August 2020 Share Package
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Select an Efficient Toilet to Lower Water Bills

Q: What are some toilet options that save water, but that still flush well?

A: There are several inexpensive do-it-yourself options you can try first to improve your existing toilet, but it's probably best to just install a new water-saving model. Toilet-flushing typically accounts for 30% of a household's water use.

If you want to try to improve your existing toilet first, install an inexpensive water dam kit. Flexible panels made of plastic or thin sheet metal fit across the bottom of the toilet tank. These reduce the water volume in the tank, so less water is used each flush. By moving the kit to different positions in the tank, you can adjust the water use to get an effective flush.

Most hardware and home center stores sell replacement water-saving flapper valves for the tank. They are designed to close before the tank totally empties to save water per flush. Select an adjustable valve and give it a try. You may be able to target an effective water-saving flush, but not always based on the toilet internal design.

Depending on how old your toilet is, it may be designed to use 3.5 or 5.0 gallons of water per flush. The average family can save up to $100 a year in water costs by installing water-saving toilets. I recently replaced a 3.5 gpf toilet with a 1.6 gpf toilet that cost less than $60 at The Home Depot. This can provide a payback in less than one year.

The standard for new toilets is a maximum of 1.6 gpf. Many new toilets use only 1.28 gpf, and some are as low as 1.1 gpf. With the new internal water flow designs, they flush effectively with smaller amounts of water.

There are techniques and kits to reduce water use for old toilets, but they sometimes require double-flushes for solid waste.

A standard gravity-type 1.28- or 1.6 gpf-toilet is your best choice for your master bathroom. It flushes effectively and is reasonably quiet. Two-piece (tank and bowl) models are usually less expensive than more stylish one-piece models. They are also easier to handle in two pieces. The only drawback is that the gap between the two pieces is harder to keep clean.

Dual-flush gravity models use either 1.1 or 1.6 gpf for liquids or solids, respectively. On some, you push the handle up or down depending on the flush volume needed. On others, there is a dual push button on top of the tank.

For a new first-floor half bathroom, consider installing a pressure-assist model. The incoming water compresses air in an internal tank. This compressed air creates a forceful, rapid flush. These are common in public restrooms. The flush is louder than with a gravity model, which should not be a problem on the first floor.

If you have several men in your family, consider installing a small wall-mounted urinal in a half bathroom. These use less than 1.0 gpf and flush quickly. To save space, some models are designed to collapse into the wall and are hidden when not in use.

If your house is built on a slab, or when putting a toilet in a basement, it can be difficult to install the drain. In this case, use a macerating toilet that grinds up waste and pumps it upward—up to 15 feet—to an existing drain. These toilets are expensive, but less costly than installing a new drain. ■

For more information or to ask a question about energy savings, go to www.dulley.com.

This is a standard two-piece toilet that uses 1.28 gallons per flush. Its design simplifies assembling the tank to the bowl section. PHOTO BY EARL KENDALL

Convert Your Garage or Basement Into Living Space

Q: What are some options, on a limited budget, to convert a garage or basement into an efficient room?

This room has masonry wall finished with a professional wall system, which consists of pressed fiberglass panels covered with fabric. PHOTO BY OWENS CORNING

A: This is a common project, and probably the least expensive method to add a bedroom. Only one new wall is needed to replace the garage door, so material and labor costs will be reasonable.

The techniques to insulate a wall for converting a garage or a basement into living space are similar. It actually is easier to insulate a basement because much of the wall area is below ground level. This reduces the magnitude of temperature swings across the wall insulation.

If you plan to do the conversion project yourself, adding stud wall framing on the interior is relatively simple. Use 2-by-4, or 2-by-6 in very cold climates. The studs will not carry any weight, so they can be spaced as wide as possible to accommodate the insulation width. When built over a concrete slab or floor, use pressure-treated lumber for the footer.

The location of the vapor barrier for the insulation varies for basements and above-ground garages. For basements, moisture usually flows from the ground through the foundation into the insulation.

Attach a film vapor barrier to the wall before the studs. When using faced fiberglass batt insulation, place the facing against the foundation wall. For above-ground walls, place the vapor barrier toward the room side.

When converting a smaller garage or basement area—where maximizing usable floor space is a concern—attach narrow furring strips to the wall. Place thinner sheets of rigid foam insulation between the furring strips. Rigid foam insulation has a higher R-value per inch thickness than batt insulation.

Foam insulation must be covered by drywall to meet fire codes.

Every room must have an egress window in case of a fire. The window must have an opening at least 20 inches wide and least 24 inches high. The window must have a minimum net clear opening of 5.7 square feet with a maximum sill height of 44 inches above the floor.

A good choice for bedrooms is an acrylic casement-style block window. It looks like a regular glass block window when closed to provide security and privacy. It opens with a crank like a regular casement window for ventilation and egress. It comes as a complete unit.

Many companies—often replacement window contractors—offer conversion systems for garages and basements. Fully insulated wall and ceiling panels are custom-sized to fit your specific project. The cost of these is not outrageous compared to buying all the materials and equipment to do it yourself.

Snap-in insulated fabric-covered panel systems are effective for a bedroom. They provide insulation, block moisture and are relatively soundproof. Look for one where the panels can easily be snapped out to access the old wall or to make other changes. These systems are also good for home theaters.

Don't forget the attic area when converting a garage. Just like in any room, most heat is lost or gained through the attic. Insulate the attic to the code recommendations for your area and place the vapor barrier down toward the living area.

Especially in a bedroom, a cold floor can make you feel uncomfortable. A typical concrete garage slab or basement sucks heat out of the room. Install a breathable insulation panel over the floor and cover that with thick carpet padding and carpeting. Consider installing electric in-floor radiant heating.

A low ceiling height can be a problem with a basement conversion. To minimize the loss of headroom, insulate around the outside of the garage concrete slab. Dig down several feet and place rigid extruded polystyrene insulation panels against the sides of the slab. Make sure to use extruded, not expanded, foam panels for below-ground applications. ■

For more information or to ask a question about energy savings, go to www.dulley.com.

A Small, Modular Power Source

In partnership with the U.S. Department of Energy, a group of small utilities looks toward a nuclear option

By Ginger Meurer

As aging coal plants are retired, electric cooperative and municipal members of Utah Associated Municipal Power Systems plan to fill the void with a first-in-the-nation small modular nuclear reactor project. The Carbon Free Power Project features 12 modules, each capable of producing 60 megawatts of energy on demand.

The $4 billion facility—which has financial support from the U.S. Department of Energy—will be sited at the Idaho National Laboratory near Idaho Falls.

It is expected to be operational by 2027.

Nuclear will join wind, hydropower, solar, waste heat and fossil fuels in the resource portfolio of UAMPS, which provides wholesale electric energy to 47 municipals and cooperatives in California, Idaho, Nevada, New Mexico, Utah and Wyoming.

"Our members are very much committed to replacing coal power with carbon-free electricity, with renewables and nuclear power," says UAMPS spokesman LaVarr Webb. "There's a very strong commitment to reduce pollution, to reduce carbon emissions and to go carbon free.

"The challenge, of course, is that renewable energy is intermittent. The wind doesn't blow all the time, and the sun doesn't always shine. We need firm 24/7, 365-days-a-year energy that will be on all the time and that can really complement and enable the solar and wind projects. We do plan to do more renewable projects, but we have to have that backed up by energy that is 24/7."

That's where the small modular reactors come in. Each of the 12 modules will sit in its own containment vessel, sharing a water-filled, below-ground pool, ready to operate independently on demand. If only a little power is needed to back up a wind project, one can be activated. All 12 can be fired up for maximum output of 720 MW.

"It is challenging to integrate intermittent renewable energy into a system that requires energy to be available, on demand, at all times," says Doug C. Smith, general manager for Lassen Municipal Utility District, based in Susanville, California. "Batteries may be a part of the solution, but they are not practical for supplying energy for long periods of time when intermittent resources are unavailable, and there are still environmental and safety concerns with current technologies."

Smith says small modular reactors can fill this gap, ramping up quickly when renewable resources are not available.

As UAMPS members investigated avenues to secure nuclear power, Webb says they quickly ruled out building the gigantic plants of the past. They turned to NuScale Power—an Oregon-based company developing small modular reactor systems.

"It is vastly different than the traditional large, gigantic nuclear projects that cost tens of billions of dollars," Webb says. "Very few of those are being built anymore. This is the next generation nuclear, which is smaller and safer."

The U.S. Navy uses similar devices to power submarines and aircraft carriers.

"They have safety features built into the projects," Webb says. "If something really bad happened—say, like a major earthquake, and the plant had to shut down—it would cool automatically and wouldn't require any operators or outside electricity."

UAMPS member utilities can choose to participate in specific projects. Not all are part of this project.

Idaho's Lost River Electric Cooperative joined UAMPS about a year ago specifically to participate in the Carbon Free Power Project, says LREC Manager Brad J. Gamett.

As a full-requirements customer of the Bonneville Power Administration, 100% of LREC's wholesale electric power needs are supplied via BPA contract—most, if not all, generated outside Idaho, Gamett says.

Citing the Energy Information Administration, Gamett says more than two-thirds of Idaho's power comes from out of state. Producing more power closer to home is a draw, he adds.

Although LREC likely will continue to get the bulk of its power from BPA, the co-op wants to diversify its resource portfolio and support the project because of its proximity to the co-op's service territory.

"It would be a game changer for eastern Idaho," Gamett says. "It would be the largest single generation source in the state of Idaho and a major employer regionally."

