



Eco Wise



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Water Wise Indoor Water Conservation

Water and sewer charges vary widely across the country, but cost on average less than 1/2 cent/gallon nationwide. At such low rates, water conservation may not seem like a high priority, but saving water benefits you, your residents, and the greater community. Less water down the drain means less needs to be treated to drinkable quality, pumped to the home, heated and then pumped away and treated as sewage. Water efficiency reduces the burden on our already strained freshwater supplies, saves money by avoiding the need for new municipal water treatment facilities, and saves energy for pumping and heating water.

Even if you don't pay much for water and sewer, you probably pay for energy. Water heating accounts for nearly 25 percent of residential energy use in buildings with 5 or more housing units. By reducing the amount of water that needs to be heated, you can significantly lower energy bills.

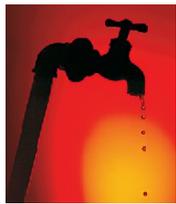
Toilets

Toilets account for 31 percent of household water use, the most of any single appliance. The average American flushes 18.5 gallons of water down the toilet every day. In 1992, the [Environmental Protection Agency](#) (EPA) increased water efficiency standards from 3.5 gallons per flush (gpf) to 1.6 gpf. Replacing pre-1992 toilets can cut overall indoor water consumption by 15 percent. Dual-flush toilets and High Efficiency Toilets (HETs) can provide even greater water savings. Not all toilets are created equal. The [California Urban Water Conservation Council](#) tests various models and reports on performance.



High efficiency toilets can reduce water use by over 15 percent.

Faucets and Showerheads



A faucet leaking one drop per second will waste over 1,000 gallons of water each year.

About half the hot water consumed in a typical household is for bathing, and another 7 to 14 percent is used in the sink. Faucet aerators are inexpensive, easy to implement, and save a surprising amount of water. By reducing the flow of water coming from the showers and faucets, water efficient showerheads and faucet aerators can generate significant energy savings.

Aerators are small devices that screw on to the faucet to reduce water flow to 2.0, 1.5 or 1.0 gallons per minute (gpm) at normal pressures. While they reduce the amount of water used, they also often make the flow more forceful and provide more effective wetting and rinsing.

Choose the lowest flow available for bathroom faucets, used primarily for brushing teeth and washing hands. In the kitchen, 2.0 gpm will save water without forcing cooks to wait too long to fill up pots for cooking.

Clothes Washers

Efficient clothes washers offer water and energy savings, since there is less water to heat. [ENERGY STAR® qualified clothes washers](#) in common area laundry rooms will save \$123/year in water and energy savings compared to new non-qualified models. Water conservation experts recommend a water factor of 7.5 or better.



Efficient front-loading washers save water and energy.

Submetering

[Studies have shown](#) that making residents responsible for their own water bills reduces water use by 15 percent. Retrofitting a building with submeters costs around \$525 per meter installed. According to surveys, residents have mixed opinions about being billed for water; most think it should be included in the rent. State and local regulations may apply. Water companies gain from water efficiency, and may be convinced to share the first cost of submeters.

This Issue The Water and Moisture Issue



- **Water Wise**
- **Events & Training**
- **Water Woes**
- **2 Most Common Types of Moisture Issues**
- **Resources**
- **Maintenance Corner: Indoor Water Conservation Tips for Residents and Staff**

Events & Training

[Green Homes and Sustainable Communities](#)
August 7-8
Chicago, IL

[2008 ACEEE Summer Study on Energy Efficiency in Buildings](#)
August 17-22, 2008
Pacific Grove, CA

[2008 NeighborWorks Training Institutes](#)
August 18-22
Chicago, IL

[2008 National Healthy Homes Conference](#)
September 15-17
Baltimore, MD

[Multi Housing World](#)
Sept. 17-19
Denver, CO

[Greening Existing Buildings](#)
Sept. 25, 2008
Washington, DC

Water Woes Mold and Moisture Issues

Water is a precious natural resource to be conserved and used wisely, but even a small amount in the wrong place can adversely affect the health of residents and cause damage to buildings. Leaking roofs, condensation on windows and flooded basements are more than annoyances to tenant and landlord; such moisture malfunctions create favorable conditions for mold, and can threaten the structural integrity of a building.

