

WATER Works!

Provided as a public service for our neighbors and customers.

Harris County Water
Control and Improvement
District No. 132

BOARD OF DIRECTORS

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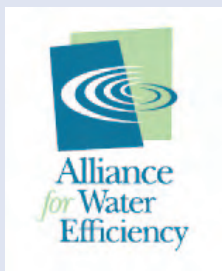
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*The water we
conserve today,
can serve us
tomorrow!*

A MESSAGE FROM THE BOARD OF DIRECTORS...

It's hard to think about water conservation opportunities involving irrigation when the weather has cooled and the turf grass growing season has ended. But that's exactly what we're going to ask you to do in January when we reschedule our important community workshop originally planned for November 12th. (Circumstances developed that forced us to postpone the program. We thank those of you who signed up to attend, as well as those who didn't get word of the cancellation through the website. Please accept our apology for any inconvenience this may have caused.) We hope that you'll keep your interest alive through the holidays and join us for the rescheduled event!

Basically, we have an *offer we hope you won't refuse...*and by attending the meeting now scheduled for Wednesday, January 27th at the Cypresswood Community Clubhouse (3705 Cypresswood Drive, Spring, TX 77388) at 7:00 PM you'll be able to get a jump on the spring lawn and garden watering frenzy, save a significant amount of money AND, perhaps even more importantly, SAVE WATER. The Board of Directors of WCID 132 is serious about using our water resources more efficiently. We have made arrangements with a nationally-known company (DBLive) to provide FREE, state-of-the-art climate-based irrigation controllers to the first 50 high-user irrigation residents/customers who sign up at the workshop. In addition, we're working with the **W.I.S.E.* Guys** to provide licensed irrigators who will perform thorough evaluations for customers with existing residential irrigation systems to identify leaks and other water-wasting problems. With the cost of water continuing to rise (see page 8), every single water conservation measure really can make a difference.

We're also making some real progress in development of our **Water Conservation Research and Demonstration Center** at our water plant on Evening Trail. By spring, we plan to have some exciting hands-on examples of water conserving actions you can recreate at home. We plan a series of events at the new Center, and hope that you'll join us.

Please see the insert to learn about the District's gift to you for recycling your Christmas tree! Take a minute or two to complete a brief sign-up form online (www.wcid132.com), drop off your tree at the water plant according to the directions, and we'll do the rest.

Have a Delightful Holiday Season and a Happy New Year!

**Water Irrigation System Evaluation*

Changes are coming in how our drinking water is disinfected...

Historically, drinking water provided by Harris County WCID 132 has been disinfected by using **chlorine**. Up until the mid 19th century, even in this country, water borne diseases managed to take their toll. After the last serious outbreak of the disease in the 1860's, cholera -- which is one of the most rapidly fatal illnesses ever known -- has virtually disappeared in America, thanks to the development of modern water treatment facilities and widespread disinfection of water supplies. The need for disinfection still exists, however, to destroy bacteria, viruses, and other potentially harmful organisms that can contaminate water, and to prevent infectious diseases.

In the coming months, WCID 132 -- along with approximately 59 other MUDs in the FM 1960 area -- will be converting to surface water in the initial phase of compliance with a Harris-Galveston Subsidence District groundwater reduction mandate. In 2010, we will reduce our use of groundwater by 30 percent; in 2020 by 70 percent; and in 2030 by 80 percent. This means that, while some of our water will still come from groundwater wells, surface water will become the primary source. This conversion is required to allow underground aquifers to recharge, and to help halt subsidence that has occurred in the area during the past 50 years or so. The North Harris County Regional Water Authority is constructing a new infrastructure to bring surface water to our neighborhoods, and has installed over 70 miles of water line.

New Chemistry...

When drinking water is to be 'blended' -- using some groundwater and some surface water -- there are a number of quality issues that must be addressed before the 'marriage' occurs. The new surface water supply will already be *disinfected with chloramines* at the City of Houston's Northeast Water Purification Plant.

This method of water disinfection has been used in this country for more than 90 years, and the EPA estimates that more than half of the nation's large water systems currently use chloramines.

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 these situations, the water comes into direct contact with the blood -- in dialysis through a permeable membrane, and in fish through their gills -- and the chloramines in the water would be toxic.) There are no other restrictions for kidney patients when using chloraminated water, just during dialysis when the water has the potential to come into direct contact with the blood supply. If they want more specific information, kidney patients should consult their physician about any special recommendations, and fish owners can consult pet store experts about which products/filters will accomplish the desired elimination of chloraminated water.

The District has posted a copy of the letter notifying residents about the conversion to surface water and the new disinfection with chloramines that is required by the Texas Commission on Environmental Quality (TCEQ) online at www.nhcrwa.com. 💧



The Great Bottled Water Debate...

No matter which side of the bottled water debate you're on, there are essentially two topics under the microscope...

One, is it "better" than tap water? And the second topic has to do with the bottle itself. Let's consider these issues and points of view.

A freelance writer/environmentalist from Canada pointed out recently that, *"Our lives are filled with unnecessary, wasteful and idiotic things to buy. But few are as stupid as bottled water...few products are as downright silly. Folks who work in advertising always cite it as the best example that proves you can persuade people to buy anything...as long as it has a spiffy logo and a slick name. You can even convince people to pay 1000 times more for the exact same product that comes out of their tap for free."*

Wow...that's pretty hard to argue with. In fairness to the pro-bottled water drinkers, however, many say they just don't like the taste of their tap water...or that they simply have to drink a lot of water every day to stay on a special diet and the bottled water is so much more convenient to take along, etc.

Something is sure working in favor of the product... consumers are spending upwards of \$100 billion a year on bottled water. Americans drink more than 30 billion gallons of bottled water annually and that's more than coffee, milk or beer! What these water consumers may not realize is that 24 percent of the bottled water out there for sale on the grocery store shelves is TAP WATER repackaged by Coke and Pepsi...no kidding.

If you're considering cost factors alone, according to Treehugger.com, the average cost of eight glasses of water from your faucet every day would run you around \$0.49 *per year*. The same amount of bottled water would cost around \$1,400!

According to Ben Grumbles, the former head of the U.S. EPA's water programs, *"It's an urban myth that bottled water is safer than tap water."* He continues to point out that the EPA requires municipalities to test water daily and validates testing to make sure that the nation's community water systems meet stringent standards. There are Food and Drug Administration standards for bottled water, too, but even bottled water officials won't claim that bottled water is healthier, or better for us. The International Bottled Water Association (IBWA) says it *"all boils down to what consumers prefer."*



Moving on to issue number two...the bottle itself. According to detractors, water bottles clog landfills and consume energy in their manufacture. Again, that's a hard statistic to argue with. The Container Recycling Institute, for example, reports that only 23 percent of plastic bottles were recycled in 2006, and the year before that, over 144 billion containers were wasted in the U.S. