

# WATER Works!

Provided as a public service for our neighbors and customers...

**Harris County Water  
Control and Improvement  
District 132**

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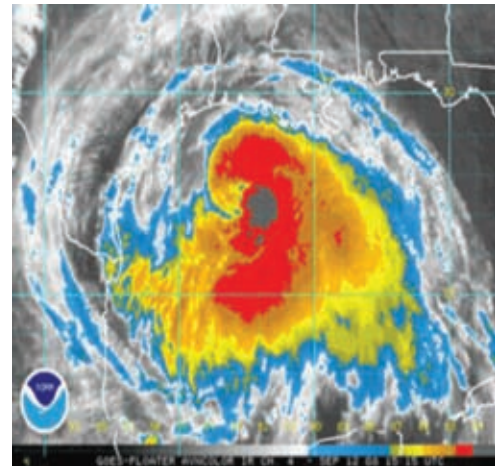
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***The water we  
conserve today  
can serve us  
tomorrow!***

## Long Range Planning Pays Off...

Except for evidence here and there throughout the community...and a lot of brown, dead branches dangling in trees...it would be easy for a visitor to be unaware that we were close to ground zero for one of the decade's most destructive storms. IKE was no friend to northwest Harris County but, thanks to some very timely, aggressive long-range planning on the part of the WCID 132 board of directors, our neighbors and customers escaped some of the more serious potential side effects of such a natural disaster.

"We learned some valuable lessons from hurricanes Katrina and Rita," explained Mike Ammel, president of EDP (Environmental Development Partners), WCID 132's operator. "We narrowly escaped a more up-close-and-personal look at some of Mother Nature's destructive side, but the horrific devastation left in the wake of these storms still served as pretty convincing testimony to the board members that being prepared to survive and manage the worst-case disaster scenario made good business sense. As it turns out, it was the best decision that could have been made.



During the IKE power outage, which lasted for more than a week, none of the district's customers ever lost water or sewer services."

In 2007, the district's board of directors authorized the purchase of a natural gas generator for the Mantana Court water plant. This equipment supplemented diesel generators placed at the lift stations, for which they had fuel delivery contracts with a supplier that owned his own terminal.

Another fortuitous decision was to utilize two-way radios that allowed the operator's team in the field to communicate even without cell service. This was possible because WCID 132 is a political subdivision under Texas law, and this allowed them to connect into the Emergency Radio Network of the 13 county region.

*Continued on page 2*

## Hurricane IKE...

Continued from page 1



“Once again we learned that the cornerstone in any emergency situation is always communications,” Ammel explained. “Thanks to the board’s long-range emergency planning, we were able to not only meet our needs, but we were able to come to the aid of some surrounding districts that didn’t fare as well with supplemental power. We used the all-important radios during the worst of the power outages, and did our best with the rest.”

“With this experience behind us,” he continued, “we will be doing some strategic planning to improve our ability to communicate with the public and our customers in any emergency...with or without electricity. That might mean some new temporary emergency signage throughout the service area and perhaps an emergency ‘drill’ or two to get folks used to a new system. We know for sure that the best preparations in the world don’t do much good if you can’t tell people about them when they’re needed the most. That’s why we will continue planning for the emergency just ‘around the corner’ so we’ll be ready for that, as well.” ■



## Tips to Stay Safe this Holiday Season



Last minute work projects, multiplying activities for the kids, travel planning, and shopping, shopping, and more shopping. The Holiday season can be a magical time, but the increased hustle and bustle can also take our mind away from safety issues and leave us more vulnerable to theft and other common holiday crimes.

Please review the following tips from the Houston Police Department, and stay safe, prepared and aware this Holiday season.

### **While Shopping:**

- Stay alert and aware of what's going on in your immediate surroundings. Shop with friends. There's safety in numbers.
- Avoid carrying large amounts of cash. Pay for purchases with a check, or a credit or debit card. When carrying a purse, never wrap the strap around your arms or shoulders. You could risk injury from a would-be purse-snatcher. Use a clutch purse tucked under your arm or wear a fanny pack. Men should not carry wallets in their rear pants pockets.
- Protect your debit card PIN, credit card and drivers license numbers from strangers.
- Watch your purchases while eating in mall food courts. Bags can be quickly taken.
- Educate your children on what to do if they are lost or get separated from you.
- Don't overburden yourself or jeopardize your safety by carrying too many packages.



