

# Modern amenities conserve utilities

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## ABSTRACT

Since 1994, all toilets sold in the United States are required to be low-flow and use no more than 1.6 gallons of water for each flush. Because the Millers' older water-hogging hopper used 3.5 gallons per flush, they estimate they'll save more than 10,000 gallons of water a year, based on four flushes a day for each person in a four-person household.

## FULL TEXT

For The Tennessean

### INVEST IN YOUR HOME | PART 4

With prices shooting up, can you really afford to put money in your house? Yes! We put together several sometimes overlooked low-cost

projects that will add value to your home, even if your dream kitchen has to wait a few more years.

In the name of eco-friendly home improvement, by now you've probably replaced a conventional incandescent light bulb with an energy-saving compact fluorescent one.

You may even have installed a programmable thermostat or added extra insulation in the attic.

However, if you're truly serious about conserving natural resources, there are myriad other options. Here are five to consider.

Go with the flow

Start in the bathroom.

"When we remodeled the downstairs bathroom, we made the conscious decision to replace the older toilet with a new, low-flow toilet," Franklin homeowner Eileen Miller says. "It works just as well as any other toilet but uses half the water."

Since 1994, all toilets sold in the United States are required to be low-flow and use no more than 1.6 gallons of water for each flush. Because the Millers' older water-hogging hopper used 3.5 gallons per flush, they estimate they'll save more than 10,000 gallons of water a year, based on four flushes a day for each person in a four-person household.

"The new toilet only cost about \$100," Miller says. "That's a huge payback for a small investment."

The Millers aren't alone: The U.S. Environmental Protection Agency says that as more older toilets are retired, the country will save more than 7 billion gallons of water a day by 2020. Lowe's Home Improvement estimates replacement costs as low as \$200 including installation, depending on the model.

#### Go tankless

Replacing an existing hot water heater with a tankless system is another green home option. "Tankless systems offer both an energy savings and a water consumption savings," says local plumbing and engineering consultant David Spaulding. "It's the only kind that's used in Europe."

Tankless hot water heaters don't store water, Spaulding notes, so homeowners don't pay to heat water that isn't being used. In most cases, utility bills are reduced by up to 20 percent.

This energy-efficient technology, however, does come with a hefty price tag of about \$3,000; conventional systems cost \$800 to \$1,400.

"The costs will start to come down," Spaulding says. "It's being driven by the residential market."

#### Don't let the sunshine in

Window films are another environmental home improvement idea that's garnering some attention.

"A lot of people still haven't heard about or considered window films as an energy-saving option," says Scott Birdwell, owner of Changing Shades in Nashville. "But that's changing."

Window films are the practical application of a process called "sputtering" originally developed by NASA for use in the space shuttle, explains Birdwell, and shouldn't be confused with purple plastic shades of yesteryear.

"Window films are actually clear sheets of metal that you can see through," he says. "It starts with grinding up exotic metals such as aluminum and nickel, and it's all held together with a clear polyester."

Films reject up to 65 percent of all solar heat that would otherwise pour through a window; because keeping heat out keeps the air conditioner off, there's a significant reduction in energy use.

Window films cost \$5-\$6 a square foot, but homeowners can expect their investment to pay for itself in less than three years. Considering the U.S. Department of Energy calculates that 45 percent of a utility bill represents heating and cooling costs, it's a cost-effective strategy.

#### Garage doors go green

Consider replacing an aging garage door with an energy-efficient insulated one.

"Your garage door covers the largest opening in your home," said Scott Ogle, owner of Tri County Garage Doors in Middle Tennessee. "The rest of your garage is insulated, so why not the garage door?"

Most homeowners fail to make the connection between having a non-insulated garage door and the fact that their living space over the garage is the hottest (or coldest) room in the house, Ogle says.

"But once we start talking about it, it's like a light bulb goes off," he says. "Without insulation, sunlight just radiates heat through that garage door."