The plan has had some critics, particularly a clean air group in Utah, which prefers renewables and criticizes the economics of the small modular reactors. But Gamett says he hasn't seen much public

NuScale's control room simulator prepares operators to monitor the small modular reactors.

The upper third of a NuScale Power module prototype in Corvallis, Oregon. Two-thirds is underground. A traditional nuclear reactor can be 208 feet high and 131 feet wide. A small reactor is closer to 76 feet high and 15 feet wide. PHOTOS COURTESY OF NuSCALE POWER

resistance to the plan in Idaho.

"There's been a shift in public perception of nuclear power in general," he says. "A lot of major environmental organizations are starting to shift support toward nuclear because the environmental footprint is actually smaller than it is overall with solar and wind installations."

Ken Dizes, general manager of Salmon River Electric Cooperative, says member reaction to the project essentially in "the backyard" of the Challis, Idaho, cooperative has been far more favorable than negative.

As a full-requirements customer of BPA, SREC already is predominantly carbon-free, thanks to its reliance on hydropower.

Dizes says participation in the UAMPS project is inspired by more than just the goal to reach for carbon-free options.

"We believe that nuclear energy should be part of the energy resource portfolio embraced by the world," he says. ■

LMUD Looks to Boost Reliability, Reduce Costs

Lassen Municipal Utility District currently has one point of connection to the electric grid, and "We experience frequent outages, sometimes lasting for several days or even weeks," says General Manager Doug C. Smith.

Usually, LMUD turns to the Honey Lake biomass generator to avoid extended customer outages, but Smith says adding a new interconnection to the eastern side of its service territory will improve reliability—and, through a supply arrangement with Utah Associated Municipal Power Systems—reduce long-term costs.

"Because there are a large number of members, UAMPS can achieve an economy of scale that we cannot," Smith says. "Their business model allows each member to choose whether or not to participate in each individual project, as well as the level of their participation. They also provide power scheduling and resource planning services that have value for us. They have a lot of expertise on their staff that we, as a small utility, can take advantage of."

Smith says that is vital to his Susanville, California-based utility—especially in an ever-changing California utility market.

"Costs have increased dramatically for a lot of utilities, especially smaller ones," Smith says. "Our transmission costs have increased about 400% over the past 15 years, and it appears that trend will continue, especially given that transmission improvements are necessary to address wildfire issues. The expertise UAMPS provides is important to help us navigate that changing landscape without passing unnecessary costs on to our customers."

Smith says LMUD likely will end its power supply relationship with the Western Area Power Administration once the new interconnection is completed.

"They have been a great partner for us," Smith says. "It's ironic that we will be giving up a low-cost, carbon-free resource when we stop taking deliveries from the Central Valley Hydro Project. This is a below-market-priced resource, but the reality is that the cost of transmission to get the energy delivered to us is now higher than the cost of the energy. We believe there will be more economical opportunities through the new interconnection."

Working Together

Hydropower is crucial to a reliable system as intermittent renewables are added to the region's energy mix

By Pam Blair

Power systems require balance at all times. Supply must always equal demand—no more, no less—or the system will crash and the lights will go out.

In the Northwest, hydroelectricity is the key not only to ensuring the region has enough power for a stable, reliable system, but to integrating all other sources of power generation.

By adjusting the amount of water flowing through the dams, hydropower can be increased or decreased quickly to meet changes in demand. It can be ramped up when the wind is not blowing, and dialed down at times of high winds.

"Northwest hydro is such a great resource because it is carbon free and it can be relied upon 24/7," says Public Power Council Executive Director Scott Simms. "The value only increases as resource adequacy becomes more of an issue here."

Adequacy means ensuring there is enough of the right kind of generating resources available at the right time to keep electricity flowing to consumers all of the time.

"With retirement of coal and gas facilities, we are backing ourselves into a corner," says Northwest RiverPartners Executive Director Kurt Miller. "We've campaigned to keep the lower Snake River dams in place. Even with them, we face resource adequacy issues."

Energy efficiency gains have kept load growth relatively flat in recent years, but the region is expected to need another 400 megawatts of always-on generating capacity by 2035, according to the Northwest Power and Conservation Council.

By the Numbers

Northwest hydro—including 31 federal projects—forms the backbone of the region's energy system, supplying 47% of the electricity used annually, with an average of 16,200 megawatts.

Wind provides about 10%, averaging 2,880 MWs a year.

Solar contributes about 1%, averaging 150 MWs annually.

The remainder comes from natural gas, nuclear, coal, biomass and geothermal.

2019 data from the Northwest Power and Conservation Council and U.S. DOE Energy Information Administration

Wind turbines rotate on a ridge above John Day Dam. Because hydropower is always accessible, it complements other forms of renewable energy—such as wind—which is not always available.
PHOTO BY JESSICA SCRIVNER/BONNEVILLE POWER ADMINISTRATION

"Regardless of how one feels about coal and gas power plants, you can't ignore they are there when needed," Simms says. "They are tremendously reliable. Just like hydro, you can call on them and they are dispatched to start producing power."

That's not true of wind.

"Wind is variable and hard to plan for," Miller says. "We can have a period where there is no output at all from wind. Solar also is variable. It's great to add to the mix, but it requires the same partnership with hydro to keep the grid in balance.

"In a carbon-constrained environment, building a coal plant is not an option, and it is not easy to build a gas plant. It makes our existing carbon-free resources even more valuable. Hydro is the cornerstone of our clean energy future. It is the glue that holds it all together."

Simms and Miller say it would be helpful to distinguish between perceptions and actual operating characteristics of

different power resources.

"Energy portfolios are like having a mix of vegetables in your backyard garden," Simms says. "It's good to have a variety if you can, because some do better than others under various conditions. Hydro is like wind and solar in that it is renewable and non-fossil fuel emitting, but it has the added advantage of being predictable and able to respond when needs arise.

"It would be great to get to a place where we can talk openly about the merits and drawbacks of all kinds of power plants so we can have fully informed policy and cost decisions."

Miller echoes the importance of having an educated public.

"People think of generating resource decisions as impacting the planet, but they also greatly affect affordability, reliability and accessibility," he adds.

If energy policies accurately reflected hydro's true value, the region's public power customers would benefit, Simms says.

"As more renewable-friendly policies emerge in the West, we have the opportunity to not only educate people about hydro having similar renewable characteristics as wind and solar, but also high availability or capacity," Simms says.

That could lead to better rates for Northwest customers of the Bonneville Power Administration, Simms says, adding, "Imagine a world in which the intrinsic value of hydro commanded a price premium over other sources in surplus sales transactions."

While some consider battery technology to be a good alternative to dams, Miller notes that batteries face challenges.

"The process for mining the rare earth minerals needed for batteries is carbon-intensive," he says. "They are not renewable. They don't have a second life. They have not been fully tested on a utility scale."

According to a recent federal report, it would cost $1 billion a year to replace the lower Snake River dams with solar, wind and batteries—leading to a 50% increase in rates to BPA customers, Miller says.

"That cost would be devastating to communities around the Northwest," he says. "It is not a good option to replacing dams.

"At the end of the day, we are in a carbon-constrained world where people don't want fossil fuel resources to back up renewables. None of the alternatives are even close to as good as hydroelectricity." ■

Water, fertilize and mow properly for a healthy, weed-free lawn. KURHAN/STOCK.ADOBE.COM

Spiff Up Lawns After A Tough Summer

Lawns languish in the heat of summer unless showered with water. But don't worry, the grass is not dead. Come fall when the rains start again, grass greens up quickly, says Alec Kowalewski, turf specialist for Oregon State University's Extension Service.

While letting your lawn go dormant in summer isn't bad, lack of irrigation allows pesky weeds to gain a foothold. Regular wear and tear can cause compaction within a lawn, which leads to brown or bare spots.

Now is a good time to whip your lawn back into shape, but starting over usually isn't necessary.

"Try renovation before putting in a new lawn, because it's difficult to get a stand of grass established," Alec says. "If you have something to begin with, go with renovating."

What you start with can vary from addressing a few brown spots to a desert of weeds to hardpan soil. Assess your lawn's level of neediness, then proceed with a regular renovation or a no-holds-barred one. Most often, a regular tuneup is all that is needed.

Once your lawn is established, follow Alec's three steps to a healthy lawn that will outcompete those weeds: water, fertilize and mow properly.

Water 1 inch a week, but don't do it all at once.

"If you look at the roots, the majority are in the top 1 inch of the soil," Alec says. "The deeper you go, the fewer roots there are, so watering more than a quarter-inch at a time is a waste. Irrigate more frequently with less amounts when it's not raining."

Fertilize four times a year. Apply on Memorial Day, Fourth of July, Labor Day and Thanksgiving.

When mowing, never remove more than one-third of the grass at one time. That means if the lawn is 3 inches long, cut only 1 inch. Cutting more than one-third weakens the lawn, leaving it vulnerable to weeds and diseases.

"Increase the height of the grass as tall as you can stand it," Alec says. "If you mow it to an inch, you're decreasing rooting depth and stress tolerance."