### **In the Parking Lot:**

- Avoid shopping in the evening and park in a high visibility area. Do not park next to a vehicle with dark tinted windows.
- When carrying packages to the car, have your keys in your hand. Be observant of anyone watching you. If possible, move your car to another parking space to deter a burglary of your vehicle.
- Walk briskly, confidently and directly through the parking lot.

# Texas Sized Steps to Improve Water Efficiency in Landscape Irrigation

*(Information provided by the Alliance for Water Efficiency and the Houston Gulf Coast Irrigation Association)*

***“The TCEQ has adopted new rules regulating landscape irrigation in Texas. The new rules address design, installation and operation of irrigation systems...”***

Texas landscapes could become more efficient in the near future. At the direction of the 80th Texas Legislature, the states’ environmental agency, the Texas Commission on Environmental Quality (TCEQ), on June 4, 2008 adopted new rules regulating landscape irrigation in Texas. The legislature said the rules must specifically address: The connection of irrigation systems to any water supply; the design, installation and operation of irrigation systems; water conservation; and the duties and responsibilities of irrigators. The new rules become effective January 1, 2009.

Texas irrigators will be faced with some additional requirements designed to result in more efficient irrigation systems. Among the major changes - the irrigator must complete an irrigation plan for every new installation, and the plan must be on the site during construction of the system.

Once the system is complete, the irrigator must provide a copy of the plan reflecting any changes made during installation to the property owner. The owner must receive instructions for operating the system efficiently, including the precipitation rate and flow rate of each irrigation zone, and a recommended watering schedule based on evapotranspiration. The new system must include rain or moisture shut off technology. Some specific design standards include no overhead spray irrigation in areas with a width less than 48”, e.g., between a curb and walk. No water may be thrown onto impervious cover.

Beginning Jan 1, 2010, a licensed irrigator or licensed technician must be on the site during all new irrigation construction. The licensed technician is a new license developed to provide on-site supervision of the ongoing work.

Enforcement of the states’ irrigation laws and rules has been an ongoing problem since the inception of the irrigator licensing law some 35 years ago. In the past, the state has attempted to provide enforcement with a very limited staff.

With the passage of HB 1656, the legislature required all municipalities with a population of over 20,000 to enforce the new rules, and require permits for new irrigation systems. Now, there will be enforcement officers on the streets to catch unlicensed operators and ensure the systems are being installed efficiently. ◆



## How to conserve both water and energy... and save money in the process!

There have been times in this land of plenty when it has been necessary to curb our voracious appetites for finite natural resources. Certainly during wartime ...when the nation's needs came first...and today, as *our growing demand for energy and water is increasingly outstripping supply*. In both cases, it is not that we're running out of energy or water -- there is a greater supply of fossil fuels (oil, natural gas and coal) available yet to be discovered and harnessed in this country than we have used up to this point in our history. And, we have the same amount of water on the planet that has been here since the dawn of time, but most of it is not drinkable... and we have drawn down the supply in our underground aquifers faster that it can be renewed.

There is an urgency to avoid wasting these valuable resources -- a growing need to steward these dwindling resources and to exercise caution about utilizing them more efficiently so that supplies can be stretched into the future. Cost is also a formidable driving force toward conservation practices. As energy costs rise, the research and development necessary to bring alternatives online increases correspondingly; witness the recent expansions in the use of wind turbines and solar power options as viable parts of the energy mix.

The more we understand about how we use energy and water in our homes, the more we realize that very often saving one resource

results in saving the other. For example, many of the things that use the most water around the house also have a high energy consumption... case in point, water heaters and the many ways hot water is used. It doesn't take a Sherlock Holmes to find the connections.

The typical U.S. family's energy bills average about \$1,600 a year and, sadly, a large amount of that energy is wasted. While the cost of water is nowhere near the same annual investment required to cool, heat, light and power our homes, water bills are rising dramatically and the days of cheap and plentiful water are history. The days of wasteful practices and habits, however, should be history, as well. Did you know, for example, that *more water is wasted in our homes each year through unrepaired leaks than the amount of water we drink?*

### **DOUBLE UP AND SAVE TWICE...**

The best place to start is the top...the worst water and energy users in the household. According to the US Department of Energy, water heating (13%) and appliances and lighting (34%) use just about half of the energy we consume at home. If we match up these same categories with water consumption, we can determine our joint conservation targets pretty quickly. Basically they are the things/activities/appliances that use hot water. While there are long lists of ways that water and energy can be conserved, we'll concentrate on the 'two-fers' here.

