for your customers. More than half of the 525 or so reports we received needed technical assistance to establish a customer goal that meets the minimum criteria. We sent letters to all systems that did not set a customer goal that met the WUE requirements. We hope those efforts will help systems improve in 2010.

Remember, the WUE rule isn't just about fixing leaks and replacing meters. Your customers are equally important in

(Continued on page 16)

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(800) 521-0323

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Fix a Leak Week

EPA WaterSense

March 15-21, 2010

To see how you can remind your customers to save water by simply fixing leaks, visit the WaterSense Web site at <http://www.epa.gov/watersense/water_efficiency/fix_a_leak.html>

Visit the Office of Drinking Water online at <http://www.doh.wa.gov/ehp/dw/>

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WUE Annual Report... *(Continued from Page 15)*

achieving water efficiency. So, for the 2010 report, make sure you:

- Establish a customer goal that meets WUE requirements.
- Clearly state the customer goal in every annual WUE report.

Three important points to remember when you set a mandatory goal for your customers:

1. **Focus on customer water use,** such as gallons per single family home or connection. Goal example: Reduce average daily demand per connection from 310 to 260 gallons in five years.
2. **Identify a measurable water savings,** such as reducing use by 10 gallons per day or 3 percent per year. Goal example: Reduce seasonal outdoor water use by 3 percent by December 31, 2012.
3. **Identify when the goal will be achieved,** such as by 2014 or within six years. Goal example: Save five gallons per family home per day by 2014.

What you do today to use water efficiently will help you meet the demands of a growing population. Even if your water system isn't serving new customers, consider the uncertainty of future climate changes that could affect your water supply. These considerations make the WUE program extremely important. Keep up the good work by pursuing water efficiency practices and establishing meaningful goals for your water system and customers.

For more information about WUE, call Mike Dexel, water resource lead, at (360) 236-3154 or e-mail michael.dexel@doh.wa.gov

In This Issue

The following people contributed to the production of this issue of *Water Tap*:

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The Department of Health Office of Drinking Water publishes Water Tap quarterly to provide information to water system owners, water works operators and others interested in drinking water.

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