Mow once a week in spring and fall, less often during summer and winter. Consider leaving clippings where they fall. They break down quickly and resupply much-needed nitrogen. The more often you mow, the easier this is to do. Don't, however, leave clumps of clippings sitting on the lawn. ■

Steps to Renovate a Lawn

For regular renovation:

- ▶ Do a pH test. Either take a sample and send it to a soil lab, or buy a test kit at a nursery. If the pH is below 6.0, add lime.
- ▶ Remove weeds by hand or with a broad-spectrum herbicide.
- ▶ Aerate lawn with a machine available at rental shops. Pay attention to bare spots or compacted areas. Rake off plugs of soil removed by the aerator.
- ▶ Fertilize with a product that has plenty of nitrogen, low or no phosphorus, and a medium level of potassium. Check the fertilizer label and choose something with a high first number (N), low second number (P) and medium third number (K)—such as 20-2-6.
- ▶ Overseed at the recommended rate, going a little thicker on bare spots. Use a drop seeder for even distribution.
- ▶ Water daily unless it rains.

For major renovation, do the steps above and add the following:

- ▶ Mow lawn as short as possible before starting.
- ▶ Before aerating, dethatch the lawn with a dethatching machine or power rake to expose as much soil as possible. Run the machine across the lawn twice, in opposite directions. Remove loosened thatch before changing direction.
- ▶ After seeding, mulch with a thin layer of sawdust, bark dust or compost. A quarter inch is enough; don't overdo it or seed will have a tough time germinating.

Kym Pokorny is a communications specialist for Oregon State University's Extension Service. Previously, Kym worked for The Oregonian, most notably covering gardening and horticulture.

Start thinking about compost as we head into fall. ADOBE STOCK PHOTO BY MARINA LOHRBACH

Feeling Clueless About Compost?

As leaves fall and yard debris bins fill up, it's a good time to think of a different solution to having all those resources trucked away.

"Compost is good for the environment and for the garden," says Ross Penhallegon, horticulturist with Oregon State University's Extension Service. "You take all these things you don't know what to do with—grass clippings, leaves, garden refuse, anything left over—and throw it into the compost pile. Then it decomposes and you put it back into the soil. It's a sustainable system."

Compost provides inexpensive, nutrient-rich material.

"It's one of the best soil builders there is," Ross says.

Ross teaches the "one-third" system of composting: Layer thirds of manure or carbon material, a nitrogen material and a soil. The carbon ingredient—known casually as brown stuff—includes dried leaves, woody plant prunings, straw and sawdust. The nitrogen part—or green stuff—is composed of grass clippings, soft prunings and animal manure.

Other things such as coffee grounds, tea leaves, eggshells and kitchen scraps can be thrown in as well, but Ross warns they can attract unwanted guests such as rats, opossums and raccoons. Don't add pet waste, meat, dairy products, fats, or diseased or poisonous plants.

Getting the right amount of air and water into the pile is key. You don't want too much water, or the microbes and other critters that break down the material can't do their job. On the other hand, a too-dry situation stops the process, too.

The idea is to keep the pile moist but not soggy, especially during winter. Too-little air can also bring decomposition to a halt. The more you turn the pile, the more air gets introduced, keeping everything on track. ■

Composting Guidelines

Ross Penhallegon, horticulturist with Oregon State University's Extension Service, offers the following composting guidelines:

▶ Locate the compost pile on well-drained soil in sun or shade. Place on plastic to prevent unwanted insects from moving into the compost pile.

▶ You can build containers out of materials such as wood pallets, concrete blocks or chicken wire, but a large pile works equally well.

▶ Start a pile with a layer of twigs or small branches to enhance air circulation and drainage.

▶ Add material—carbon, nitrogen and soil—in three layers of about 2 inches. You can repeat the layers, but don't make the pile much taller than 3 feet.

▶ Sprinkle the pile with water. Check moisture periodically by squeezing a handful of compost ingredients. It should feel like a wrung-out sponge. If it's too wet, add dry material and turn to mix.

▶ To retain heat and keep rain from saturating the pile, cover it with a piece of plywood, plastic, tarp or burlap sacks.

▶ Turn the pile once a week to keep air circulating. Re-cover the pile after turning.

▶ Check the pile periodically to monitor the amount of heat generated. If it is heating up, the right balance of ingredients has been added. If it is not, add green material and turn the pile to mix and aerate. Water if necessary.

▶ After two to three months, the pile should no longer heat up and will smell and look like fresh, crumbly soil. The original material shouldn't be readily recognizable, although small pieces may still be evident.

Kym Pokorny is a communications specialist for Oregon State University's Extension Service. Previously, Kym worked for The Oregonian, most notably covering gardening and horticulture.

Prepare for Storm Season

Make your disaster plan today and discuss it with your family because you may not be together when implementing it

By Pam Blair

Many disasters strike without warning. If separated, how will you get in touch with your family? Will you have the supplies you need? Will everyone know what to do?

Preparing for emergencies starts at home. Developing and implementing a plan involves every member of the family.

It's important to make a plan now, ahead of storm season. Write it down, review it with all members of the household and test it out before confronted by an emergency.

No area of the country is immune from severe weather. Hazards vary by region, but include flooding, thunderstorms, damaging winds, tornadoes, hurricanes, and winter storms with snow, sleet and freezing rain.

Tailor your plan to the disasters most likely to affect your area, and the unique characteristics and needs of your family.

Step 1: Develop the Plan

Determine how you will receive emergency alerts and warnings. Wireless Emergency Alerts are received like text messages and require no signup. National Oceanic and Atmospheric Administration Weather Radio All Hazards works with federal, state and local emergency management officials, and connects to the Emergency Alert System. It requires special equipment.

Next, create a family communication plan. Know how you will reconnect with one another if separated. Pick someone out of town that everyone should contact. They may be easier to reach in a disaster. Text rather than call. In an emergency, phone lines may be tied up.

Establish a family meeting place that is safe, familiar and accessible. If you have pets or service animals, think about animal-friendly locations. Consider places in your house, neighborhood and outside your town where you can take shelter.

Keep in mind that the coronavirus may have altered your community's usual plans. If sheltering with others, take cloth masks for anyone over 2 years old, soap, hand sanitizer, disinfecting wipes and general household cleaning supplies.

Identify multiple evacuation routes. Your preferred path may be blocked. Keep a full tank of gas in your vehicle. Some disasters may require you to depart on foot.

Finally, put your family emergency plan and contacts in writing. You can download a guide from ready.gov or create your own.

Step 2: Build Your Emergency Kit

Being prepared for an emergency isn't just about staying safe. It's also about how to stay clean, fed, healthy and comfortable when a disaster has knocked out electricity.

If you lose power, how will you eat? The refrigerator won't keep your food cold. The microwave won't warm things up. You might not have access to clean water. The grocery store or bank may be closed.

Keep in mind the ages of family members, medical and dietary needs, and pets or service animals. Supplies should last at least three days—longer if you are in a remote or hard-to-access area.

Store the following items in airtight plastic bags in easy-to-carry containers, and replace expired items as needed:

National Preparedness Month is recognized in September to promote family and community disaster and emergency planning. Before a storm hits, understand, plan and practice for weather-related risks. PHOTO COURTESY OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY

- Water—1 gallon per person per day, for drinking and sanitation (extra for pets).
- Battery-powered or hand-crank radio, preferably a NOAA Weather Radio.
- Flashlight and extra batteries.
- Nonperishable food and a manual can opener; infant formula and bottles.
- Mess kits, paper cups, plates, paper towels and plastic utensils.
- First-aid kit, prescriptions and nonprescription medications such as pain relievers, antacids and laxatives.
- Hygiene items, diapers, diaper rash cream, feminine supplies, wipes, garbage bags and plastic ties.
- Eyeglasses and contact lens solution.
- Sleeping bag or warm blanket for each person; change of clothing and shoes.
- Pet food and supplies.
- Whistle, to signal for help.
- Dust mask, plastic sheeting, duct tape, and wrench or pliers to turn off utilities.
- Cellphone, charger and backup battery.
- Cash or traveler's checks.
- Copies of important documents such as insurance policies, identification and bank account records saved electronically or in a waterproof, portable container.
- Matches and fire extinguisher.

Step 3: Practice, Practice, Practice!

Make sure everyone in the family has copies of your plans and contacts, and keeps them in a safe space, like in a backpack, wallet or taped in a notebook. Also put them in your cellphone.

Meet regularly as a household to review and practice your plan. ■

Safely Operate Your Generator

✔ Place the generator on a level surface. Otherwise, fuel may leak from the fuel cap.

✔ Use an appropriately sized extension cord—usually 10, 12 or 14 gauge. The lower the number, the thicker the cord and the more electricity it can carry. Do not run it under a rug. Heat can build up and spark a fire.

✔ Do not run a generator indoors or in an enclosed space. Internal combustion engines produce deadly carbon monoxide gas.

✔ Fill your generator with clean, fresh fuel in a well-ventilated area while it is turned off. Keep the fuel level 2 inches below the top of the fuel tank to allow expansion in hot weather and prevent overflow.

✔ Check fuel levels periodically to be sure you have adequate fuel for emergencies.

✔ Use the correct amount and type of oil. Refer to the engine manual included with your generator. Check the oil level prior to starting.

✔ Allow the generator to run about two minutes before plugging in extension cords, appliances or equipment. Do not start a generator with items already plugged in.

✔ Start items from the largest power user to the smallest. Keep in mind many items—especially those with electric motors, such as well pumps, refrigerators, freezers, air conditioners and plug-in space heaters—require a surge of power to get them started.

✔ To avoid the possibility of a voltage surge, unplug all cords in the reverse order they were plugged in, then wait about two minutes before shutting down the generator.

✔ Diligently perform manufacturer's suggested maintenance or checkups on the system. If necessary, hire a professional. ■

Prepare for Storm Season

Make your disaster plan today and discuss it with your family because you may not be together when implementing it

By Pam Blair

Many disasters strike without warning. If separated, how will you get in touch with your family? Will you have the supplies you need? Will everyone know what to do?