When shopping for an insulated door, Ogle says, homeowners should consider "R-value," as the greater the value, the greater its insulation properties. Also, note the type of insulation that is used, as a solid core is better than loose insulation.

A three-layer steel door with an R-value of 6.5 for a two-car garage will cost about \$1,000 including installation. You could easily pay double that amount depending on the size and style you select. There's no industry standard that measures energy savings for insulated garage doors, but Ogle maintains that it's a wise investment.

"I think you'll recoup your costs," he says. "These doors can pay for themselves in a year or two."

### Shady savings

Creating a green home isn't limited to its physical structure. Small outdoor changes can make a big difference as well.

"One thing everyone should consider is whether their air conditioner condenser is shaded," said landscape architect Brett Smith, vice president at Ragan Smith Associates in Nashville.

"That way it doesn't have to overcome its own inherent heat."

If you choose shrubs instead of trees to shade a unit, Smith advises caution.

"Shade is one thing, but you don't want to hinder its air flow," he says. "Many units draw in air from the side, so you have to be careful how close you plant."

Another landscaping strategy that cuts cooling costs, Smith says, is planting trees on the south and southwest side of a house. "Deciduous trees are good as they let in the winter sun but protect from summer heat," he says. "It's always simple to plant a tree, but it can be complicated finding just the right one for this climate."

The cost for nursery stock trees starts at around \$100 per caliper inch. If landscaping is a do-it-yourself project, careful planning is needed to account for overhead power lines, underground utilities, sidewalks and easements.

### Going green can mean saving money

Here are four more ways to save money by going green.

### BUY ENERGY STAR APPLIANCES

These more efficient appliances can use 50 percent less energy and water than standard models. While Energy Star appliances cost more up front, money saved on utility bills can pay for the difference over time. To learn more, see [EnergyStar.gov](http://EnergyStar.gov) (click on "appliances" link).

## GET A PROGRAMMABLE THERMOSTAT

A model that controls heating and central air-conditioning can run a little more than \$100. But the payback is fast, less than a year in most cases. Research shows that programming heating and cooling systems to coincide with the coming and going of occupants can save \$150-\$180 in as little as seven months. To learn more: visit [eere.energy.gov/consumer/tips/heating\\_cooling.html](http://eere.energy.gov/consumer/tips/heating_cooling.html) for tips.

## SWITCH TO RECHARGEABLE BATTERIES

Common alkaline batteries lose 8 percent to 20 percent of their charge annually. But rechargeable batteries can be reused as many as 500 times and are extremely effective in remote-control devices for household electronics, digital cameras and small flashlights. They are also more environmentally friendly because they reduce the amount of toxins released in landfills. To learn more: See [www.dec.ny.gov/chemical/8819.html](http://www.dec.ny.gov/chemical/8819.html).

## GET BATTERY-POWERED YARD TOOLS

Replacing old gas-powered lawn and garden equipment with cordless tools reduces airborne pollutants, including carbon monoxide and nitrogen oxides. Black & Decker, Toro and Homelite are among the manufacturers of battery-powered yard tools, from edgers to blowers to line trimmers. To learn more: Visit [www.epa.gov/oms/equip-ld.htm](http://www.epa.gov/oms/equip-ld.htm) for information.

- GARY DYMSKI, NEWSDAY

### Step lightly

If your green spirit is willing but your home improvement project flesh is a little weak, try calculating your carbon footprint. Once you see just how many tons of carbon emissions you create each year through home energy use alone, you might not mind spending a Saturday afternoon planting a tree.

Several sites offer user-friendly questionnaires. Measuring carbon footprints is not an exact science, so try exploring more than one.

Three that have earned accolades:

\* The U.S. Environmental Protection Agency's at [www.epa.gov](http://www.epa.gov).

\* The Nature Conservancy at [www.nature.org](http://www.nature.org).

\* [www.terrapass.com](http://www.terrapass.com), which also helps users buy "carbon offsets" to make up for all those greenhouse gases they generate.

## DETAILS

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