### **In Hot Water...**

There are four basic ways to take charge of your water heating bills: don't heat the water so hot; insulate the water heater; use less; or upgrade the equipment to a newer, more efficient model.

- Lower the temperature setting on the water heater to 120 degrees... that temperature will prevent bacteria from building up and will still be sufficient to generate enough comfortable hot water for most uses.

- Add an insulation 'jacket' to the tank and wrap any exposed pipes to knock off up to 15 percent of the hot water costs.

- About every three months, drain off a quart of water from the tank to remove any sediment that impedes heat transfer and lowers the efficiency of the hot water heater. Be sure to follow the manufacturer's instructions to accomplish this.

- Time for a new hot water heater? Don't wait until it fails before replacing it; and take time to research energy and water efficiency and performance. Look for the Energy Star and EnergyGuide labels\* which list key information you'll want to consider when making a purchase decision.

Let's start with using less. At home, hot water is generally used in three rooms -- the bathroom, laundry room and the kitchen - and there are some great conservation options in each room. Here's how hot water use breaks out: 32 percent of the heated water is used in washing

\* See page 8

clothes; 20 percent goes down the shower drain; another 20 percent is used for bathing (sink and bath tub use); and automatic dishwashing consumes 12 percent, which leaves 5 percent for preparing food and 4 percent for washing hands.



### The Bathroom...

■ Start with the obvious...fix leaky faucets and plumbing joints. Wasting water is bad enough, but if it is HOT water, the cost goes up. Fixing a leaky faucet/fixture can save 20 gallons a day for every leak stopped.

■ In the shower: install a low-flow shower head. You don't have to sacrifice pressure and 'designer' spray cycles - even the efficient new heads have them. Restricting the flow can cut shower water use in half, and save 500 to 800 gallons a month. Here's an amazing factoid: a five-minute shower with a low-flow showerhead would save enough water in a year to fill a 15-ft. aboveground pool...or about 4550 gallons. If everyone in the US did this, we'd save enough water to fill about 2,100 Giants Stadiums!

■ Install aerators on the faucets. Surprisingly, faucets account for about 15 percent of the indoor water use, and they usually flow at twice the rate necessary to get the job done. If aerators are added to both bathroom and kitchen sinks, about 1000 gallons of water a year can be saved...and much of that is energy-intensive hot water. While you're at the sink, turn off the water while brushing your teeth or shaving. It may seem like such a little amount of water (three gallons

on average for either activity), but it adds up to an annual savings of 2,880 gallons.

■ Take shorter showers -- even a one or two minute reduction can save up to 700 gallons a month. A lengthy shower will really 'fire up' a hot water heater. Consider adding a plastic container or bucket at the side of the shower to capture unused water. This can be used to flush the toilet or to water houseplants if it isn't soapy, or for household cleaning chores if it is.

### The Laundry Room...

Appliances account for about 1/5th of your household energy consumption, and two of these (washer and dryer) are usually found in the laundry room. About 90 percent of the energy used by the washing machine is to heat the water, so this provides the best conservation options: use less - or cooler - water.

■ With the many choices of cold water detergents on the market today, 'warm' or 'hot' water settings can usually be reserved for really dirty clothes or for combating stubborn stains.

■ Use your washing machine only with full loads and with the minimum water setting to get the job done.

■ Wash bulky bedding and/or towels separately from lighter-weight clothing items. This will help the dryer work more efficiently. While the dryer doesn't use water directly, maximizing its performance is key to cutting energy costs.

■ When it is time to purchase a new washing machine, there are some great high efficiency choices out there today. Always check for the Energy Star and EnergyGuide labels in making your decision. The new front-loading, horizontal-axis models generally save energy and water. The older top-loading vertical-axis models immerse the items in a full tub of water, and then agitate it through the wash cycle and spin it through the rinse cycle. The new high efficiency style doesn't have to fill the tub so full, and tumbles laundry repeatedly through fast cycles, similar to the

motion in a clothes dryer, using about half the water in the process. Thanks to the fast spin cycles, the *He* type is also able to get more water out of the clean laundry, which reduces the time and energy needed for drying.

### The Kitchen...

There are basically two hot water consumers in the kitchen: the dishwasher and the sink. Thanks to the *National Appliance Energy Conservation Act of 1987*, manufacturers made significant water-- and energy-efficiency improvements to dishwashers by reducing hot water use, which accounts for most of the energy used by the appliance.