Preparing for emergencies starts at home. Developing and implementing a plan involves every member of the family.

It's important to make a plan now, ahead of storm season. Write it down, review it with all members of the household and test it out before confronted by an emergency.

No area of the country is immune from severe weather. Hazards vary by region, but include flooding, thunderstorms, damaging winds, tornadoes, hurricanes, and winter storms with snow, sleet and freezing rain.

Tailor your plan to the disasters most likely to affect your area, and the unique characteristics and needs of your family.

Step 1: Develop the Plan

Determine how you will receive emergency alerts and warnings. Wireless Emergency Alerts are received like text messages and require no signup. National Oceanic and Atmospheric Administration Weather Radio All Hazards works with federal, state and local emergency management officials, and connects to the Emergency Alert System. It requires special equipment.

Next, create a family communication plan. Know how you will reconnect with one another if separated. Pick someone out of town that everyone should contact. They may be easier to reach in a disaster. Text rather than call. In an emergency, phone lines may be tied up.

Establish a family meeting place that is safe, familiar and accessible. If you have pets or service animals, think about animal-friendly locations. Consider places in your house, neighborhood and outside your town where you can take shelter.

Keep in mind that the coronavirus may have altered your community's usual plans. If sheltering with others, take cloth masks for anyone over 2 years old, soap, hand sanitizer, disinfecting wipes and general household cleaning supplies.

Identify multiple evacuation routes. Your preferred path may be blocked. Keep a full tank of gas in your vehicle. Some disasters may require you to depart on foot.

Finally, put your family emergency plan and contacts in writing. You can download a guide from ready.gov or create your own.

Step 2: Build Your Emergency Kit

Being prepared for an emergency isn't just about staying safe. It's also about how to stay clean, fed, healthy and comfortable when a disaster has knocked out electricity.

If you lose power, how will you eat? The refrigerator won't keep your food cold. The microwave won't warm things up. You might not have access to clean water. The grocery store or bank may be closed.

Keep in mind the ages of family members, medical and dietary needs, and pets or service animals. Supplies should last at least three days—longer if you are in a remote or hard-to-access area.

Store the following items in airtight plastic bags in easy-to-carry containers, and replace expired items as needed:

National Preparedness Month is recognized in September to promote family and community disaster and emergency planning. Before a storm hits, understand, plan and practice for weather-related risks. PHOTO COURTESY OF POWERSOUTH ENERGY COOPERATIVE

- Water—1 gallon per person per day, for drinking and sanitation (extra for pets).
- Battery-powered or hand-crank radio, preferably a NOAA Weather Radio.
- Flashlight and extra batteries.
- Nonperishable food and a manual can opener; infant formula and bottles.
- Mess kits, paper cups, plates, paper towels and plastic utensils.
- First-aid kit, prescriptions and nonprescription medications such as pain relievers, antacids and laxatives.
- Hygiene items, diapers, diaper rash cream, feminine supplies, wipes, garbage bags and plastic ties.
- Eyeglasses and contact lens solution.
- Sleeping bag or warm blanket for each person; change of clothing and shoes.
- Pet food and supplies.
- Whistle, to signal for help.
- Dust mask, plastic sheeting, duct tape, and wrench or pliers to turn off utilities.
- Cellphone, charger and backup battery.
- Cash or traveler's checks.
- Copies of important documents such as insurance policies, identification and bank account records saved electronically or in a waterproof, portable container.
- Matches and fire extinguisher.

Step 3: Practice, Practice, Practice!

Make sure everyone in the family has copies of your plans and contacts, and keeps them in a safe space, like in a backpack, wallet or taped in a notebook. Also put them in your cellphone.

Meet regularly as a household to review and practice your plan. ■

Safely Operate Your Generator

✔ Place the generator on a level surface. Otherwise, fuel may leak from the fuel cap.

✔ Use an appropriately sized extension cord—usually 10, 12 or 14 gauge. The lower the number, the thicker the cord and the more electricity it can carry. Do not run it under a rug. Heat can build up and spark a fire.

✔ Do not run a generator indoors or in an enclosed space. Internal combustion engines produce deadly carbon monoxide gas.

✔ Fill your generator with clean, fresh fuel in a well-ventilated area while it is turned off. Keep the fuel level 2 inches below the top of the fuel tank to allow expansion in hot weather and prevent overflow.

✔ Check fuel levels periodically to be sure you have adequate fuel for emergencies.

✔ Use the correct amount and type of oil. Refer to the engine manual included with your generator. Check the oil level prior to starting.

✔ Allow the generator to run about two minutes before plugging in extension cords, appliances or equipment. Do not start a generator with items already plugged in.

✔ Start items from the largest power user to the smallest. Keep in mind many items—especially those with electric motors, such as well pumps, refrigerators, freezers, air conditioners and plug-in space heaters—require a surge of power to get them started.

✔ To avoid the possibility of a voltage surge, unplug all cords in the reverse order they were plugged in, then wait about two minutes before shutting down the generator.

✔ Diligently perform manufacturer's suggested maintenance or checkups on the system. If necessary, hire a professional. ■

CPI 2020 Annual Meeting

Schedule of Events

10 a.m.—Doors open
10:30 a.m.—Meeting called to order
11 a.m.—Meeting adjourned
No auction or lunch this year

Meeting on September 12 at CPI Philomath office, 6990 West Hills Road

Due to the COVID-19 pandemic and restrictions on large gatherings, CPI's 81st Annual Members' Meeting is being modified. Due to social distancing requirements, seating is limited to 100 people. Members wanting to attend should contact us to enter a drawing, held on August 31, for an invitation. There is a maximum of one guest per member, adults only. Only members with an invitation may attend and face coverings and social distancing are required. The meeting will be shortened, with no lunch, prizes, auction or vendors. In lieu of prizes, members will receive a bill credit for attending. ■

An invitation is required to attend the meeting. Call 541-929-3124 or email info@cpi.coop.

Director Elections

Director positions for Zones 1, 5 and 8 along with proposed bylaw changes will be on the ballot this year. A committee has been appointed to nominate candidates for the expiring zone terms. A list of nominees will be mailed to members prior to the annual meeting. Brief biographies of nominees will be mailed to CPI members along with a ballot, voting instructions and an official meeting notice in late August. Directors serve three-year terms.

A Common Good Food Bank volunteer prepares to hand out vegetable starts to those who want to grow their own.

Feeding the Hungry During COVID-19

Common Good Food Bank and Coos-Curry Electric team up to help

By Kelsey Bozeman

Individuals in need of food assistance in the Port Orford area are receiving biweekly food boxes thanks to Common Good Food Bank and its amazing team of volunteers.

There has been a substantial increase in the number of families in need since the beginning of the COVID-19 pandemic. At Common Good Food Bank, an average of 175 families need food boxes weekly—an increase from about 50 families a week prior to the pandemic.

"We weren't prepared for these numbers," says Alice Loshbaugh, president of the nonprofit organization, noting the organization works diligently to provide for all of those in need.

Originally, drive-thru food distribution took place at the Port Orford Senior Center. Due to changes in operations at the center, Common Good Food Bank had to find an alternative way to get the food in the hands of those in need.

"The senior center has been so helpful," Alice says. "But they are trying to reopen, and we needed a new place for distribution."

Coos-Curry Electric Cooperative learned of the need and offered a partnership to help with the distribution of food using the cooperatives' warehouse.

On July 1, the food bank started its new drive-thru distribution operation at CCEC's Port Orford warehouse and loading dock. The site buzzed with volunteers strategically packaging nourishing food boxes and

CLOCKWISE FROM ABOVE: Volunteers hand out prepackaged bags of food. Drivers wind their way through the Coos-Curry equipment yard to pick up food. A line of cars waited when the site opened. The food was gone in less than two hours.

vegetable starts for individuals to take home.

A long line of cars began to form at 8:15 a.m., with many hopeful individuals waiting to be the first in line for dispersal of food boxes at 10 a.m.

As the gates opened, Common Good volunteers routed traffic through the Coos-Curry Electric facility while individuals remained in their vehicles.

Due to COVID-19 safety precautions, the drive-thru offered contactless pickup. Food provided must be eaten off-site.

Volunteers were equipped with personal protective equipment to ensure everyone received a healthy, safe and sanitary food box.

Not wanting to leave out residents who can't drive, Coastal Community Health made special arrangements and delivered food to those who don't drive.

Food distribution will continue biweekly on Wednesdays throughout the pandemic at CCEC's Port Orford location.

Distribution is made possible by Common Good Food Bank, which for the past 40 years has provided quality food and related assistance to individuals in need in Port Orford and the surrounding community.

Much of the food comes from independent donations and grant money.

The food bank is also supported through a network of volunteers dedicated to serving others with compassion and dignity. ■

To find out more about Common Good Food Bank and its programs, visit facebook.com/CommonGoodFoodBank

Annual Financial Report

In June, you received a copy of the summarized financial statements for 2019. It was included with your ballot in the annual meeting voter's packet and annual report. Following are some of the financial highlights of last year.

When we met with you for the district meetings last year, we were still recovering from the most devastating weather event in Lane Electric's history. The total cost to repair the system and restore power was $5.8 million. To help cover those costs, Lane Electric applied for Federal Emergency Management Administration grants that covered 75% of the cost, or about $4.4 million. The co-op borrowed the remaining $1.4 million.