Mold is one of the most common indoor air pollution concerns. There are many types of mold, and reactions vary based on personal sensitivities, so no federal standards have been set. Common reactions include stuffy nose,



Just a little moisture in the wrong place, like this window condensation, can lead to moisture problems.

eye irritation, headaches, shortness of breath, fatigue, and dry cough amongst others. Symptoms are especially pronounced in those with allergies, asthma or other respiratory diseases, or those with compromised immune systems. If tenants complain of symptoms like these, check their unit immediately, as there may be a moisture problem that is leading to mold growth. Other indications of misplaced moisture include rotting wood, rusting metal, moldy surfaces, condensation on windows, peeling paint, and spalling masonry.

Correcting a mold problem properly requires correcting moisture problems, removing the mold, and keeping things dry in the future. The first step is to define the moisture problem. You must determine the source, path, the moisture form, and the driving or pulling force in order to comprehensively address the issue. Most moisture problems fall into two types (see Common Types of Moisture Issues).

Once the problem is defined, it can be solved. In the first example, rerouting the downspouts and possibly re-grading the land around the basement will steer water away from the basement, and be far more effective than pumping water out of the basement every time it rains. In the second case, venting the bathroom fan to the outside (as it should be) will solve the mysterious problem.

The next step is to clean up any mold. The goal of clean-up is to carefully capture and physically remove mold growth to the greatest extent practical; by washing it off the surface of non-porous materials with a soap or detergent and by removing porous materials that have growth on them. A common mistake is to "treat" the mold with some chemical (like bleach) or cover it up instead of removing it. Removal is critical because treated or dead mold can still cause serious health problems. Learn more in our Resources section.

Tips for Residents and Staff

This monthly e-mail update is brought to you by HUD's Public Housing Environmental and Conservation Clearinghouse (PHECC) featuring news and resources to help agencies manage energy and water costs.

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2 Most Common Types of Moisture Issues

- 1) A site specific moisture problem where the problem, source, and path are all close together: For example, water leaking into the corner of a basement (form:bulk) is likely coming in through cracks in the basement wall (path), the water is coming from the downspout that is spilling water in this corner of the house (source) and gravity is carrying the water in (driving/pulling force).
- 2) A moisture problem where both the moisture source and path are not obvious at all and investigation is required to try and find them. For example, dark stains appear on the ceiling throughout the house because the ducts from the bathroom fan (path and driving/pulling force) terminate in the attic, expelling all the steam (form: vapor) from showers (source) which then condenses on the underside of the roof sheathing during the cold winter months and drips down onto the ceiling, damaging insulation and ceiling tiles.



Wet building materials contribute to mold problems in new construction

Resources

[PIH Water Conservation](#)

[California Urban Water Conservation Council](#)

[US EPA Watersense program](#)

[ToolBase Mold & Moisture Issues](#)

[EPA's A Brief Guide to Mold & Moisture in Your Home](#) (also available in [Spanish PDF 795 KB](#))

[Environmental Health Watch Home Moisture Audit](#)

Maintenance Corner: Water Conservation for Residents and Staff

Tips for Residents:

- Check for toilet leaks by placing some food coloring in the tank. If color appears in the bowl without flushing, you have a leak. Fixing that leak can save 400 gallons per month.
- Don't let the water run when shaving, brushing your teeth, or washing your face. Just turning the water on when you need it saves over 3,000 gallons per year.
- Avoid unnecessary flushing. Dispose of tissues, insects and other waste in the trash.
- For baths, close the drain before turning the faucet. To balance the initial burst of cold water, add only hot water later.
- Store drinking water in the refrigerator rather than letting the tap run for a cool glass of water.

Tips for Maintenance Staff:

- Fix leaky faucets and toilets promptly. Leaky faucets can waste 1,000 gallons/year; leaky toilets can waste 4,800 gallons/year!
- Replace showerheads with ultra low-flow versions, saving up to 2.5 gallons per minute. This saves 9,125 gallons per person over the course of a year of ten minute showers.
- When replacing faucets, toilets, or other water-using appliances, find [EPA WaterSense](#) labelled products.
- Sweep the driveway and sidewalk instead of hosing them off. Hoses run about 10 gallons per minute. A 15-minute chore done once a week wastes 7,800 gallons of water a year.
- Insulate hot water pipes. Keeping water hot in the pipes means residents won't let as much go down the drain while they wait for hot water to arrive at the shower. Often, insulating hot water pipes makes it possible to reduce boiler settings from 140 degrees F to 120 degrees, saving energy as well.

Email us with your Maintenance Corner questions at pheccinfo@nelrod.com.