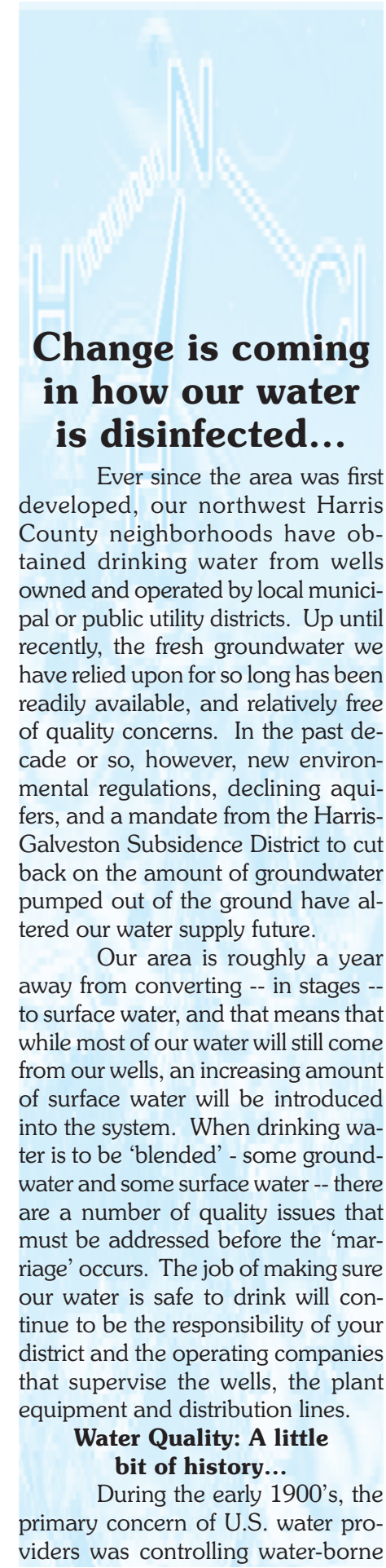
■ Today, installing a 7.0 gallon per load (gpl) dishwasher to replace a model that used 9.5 to 12.0 gpl will save an estimated 2.6 kWh per household, per day. This adds up to a 940 kWh savings per household, per year.



■ A dishwasher uses energy for several functions: heating water for cleaning and sanitization; to run the motor; and to operate the heater or fan to dry the dishes. Making setting adjustments offers several good options for conserving water and energy, so be sure to check the manufacturer's instructions and owner's manual to discover ways to tailor energy and water cycles needed for a particular load.

■ Since a heating element is generally used to dry the dishes at the end of the washing cycle -- and requires about 7 percent of the energy used by the machine - choose the no-heat drying option if available, or simply

*Continued on page 8*



## Change is coming in how our water is disinfected...

Ever since the area was first developed, our northwest Harris County neighborhoods have obtained drinking water from wells owned and operated by local municipal or public utility districts. Up until recently, the fresh groundwater we have relied upon for so long has been readily available, and relatively free of quality concerns. In the past decade or so, however, new environmental regulations, declining aquifers, and a mandate from the Harris-Galveston Subsidence District to cut back on the amount of groundwater pumped out of the ground have altered our water supply future.

Our area is roughly a year away from converting -- in stages -- to surface water, and that means that while most of our water will still come from our wells, an increasing amount of surface water will be introduced into the system. When drinking water is to be 'blended' - some groundwater and some surface water -- there are a number of quality issues that must be addressed before the 'marriage' occurs. The job of making sure our water is safe to drink will continue to be the responsibility of your district and the operating companies that supervise the wells, the plant equipment and distribution lines.

### Water Quality: A little bit of history...

During the early 1900's, the primary concern of U.S. water providers was controlling water-borne

disease. Before science and technology came up with effective disinfection measures, widespread outbreaks of cholera and typhoid frequently occurred throughout the United States. While other less developed countries may still experience epidemics of these horrific diseases, they all but disappeared in the U.S. when chlorine and filtration became widely used in the 1930's.

Water suppliers today have methods to control nearly all of water's natural properties -- hardness, acidity and alkalinity, color, turbidity, taste and odor -- as well as the biological and organic chemical characteristics. The treatment of groundwater varies from community to community, and even from well to well within an area, depending on what is in the water. The water may be treated as it is pumped from the ground to eliminate certain contaminants or it may be chlorinated to minimize the risk of bacterial or parasitic infection.