We began 2019 with an equity ratio of 44% and ended with an equity ratio of 41.8%. The equity ratio is the measurement of total equity as a percentage of total assets, or how much of Lane Electric's assets are financed through equity rather than debt. The board of directors has determined an equity ratio range of 40% to 45% is a measure of good financial health. A strong equity ratio supports system improvements and allows for capital credit retirements. It also helps maintain rate stability, provides for risk mitigation—a cushion for extreme weather events that significantly impact our margins—and allows us to take advantage of significant opportunities when they arise.

Other Notable Items for 2019

The board authorized the retirement of the 2018 outstanding capital credits, totaling $1,851,112 on a present-value basis. These capital credits were applied to your November 2019 bill.

Since 2008, Lane Electric has been the recipient of funds from a lawsuit with the Bonneville Power Administration. The settlement agreement provided for payments through September 2019. Throughout that period, we received a total of $4.9 million.

All in all, 2019 was another sound financial year for your cooperative, which provides the foundation for future financial health. We paid our bills on time, our bankers were satisfied with our financial performance, and we maintained the cooperative's assets and good name.

The board of directors continues to maintain appropriate oversight with an adopted annual budget, review of monthly financial reports and an annual audit. The board retained Aldrich Advisors + CPAs to perform the annual CPA audit, which again resulted in a clean, unmodified opinion.

We value your patronage and appreciate the opportunity to serve and support so many vibrant communities here in Lane County. Please don't hesitate to contact us with any questions, comments or concerns. ■

SEE PAGE 25 FOR THE OPERATIONS REPORT

$5.8 MILLION
2019 STORM REPAIR COST

$4.4 MILLION
AMOUNT RECEIVED FROM FEMA TO HELP PAY FOR STORM DAMAGE

$1.4 MILLION
AMOUNT BORROWED TO COVER REMAINING COST OF STORM DAMAGE

$4.9 MILLION
AMOUNT RECEIVED FROM BPA LAWSUIT OVER 11 YEARS

41.8%
EQUITY RATIO AT THE END OF 2019

IN 2019, MORE THAN A MILE OF OVERHEAD LINE WAS CONVERTED TO UNDERGROUND. THIS YEAR, WE ARE ON TRACK TO CONVERT 2.5 MILES OF OVERHEAD LINE TO UNDERGROUND.

FOUR PROJECTS WITH A COST OF $1.2 MILLION HAVE BEEN SUBMITTED TO FEMA FOR POSSIBLE FUNDING.

CREWS HAVE INCREASED EFFORTS TO REMOVE DEAD TREES THAT THREATEN POWER LINES.

Annual Operations Report

At our district meetings last year, we talked about future measures we would incorporate to help mitigate the effects and the risk winter storms and years of drought have on our electric system. Fresh from the most devastating snowstorm in Lane Electric history, we went to work putting those measures in place.

In 2019, we converted more than a mile of existing overhead lines to underground, further reducing our exposure to falling limbs, trees and ice buildup. This year, we are on track to convert 2.5 miles of overhead lines to underground.

Burying power lines is expensive—roughly three times the cost of replacing the line in its original overhead configuration. To help mitigate those costs, we have submitted four projects to the Federal Emergency Management Administration for reimbursement. Those projects are estimated to cost around $1.2 million to complete. While there is no guarantee these projects meet their criteria and are accepted, we will receive a 75% reimbursement if they do.

Following the storm, we surveyed our system looking for broken and leaning trees, hanging limbs and treetops—all of which threaten future damage to the system—and removed what we found.

As we discussed during district meetings, years of drought have wreaked havoc on our forests, and wildfire threats are an even greater risk to our system. To help mitigate this, we have significantly increased our efforts to proactively remove dead trees that threaten our power lines and ramped up our mowing budget to clear underbrush.

These efforts—among others we continue to explore alongside utilities from across the region—will help reduce future storm damage and mitigate our risk of a wildfire.

We want all of the communities we serve to feel safe, secure and satisfied with the exceptional service Lane Electric provides. ■

SEE PAGE 8 FOR THE FINANCIAL REPORT


VIRTUAL
BLACHLY-LANE COFFEE TALK
WITH GM GREG GARDNER
SATURDAY, AUGUST 22, 2020, 9:30- 10:15 A.M.
JOIN ONLINE:
https://zoom.us/j/95687368671?pwd=ZlgwUlBKRDYzamJqb3dhV295VU9LUT09
JOIN BY PHONE:
+1 253 215 8782 or +1 669 900 9128
(long distance charges apply- check your phone plan)
MEETING ID: 956 8736 8671
PASSWORD: 606512
Blachly-Lane

Blachly-Lane crew members reconfigure the steel framing for new equipment at Erb Substation.

Homegrown Pride

Erb Substation rebuilt with in-house Blachly-Lane crew

By Pam Spettel

On Highway 36 near Lowpass—close to the center of Blachly-Lane's service area—stands Erb Substation.

Though Blachly-Lane history is unclear, Erb Substation was likely named for C.H. Erb, a board member from 1949-1970. It is believed to have been built in the late-1940s to early 1950s.

Routine maintenance and the occasional emergency repair have kept this substation going for the last 70 years.

In 2020, Erb Substation is getting a much-needed renovation. Two things make this project remarkable:

- The rebuild is being done entirely in-house, using Blachly-Lane employees to conduct every aspect from design to setting the final bolt.
- The original steel structure was reconfigured and repurposed, creating significant cost savings to members.

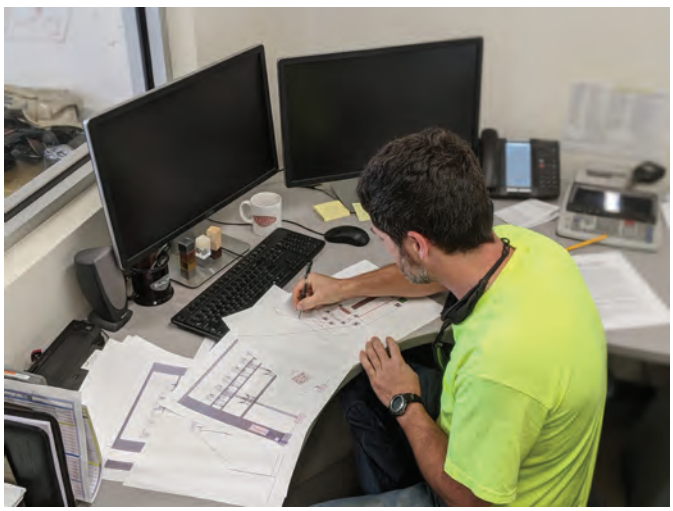
In 2014, Blachly-Lane had a systemwide engineering study done by TriAxis Engineering. The study found places in the aging system that needed improvement to ensure reliable electric service for members. The study formed the basis of a 10-year capital improvement plan, with a rebuild to the Erb Substation slated for 2020.

Safety Is a Project Driver

Operations Manager Mary Locke says this project is critical to the co-op's commitment to safety.

"The original Erb Substation used oil-filled hydraulic reclosers mounted very close to the ground," she says. "This old technology posed a risk to our linemen and substation technicians when they operated the reclosers just inches away from the oil-filled tanks. In the event of a catastrophic failure of the device, no path to safety existed for employees."

The upgrade replaces the hydraulic reclosers with vacuum-bottle electronically controlled ones. The updated reclosers can be operated on a time delay, allowing employees



TOP: Blachly-Lane line crew helps hang new substation equipment. ABOVE: Transition and Engineering General Foreman Jeff Jones marks up the substation blueprints he designed.

to exit the danger zone surrounding the device. Other upgrades include replacing aging switches that no longer have available replacement parts due to age. The new controls increase reliability, reduce the risk of fires and aid with clearing faults rapidly.

All Hands on Deck

By the time the rebuild is complete this winter, nearly all Blachly-Lane operations personnel will have contributed to the project.

Twenty-two percent of Blachly-Lane's membership is served by Erb Substation, which provides power to 611 residences, farms and small businesses in the Blachly, Horton, High Pass, Cheshire and Noti areas.

"A silver lining came with the COVID-19 pandemic," says Jeff Jones, Blachly-Lane's transmission and engineering general foreman, who would typically have been out working on the system when the Stay Home, Save Lives order was issued.

"I stayed busy using the time that would have gone idle—time I'd have normally used on other projects out in the system—to develop the design and blueprint for the rebuild. Doing the work in-house created another significant cost savings to the project."

Apparatus Technician Matt Bottensek has served as the project's coordinator. His prior experience with a construction firm—and overseeing contractors on last year's High Pass Substation rebuild—has made him invaluable.

"Matt has high expectations for the quality of work being done," Jeff says. "His previous experience has allowed him to do 100% of the concrete foundation work, and he gave us a great product. Matt is running the job and making the decisions.

"The substation feeds both Matt's and our working line foreman, Ken Gast's, houses and their community. There's a lot of homegrown pride in this project."

The entire crew from journeyman to apprentice lineworkers have had a hand in the rebuild. Construction and Maintenance General Foreman Matt Smith and Journeyman Lineworkers Kris Meyers and Jeff Youngblood Lee have installed the switches. Apprentice Lineworker Logan Drullinger flew in switches overhead from the bucket truck.

The entire crew also rebuilt the line outside the substation that connects to the feeders.

The rest of the summer and through the fall, Blachly-Lane employees will finish the project. Among the work remaining is breaking ground on the excavation, digging trenches and laying new conduit, installing new reclosers, and rebuilding the jumpering and bus work.

"Our crew always shows a lot of pride in their work, but the Erb rebuild brings with it a special enthusiasm," Mary says. "Every component has been handled without the aid of contractors, which is fun and unusual for us.

Our people have made the most of the pandemic to turn out a really great project that will serve this co-op for decades to come." ■

NLI linemen Bill Murray, left, and Marc Hull repair a junction box. Power was rerouted to prevent an extended outage.

A Powerful Highway of Lines

The electricity grid is an incredibly complex and important system, and an impressive engineering feat.

The grid is a large, interconnected system of generators, substations, and distribution and transmission lines that require a coordinated and balanced effort among utilities to make it all work.

Think of the transmission system—the big poles and towers—as being like an interstate or freeway. There are limited on and off ramps (substations) and they are generally meant for long distance and heavy traffic (more kilowatts).

The distribution system is like county roads, neighborhood streets and side roads. If NLI needs to perform maintenance, or has an unplanned outage that may cause an extended power outage, sometimes we can provide a "detour" for your power.

For example, we may need to de-energize one of our substations to perform scheduled work. If there are other substations in the area that serve power lines with the same voltage we may be able to switch service to that substation.

Many times, we may need to switch lines to more than one substation to have enough capacity to serve all our members' power needs.

When NLI needs to do such switching, an order is written and reviewed using our system maps. It is possible to have switching orders with 30 to 40 steps. It can take 2 to 3 hours for NLI linemen to complete switching in the field.

Switching can be complex and time consuming, so this is not something we immediately use for unplanned outages. Extending one section of line to isolate a problem may be a simple fix. However, repairing the problem that caused an outage may be quicker than switching to a different substation.

When we have extended planned or unplanned work, or we are waiting for materials to arrive, we will look to provide a detour to keep as many members' power on as possible.

Detours are not always an option since we have many members on long radial distribution lines with no options for switching.

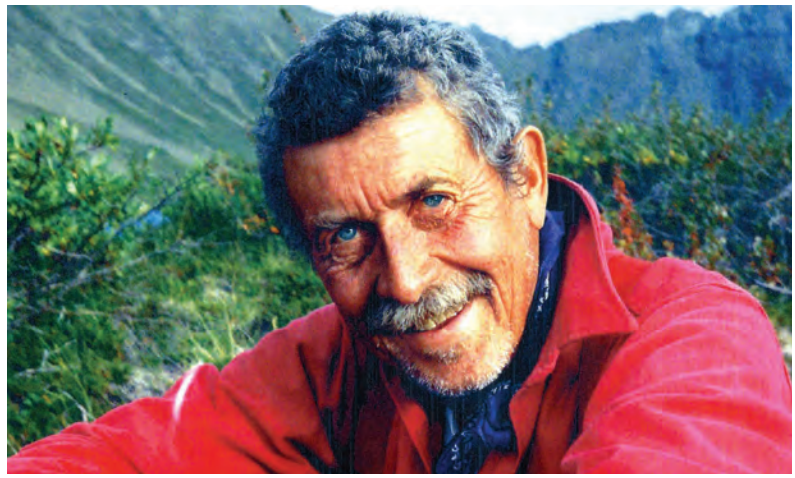
When possible, and safe to do so, NLI crews perform "hot" or energized work on NLI's lines, which does not require switching. However, when we do need to switch, it typically happens behind the scenes. You will not notice your electric service has been switched from one substation to another.

Thinking of our electrical system in terms of a road system, you could follow an electrical path from a home in north Idaho all the way to a home in southern Arizona! There might be a detour or stop along the way, but there will always be a path there. ■

Northern Lights Engineering & Operations Manager Kristin Mettke is an electrical engineer and has worked in the electric utility industry most of her career.

Serving Members Since 1971

CVEA Says Goodbye to Director Fred Williams After 49 Years of Service



Fred Williams and his family moved to the Copper Basin from Wyoming in 1963. Like many Alaskans, Fred grew to love the state and enjoyed the Copper Basin because of its sparsely populated surroundings and excellent hunting and fishing opportunities.

In 1971, Fred was asked to fill a vacancy on the CVEA Board of Directors. No one could have imagined he would continue to serve the members of CVEA until 2020, 49 years later.

In his early years on the CVEA Board, Fred says there were not a lot of issues, and things sure were different. One of their Board duties was to approve all of the bills that had accumulated over the month and sign checks. He remembers this taking a lot of time during the monthly meetings. At that time he believes the average cost per kWh was 8¢ and the word 'environment' was never even discussed in the board room. Then one day, that all changed. The price of oil started to climb and rates started to rise, making the high cost to the member an ever-growing concern.

He remembers when the Government started imposing environmental regulations on utilities and how dramatically they affected the way CVEA did business. Fred noted how ironic it is that in this day and age, the environmental issues have become so prevalent, that the Cooperative has to employ a person to manage all of the environmental and regulatory impacts.

Fred believes that high electric rates, due to the cost of fuel and onerous environmental regulations, are the biggest issues facing CVEA today and into the future.

In a prior interview, Fred said he had enjoyed his time on the Board and stated his favorite thing is "being in a group who take their responsibilities seriously and are genuinely concerned with helping the members, all members, from one end of the line to the other." He said the thing he likes least is "driving between districts in the dark to attend meetings."

When asked what he would tell others interested in running for the Board, Fred replied, "I'd tell them that it is stressful, time consuming, and it is a very serious job. They need to prepare to cross difficult hurdles, work together towards a common goal, and talk to people. I'd also tell them that they will be lucky to have an opportunity to work with such great people."

Having served on the same board for 49 years, one can imagine all that Fred has seen and been a part of. He believes the biggest accomplishment of the Cooperative was building the Solomon Gulch Hydroelectric Plant. Fred believes, "it remains our saving grace today." One of his proudest moments was in 1981, when he cut the ribbon of the Solomon Gulch Hydroelectric Project, a project that a year later became the Cooperative's primary power source.

When asked why he has stayed on the CVEA Board of Directors as long as he has Fred said, "because there's always a project I'd like to see finished." In 2011, Fred said he hoped to see the T-Line moved out of the avalanche zone on Thompson Pass and the Allison Creek Hydroelectric Project in production. Due, in part to Fred's dedication to the members, he was able to see both of those projects completed. Today, Allison Creek, in combination with Solomon Gulch, has increased hydro generation to 75 percent of total annual production.

In addition to Fred's service on the CVEA Board, he represented CVEA on the Board of the Alaska Power Association (APA), and served on the APA Executive Committee, Resolutions and Governmental Affairs Steering Committee, ACRE/CARE Committee, and the ARECA Educational Foundation. Fred received the Mason LaZelle Achievement Award, the highest level award presented by Alaska's electric industry trade association. He also has an award given for exemplary employee service, called the Hatcher-Williams-Turkington Employee Award, named after

he and two other industry leaders.

CVEA CEO Travis Million had this to say, "In the nearly 50 years that Fred has served on the CVEA Board it still amazes me the amount of information he can recall over that time span. He was involved as a board member in the commissioning of three of CVEA's five power plants; Solomon Gulch, the Cogeneration Plant, and most recently Allison Creek. Combined those three plants account for over 92 percent of CVEA's generation needs and at by far the lowest cost. The decisions to construct all three of these plants were not easy but I'm positive that Fred's leadership helped the Board in those decisions. I'll personally miss having Fred on the Board. He is extremely knowledgable in the history of CVEA, Alaskan state history, gun collecting, and you could always count on his witty responses to questions.Thank you Fred for your 49 years of service to the members of CVEA!" ■

Do not swim around docks with electrical equipment or boats plugged into shore power.

PHOTO COURTESY OF SAFEELECTRICITY.ORG

Don't Let Unsafe Actions Make Waves in Summer Fun

By Joseph Hathaway

The hot summers of Eastern Oregon draw many people outside—often to the nearest body of water to beat the heat by boating, fishing or swimming.

Even if you're enjoying the pristine waters of the lakes in the Elkhorn or Blue mountains, or one of the many beautiful rivers in the area, it's important to remember you are surrounded by electricity. Oregon Trail Electric Cooperative reminds you that water and electricity do not mix. The following tips can help keep you and your loved ones safe when enjoying water recreation activities this summer.

- Check weather forecasts. Postpone your plans if a thunderstorm is expected, because the risk for lightning strikes is especially high in or near bodies of water. Remember the advice from the National Weather Service: "When thunder roars, go indoors."
- You are not safe from lightning strikes while outside. Once you hear thunder, get to a safe shelter such as an enclosed building with electricity or plumbing, or an enclosed metal-topped vehicle with its windows up. Wait until at least 30 minutes have passed without thunder to return outside.
- Be aware of your surroundings. Always check for nearby power lines before boating or fishing. When fishing, make sure to cast the line away from power lines to avoid potential contact.
- Do not raise a mast or antenna when your boat is near a power line. Never attempt to move a power line out of the way so a boat can pass underneath. Maintain a safe distance of at least 10 feet between your boat and nearby power lines. Water levels constantly change, altering the distance between the water and the line.
- If your boat contacts a power line, do not enter the water. The water could be energized. Instead, stay in the boat and avoid touching anything metal until help arrives or until your boat is no longer in contact with the line.
- Know where your main breakers are on both the boat and shore-power source so you can respond quickly in an emergency.
- Do not swim around docks with electrical equipment or boats plugged into shore power. Residual current could flow into the water, putting anyone in the water at risk of electrical shock drowning. There is no visible warning. If you are in the water and feel a tingle of electric current, shout to let others know. Try to stay upright, tuck your legs up to make yourself smaller, and swim away from anything that could be energized. Do not head toward a boat or dock ladders to get out.
- If you see someone you suspect is getting shocked, do not jump in to save them. Throw them a float, turn off the shore power connection at the meter base and/or unplug shore power cords. Try to eliminate the source of electricity as quickly as possible, then call 911.
- Just like your home, it is critical a licensed electrician regularly inspects your boat and that you are familiar with its electrical system so you can identify hazards to help prevent the risk of electricity entering the water.