No one likes to consider that there might be contaminants in our drinking water, but there are a wide range of them. In fact, contaminants fall into several categories: those that occur naturally, such as arsenic and uranium, and those that are manmade, such as solvents or pesticides. In addition, when chlorine reacts with naturally occurring organic compounds found in the water during the treatment process, disinfection byproducts -- or DBPs -- can occur, which introduces another quality issue that must be addressed.

Groundwater can also pick up contamination from fertilizers, septic tanks, naturally occurring minerals, industrial chemicals and metals. Storm drains can carry polluted runoff from neighborhoods and farms into rivers and streams, which in turn can carry harmful microorganisms and bacteria from animals or humans into the source waters of our drinking supplies. Stormwater pollution is an increasingly serious issue that deserves our attention and assis-

ance.

Drinking water supplies in this country are highly regulated, at all levels of government. Each year, the US Environmental Protection Agency (EPA) requires water utilities to provide their customers with detailed information about the quality of their drinking water, as well as the amounts of any contaminants found in the district's source water. The report -- known as the Consumer Confidence Report -- is sent to water customers each summer. This oversight and regulation, the diligence of the water managers, and *advances in science and technology all provide reassurance that our drinking water meets the highest possible quality standards.* This will continue be true as we make the conversion to surface water.

### The Chemistry of Blending...

The conversion to surface water will begin in January 2010 and we will be incorporating water from Lake Houston into our distribution system slightly ahead of that time in order to meet the Subsidence District mandates. That water will already be disinfected with chloramines at the City of Houston's Northeast Water Purification Plant. The plant operators selected that method because chloramines are preferred for their ability to last in the disinfection system; lack of taste and odor; and for their safety. This method of water disinfection is nothing new and has been used in this country since 1917, when it was introduced in Denver, Colorado's water supply. The EPA estimates that more than half of the nation's large water systems currently use chloramines as at some point in their systems, and expects that number to increase in the years ahead.

A problem does occur, however, when mixing surface water disinfected with chloramines with groundwater that has been disinfected with chlorine, so the districts are switching to chloramine disinfection ahead of the initial conversion deadlines to avoid this chemical con-

flict. The use of both chlorine and chloramines is regulated by the EPA and the Texas Commission on Environmental Quality (TCEQ).

Chloraminated water is safe for bathing, drinking, cooking and all normal tasks we have for water every day. There are two situations, however, where special care must be taken: kidney dialysis treatments and tropical fish aquariums. In both cases, the water comes into direct contact with the blood -- in dialysis through a permeable membrane, and in fish through their gills -- and just as with chlorine, the chloramines in the water would be toxic. In these situations, the chloramines must be removed from the water; a task that can be accomplished by introducing an additive or by use of a granular activated carbon filter/treatment. For more specific information, kidney patients should consult their physician about any special recommendations, and fish owners should consult experts at their pet store about which products/filters will accomplish the desired elimination of chloraminated water.

It is important to note that there are no other restrictions for kidney patients -- drinking, bathing,

cooking -- when using chloraminated water...just during dialysis when the water has the potential to come into direct contact with the blood supply. While the water is indeed safe to consume, other medical patients -- those with suppressed immune systems and those undergoing chemotherapy -- should consult with their physicians if they are at all concerned about drinking chloraminated water.

Today, significant and wide-reaching water development projects have occurred in every region of the State, as residential, commercial and municipal users are drawing more of their supply from a mixture of groundwater and locally developed surface water sources. Substantial technological developments in monitoring, assessing and treating water ensure a drinking water supply of high quality for water users here and across the country. This precious supply needs to be protected from pollutants -- whether natural or man-made. Our District is committed to ensuring a sustainable, safe, top quality supply of water for future generations and will continue to meet or exceed state and federal water quality rules and regulations...just as they always have. ♦

### Chloramine Facts:

- Chloramines are a combination of chlorine and a small amount of ammonia. The primary type of Chloramines use in our systems will be monochloramine (NH<sub>2</sub>Cl), in a ratio of 5 parts chlorine to one part ammonia-nitrogen.
- The amount of chloramines in our drinking water will be extremely small: no more than 2 parts per million parts of water.
- About the only thing you might notice about chloraminated water is that it may have less of a chlorine taste or smell.
- Chloramines will not change the pH of the water; it will remain as it was before the conversion.
- Swimming pools will still need to use chlorine to control algae and growth of bacteria.
- Chlorine dissipates quickly when water sits for a few days, but chloramines do not. They may take weeks to disappear. For aquarium or pond concerns, check with a pet store for agents or filters that will remedy the problem.