OTEC wants to make sure you and your family stay safe while enjoying all the natural beauty and fun that beautiful Eastern Oregon has to offer. ■

To learn more about electrical safety, visit www.otec.coop/safety.

There is no greater gift for a child than an education and books of their own. That's why Oregon Trail Electric Cooperative is proud to sponsor Dolly Parton's Imagination Library for our youngest co-op members in Baker, Grant, Harney and Union counties.

The Imagination Library—a book-gifting program administered by the Dollywood Foundation—mails one book each month to children from birth to age 5 at no cost to OTEC member-owners who register.

Since launching the Imagination Library program in March 2018, 34,990 books have been delivered to families in OTEC's service territory.

At OTEC, we believe every child should have the opportunity to succeed, and can think of no better start than ensuring the children in our communities grow up in homes filled with books that inspire a passion for reading and lifelong learning.

Given the uncertainty and uneasiness surrounding the COVID-19 pandemic, reading books is a welcome distraction during a time of unrest for children and families.

For more details and to learn how to register for the program, please visit OTEC's website at **otec.coop/dolly-partons-imagination-library.**

OREGON TRAIL ELECTRIC CO-OP

Your Touchstone Energy® Cooperative

3 Days in Seagrove, North Carolina

Crystal King Pottery is one of many unique pottery businesses in Seagrove, North Carolina.
PHOTOS BY RICHARD SCHOENBERGER

By Robin Howard

If you're looking for a close-to-home getaway, Seagrove, North Carolina, has all of the ingredients for a fun day or weekend away. Just 90 miles north of Marlboro and Dillon counties, Seagrove is known far and wide as the pottery capital of the U.S. This small town draws arts and crafts lovers from around the world. It has two lovely inns and several excellent restaurants.

Where to Stay

If you're spending the night, make a reservation at the Duck Smith House Bed & Breakfast or the Seagrove Stoneware Inn. The Duck Smith House has four quaint bedrooms with baths and is known for serving legendary breakfasts. The home has a large front porch where guests can relax and enjoy the dozens of bird species that nest in the area.

Seagrove Stoneware Inn is a beautiful home owned by potters Alexa Modderno and David Fernandez. The house is filled with artwork, and local pottery at dozens of other studios is within walking distance.

Day 1: Pottery Center, Ugly Jugs, Legendary Pizza

Get settled at your lodgings and ask your hosts for a free Seagrove Pottery map. There are more than 100 potters and 50 shops and galleries to explore, but you're starting your tour at the North Carolina Pottery Center, which hosts the most extensive collection of working potters in the country.

At the center, there are examples of fine art pottery that are gallery- and museum-quality. Potters here practice different styles, with influences from around the world.

There are functional pieces such as jugs, platters, dinnerware, mugs, pitchers, wine glasses and more. Functional pottery is what put Seagrove on the map, so everyone can find something they like here.

After touring the center, take a break at Four Saints Brewing, where you can see a collection of Seagrove Pottery beer mugs behind the counter. The mugs were used for fundraising the seed money for the brewery. Only the owners of the cups can drink from them. The brewery usually has a food truck. Four Saints also hosts live music.

Once refreshed, head to Owens Pottery or Jugtown Pottery for a look at the region's famous face jugs. Both potters are owned by descendants of the Owens family—the original Jugtown potters.

Dinner tonight is in nearby Asheboro. The Flying Pig Food & Spirits serves legendary pizza and homemade cheesecake.

Day 2: Pottery Class, Gallery Walk and Fried Chicken

Even if you had a big breakfast at the inn, stop at The Table Farmhouse Bakery for a late-morning snack before hitting the pottery shops. Owner Dustie Gregson is a furniture designer-turned-entrepreneur. The Table is how she brings her childhood home's cozy hospitality to Asheboro.

Next, head to Thomas Pottery for a hands-on class with Bobbie Thomas (book in advance). Nestled in lush greenery, Thomas Pottery has a peaceful atmosphere with whimsical figurines of hedgehogs, rabbits and other creatures tucked in the landscape. Even if you're not taking a hands-on workshop, it is worth a visit.

After class, lunch is at Seagrove Family Restaurant. A rotating lunch menu features your choice of entrée and two sides. Save room for the peach cobbler or the famous Pig Pickin' Cake, a yellow cake with fruity icing that goes nicely with barbecue.

Work off your cake with a walk to Seagrove Stoneware Pottery. Alexa and David are known for their functional and decorative pottery, speckled ironware and large-scale works. There are dozens of galleries and shops within walking distance, so spend time wandering.

Once you've found your appetite again, it's time for dinner at Magnolia 23. Voted No. 1 on TripAdvisor for fried chicken, Magnolia 23 is a must-do stop for Southern soul food.

After dinner, take the Historic Downtown Asheboro Ghostwalk. Local actors share some of Asheboro's darkest tales of tragedy, history and a bit of humor on this 1-mile stroll through downtown.

Day 3: Orchard and National Forest

If you didn't visit all the galleries and shops you wanted to yesterday, you have plenty of time today.

Ready for something different? Start your morning at Millstone Creek Orchards. What started as a few apple trees and a storefront the size—and shape—of a pickup truck, is now 18 acres of apples, blackberries, peaches, pecans, pumpkins and more. Beyond harvesting delicious food, they also have a bakery and cannery, nature trails, hayrides and events for the family year-round.

For a midday snack, visit the Brightside Gallery. Lady Mary, also known as Mary Murkin, shares a seasonal pumpkin brew plucked from the shelves of her Carriage House Tea, located in the carriage house behind the gallery.

This afternoon, take a walk or bike ride in the Uwharrie National Forest, which has more than 50,000 acres of protected land, including the Uwharrie Mountains and parts of the Yadkin and Pee Dee rivers. There are several scenic day hikes in the forest, including the Uwharrie National Recreation Trail, Badin Lake Trail, Jumping Off Rock and Dutchman's Creek Loop. The campground is an excellent place to stay if you prefer to bring your accommodations instead of staying in town.

Seagrove, North Carolina, is a lovely small town with more than its share of fun things to see and do. For a richer experience, stay at one of the local inns and take a pottery workshop. You are here to relax, so don't hurry through the long list of galleries. Artisans are generous with their time, and learning about the history of the region and the centuries-old craft is part of the fun. Take your time, enjoy and plan to come back. ■

Nigerian Dwarf Goats and Their Big Personalities

Nigerian dwarf goats are low-maintenance and known for their gentle nature, which Brandi Faulk says is ideal for her small homestead.

Brandi Faulk and her family are excited to share their homesteading journey with Marlboro Electric members. Their home, built in 1895, is a former railway hotel and farmhouse. See more photos of the their experience on Instagram by searching "faulkfamilyfarm."

Nigerian dwarf goats are one of the fastest-growing goat breeds in the United States. Previously considered rare by the American Livestock Breeds Conservancy, they are now thriving since being removed from the endangered heritage breeds list in 2013.

The development of the breed in this country can be traced back to American zoos. It is believed that as large exotic cats were shipped to zoos across the states from the 1930s to the 1950s, these mini goats from Africa were brought along as a food source for the cats while in transport. The goats that were not consumed were used in zoo exhibits. As the goats reproduced, their numbers quickly grew, and zoos began to sell their surplus stock to the public.

This is when breeders began to develop the Nigerian dwarf into the mini dairy breed it is today. Unlike their Pygmy relatives—who often display a short, stocky build—Nigerians are well-proportioned versions of the larger dairy breeds. They also come in a range of unique patterns and colors. My favorites are blue eyes and spotted coats.

First selected as companion animals, their playful personalities have landed them the nickname "the puppies of the goat world." Their gentle nature and small size make them suitable for children to handle. Even breeding bucks are handled with ease. They make excellent backyard pets!

Easily trainable, they are great for youth's animal activities with 4-H or FFA. They also commonly are used to provide social support for the elderly and disabled.

Nigerian dwarfs are a low-maintenance breed with fewer requirements than their larger dairy goat counterparts. They

These "puppies of the goat world" are easily trainable and, according to Brandi, excellent backyard pets.

can be kept in smaller spaces and require less feed, which makes them less expensive to keep and sought-after for smaller urban settings.

Their small stature means transportation is a piece of cake. I can lift an adult goat when needed with no assistance. These goats fit comfortably in a dog crate, which can sit right in the back of an SUV or van. No trailer is required.

Nigerian dwarves produce as much as 1 to 2 quarts of milk per day. Many claim their milk tastes better than all the other breeds of goat, and some even prefer it to store-bought milk.

The higher butterfat content makes the milk taste sweeter, milder and less "goaty" than other breeds. The rich taste makes it prized for cheese and cream production—a preferred alternative to cow's milk because it does not trigger milk allergies and soothes the digestive tract for those with lactose intolerance.

What most sold me on Nigerian dwarves, however, is the fact they can quickly pay for themselves. Does are prolific, often having two to four kids each kidding. They also can be bred year-round, unlike larger goats, making for a steady milk supply.

Babies bring a return on my investment and are the most adorable things ever. Nothing beats a good goat hug, but I cannot keep them all. Thankfully, their popularity has increased demand for mini goats, giving me the opportunity to sell offspring and pay back the costs of keeping goats on the homestead.

It's no wonder Nigerian dwarves are one of the most loved goats across America. They are perfect for small-scale homesteaders like me. ■

Kids love to climb trees and fly kites in the summer, but both activities should take place away from power lines.

Keep It Safe

Electrical Safety Lessons for Kids

Electricity plays a major role in our everyday lives, and is a powerful resource that should be respected. Unfortunately, children often do not understand the dangers of electricity.

Escambia River Electric Cooperative encourages you to share electrical safety tips and lessons with your little ones as often as possible. We understand their attention spans run short, so here is a creative way to get them involved.

Depending on the age of your child, consider designating an "electronics deputy." The deputy should be responsible for pointing out electronics in your home that are not in use and keeping appliances safe from liquids. Reward your deputy for pointing out overloaded outlets or other potentially dangerous situations.

While it is fun and engaging to turn safety into a game, it is important to ensure your children understand the risks they face if they do not practice electrical safety.

One of the most important safety tips you can give your kids is to avoid downed power lines. In fact, it is best to avoid power lines, transformers and substations in general.

A downed power line can still be energized, and it can also energize other objects, including fences and trees. Make sure your kids understand the potential dangers of coming in contact with a downed power line or low-hanging wire. If they encounter a downed power line, ask them to tell you or another adult to call 911.

Here are a few other safety tips you can share with your kids:

- Do not stick fingers, forks or other tools into electrical sockets.
- Be careful not to overload an outlet.
- Check for frayed cords.
- Unplug a toaster before using a fork or your fingers to remove bread.
- Do not pour water on an electrical fire. Use a fire extinguisher.
- Know where buried electrical cables are before digging. Call 811 first to be sure.
- Make sure ladders, kite string or anything you are using does not come in contact with power lines.
- Do not climb trees that have branches in contact with power lines.
- Water and electricity don't mix. Do not use electrical appliances near water. ■

Use Energy Wisely

Insulation Makes a Difference

A well-sealed home—coupled with the right amount of insulation—can make a difference on your utility bills.

According to the U.S. Department of Energy, sealing air leaks and adding insulation can save up to 10% on your annual energy bill.

Insulation helps keep your home warm in the winter and cool in the summer. Air that leaks through the attic, outer walls, windows, doors and other openings wastes energy and increases utility costs.

Sealing leaks and adding insulation also helps reduce noise from outside; prevents pollen, dust and insects from entering your home; and provides better humidity control.

The amount of insulation in your home will vary with age and type of construction. Older houses—especially those built before World War II—typically are not insulated to today's standards. But almost all houses can benefit from added insulation.

One of the most cost-effective and easiest places to add insulation is your attic, including the trap or access door. There are several common types of insulation: fiberglass, both batt and blown forms; cellulose; rigid foam board; and spray foam.

Insulation performance is measured by R-value—its ability to resist heat flow. Higher R-values mean more insulating power. For maximum efficiency, foam or cellulose insulation is recommended.

Insulation works best when air is not moving around or through it, making it important to seal air leaks before installing insulation.

A quick way to see if you need more insulation is to look across your uncovered attic floor. If your insulation is level with or below the attic floor joists, you probably need more. The recommended level for most attics is R-38—about 12 to 15 inches, depending on the insulation type.

If your attic has no insulation, you may decide to insulate the underside of the roof with spray foam instead of covering the attic floor. It is best to hire an experienced contractor for this task.

If your attic has enough insulation, yet your home still feels drafty, too cold in winter or too warm in summer, you may need to add insulation to the exterior walls. This is more expensive and usually requires a contractor, but it may be worth the cost in lower utility bills.

If you replace the exterior siding on your home, consider adding insulation at the same time.

Don't overlook another area in your home where energy can be saved: ductwork for the heating and cooling system. If ducts run through unconditioned spaces in your home—such as the attic or crawlspace—they should be insulated and sealed with mastic tape. ■

ABOVE: Loose-fill insulation is a good approach for insulating your attic floor. BELOW: It's a good idea to seal air leaks before you add more insulation. PHOTOS COURTESY OF THE DEPARTMENT OF ENERGY

Clues You May Need More Attic Insulation

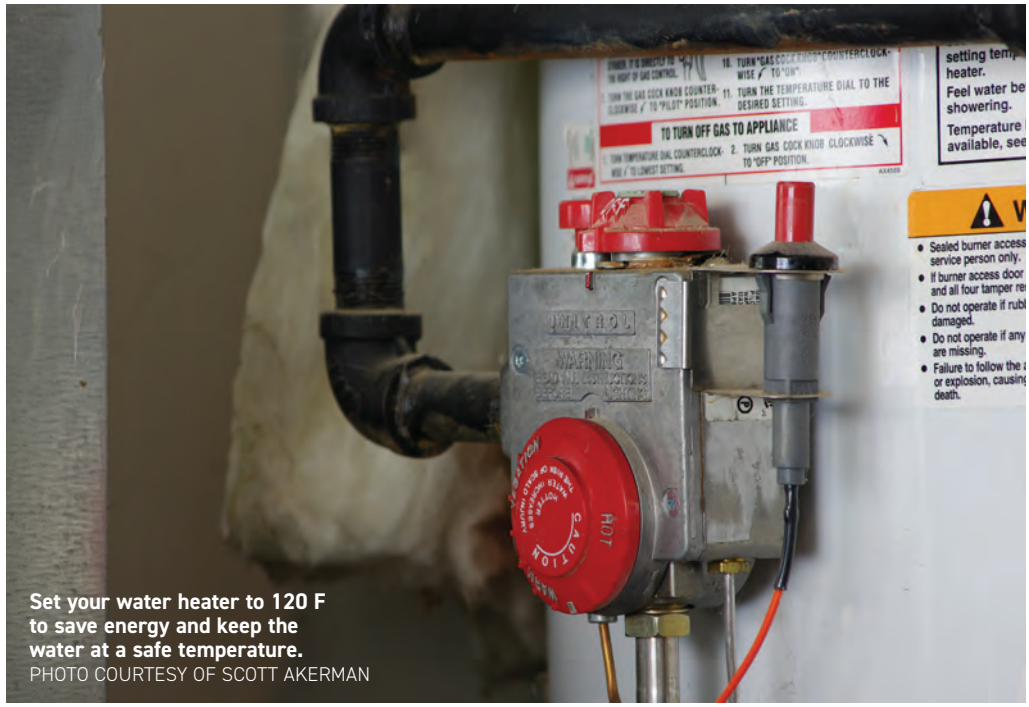
Your home might be a candidate for an attic insulation project if it has any of these problems:

- Drafty rooms.
- Hot or cold ceilings, walls or whole rooms, or uneven temperature between rooms.
- High heating or cooling bills.

A Word About Water

Saving Starts With Reducing Use

Make simple adjustments to hot-water use to cut utility costs



Set your water heater to 120 F to save energy and keep the water at a safe temperature.
PHOTO COURTESY OF SCOTT AKERMAN

Hot water is a modern convenience most people could not live without. But did you know water heating is the second-largest energy expense in your home after heating and cooling? It typically accounts for 18% of your utility bill.

You can easily reduce the amount you spend on water heating by using less hot water and making these simple adjustments to your unit.

- Reduce your water heater's temperature to 120 F. Each 10-degree reduction in water temperature saves 3% to 5% on water heating costs. Lowering the thermostat not only saves energy, it increases the life of your water heater and reduces the risk of scalding. Before adjusting the thermostat, turn off its power at the breaker. Hire a professional if you are unsure how to safely change your water heater's temperature.
- Wash clothes with cold water. Laundry detergent works just as well, and you save up to 40 cents a load.
- Shorten showers. A family of four showering five minutes a day uses 700 gallons of water a week—a three-year supply of drinking water for one person. By reducing shower time, you can save hundreds of gallons of hot water a month.
- Install aerating, low-flow faucets and showerheads. Consider replacing older showerheads and faucets.
- Insulate hot water pipes. Hot water flows to your faucet 2 to 4 degrees warmer, which means you will not have to wait as long for it to heat up, saving energy, water and money. A 6-foot, self-sealing sleeve easily slips over pipes. Depending on the location of your pipes, this could take effort. Exposed pipes in the basement are easy targets. Pipes in crawl spaces or walls might be more difficult.
- Check hot water pipes for leaks that can drain your energy dollars. Leaky faucets not only increase water bills, but also electricity costs for heating wasted water.
- If you plan to be away for an extended time, turn off your water heater. Even when you are not at home, your water heater uses energy to keep stored water warm. ■

Other Tips to Improve Hot-Water Efficiency

- Use your dishwasher efficiently. Wash full loads, choose shorter wash cycles and activate the booster heater. Consider buying an Energy Star-qualified dishwasher that uses 31% less energy and 33% less water.
- Fix leaks. One drip per second can cost $1 per month. At 60 drips a minute, you waste 8.64 gallons per day, 259 gallons per month and more than 3,153 gallons a year.
- Insulate your hot-water storage tank. For electric tanks, be careful not to cover the thermostat. For natural gas or oil hot water storage tanks, be careful not to cover the water heater's top, bottom, thermostat or burner compartment. Follow the manufacturer's recommendations.
- Install a timer that turns off your electric water heater at night or times when you don't use it.
- Consider upgrading your clothes washer. Energy Star says you could fill three backyard swimming pools with the water you save over the life of a new Energy Star-qualified washer.

Source: Energy.gov