### Meet Some GOOD Bugs

If you know a little about the bugs that visit or live in your yard or garden, you can make better choices about pest control. There is a time to exterminate and a time to let the insects do their thing. Mostly this is common sense...is the insect actually damaging your plants? How much 'damage' can your plants tolerate?

Sometimes the pests can be picked, washed or vacuumed off plants to control infestations...in fact, pulling weeds is a natural pest control activity!

Here are some bugs that can actually help out in your garden...



**Centipedes** (left) - may look scary but they feed on slugs and a variety of small insect pests.

**Ground beetle (right)** - eat slug eggs and babies, plus other soil-dwelling pests.



**Hornets and yellow jackets** (left) are effective predators. However, controls may be necessary if they pose a threat to people or pests.



**Lacewings** (above) and their alligator-like larvae eat aphids, scales, mites, caterpillars and other pests.



**Lady beetle** (above) larvae and adults feed on soft-bodied insects such as aphids, mealybugs, scale insects.



## Time to Save Energy and Water...and Money

Continued from page 5

turn off the dishwasher, open the door, and allow the dishes to dry themselves.

■ Scrape, don't pre-wash the dishes. Studies show that most people continue to pre-wash before loading items into the dishwasher, even though models built in the last 5-10 years do a great job cleaning even heavily soiled dishes. If you feel like you simply must pre-rinse, use cold water.

■ Wash only full loads. The dishwasher uses the same amount of water whether it is full or not, and this practice really saves energy, too.

■ Select the 'light-wash' option if there is one. Experts say that it is rarely necessary to use the normal setting on a dishwasher. This light-wash option cleans just as well and can reduce the water use up to 55 percent. That could translate into an annual savings of 2,860 gallons of water.

■ At the kitchen sink - don't let the water run until it gets hot if you're using it for cooking; that's heating it

twice. Add a faucet aerator; less hot water saves both energy and water.

■ Since almost 50 percent of American households have a garbage disposal in the kitchen, here is yet another way to SAVE at the sink. Use the disposal less, and the garbage can more -- even better, COMPOST! This would save between 50 and 150 gallons a month. If you must use the disposal, run it with cold water.

There are hundreds of ways to conserve energy and water at home, and these suggestions have focused on situations when both options occur together. The more conscious we become of the way we use water and energy in and around our homes, the more ways we will find to use them efficiently. The bottom line, of course, is that saving these precious natural resources saves us money, too. And that's not such a bad deal. ■

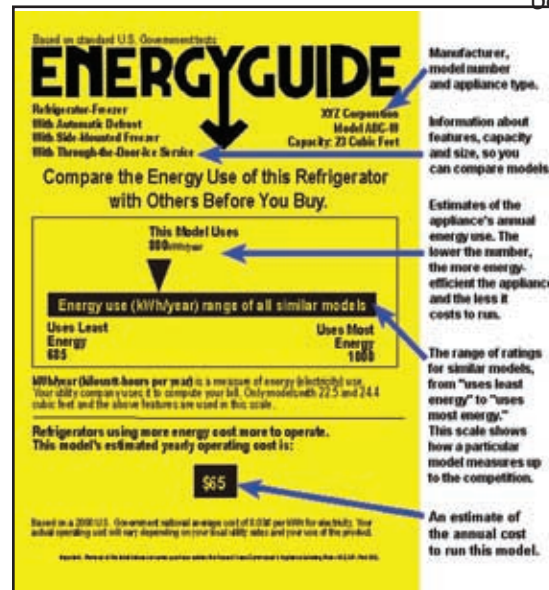
## Did you Know?

A kilowatt-hour (kWh) measures a unit of energy; the amount of energy that would be transferred at a constant rate of one kilowatt for one hour; the amount of electricity required to burn a 100 watt light bulb for 10 hours. This is the unit used by power companies for billing purposes.

According to the US Department of Energy, an average American household uses approximately 11,000 kWh per year.

## ENERGY STAR...

In 1992, the US Environmental Protection Agency introduced Energy Star as a voluntary labeling program intended to identify and promote energy-efficient products. Computers and monitors were among the first products to be labeled. The label is now on major appliances, office equipment, lighting, home electronics, to name just a few. EPA has extended the label to cover new homes and commercial buildings. Today there are over 12,000 private and public sector 'partners' in the Energy Star program. ■



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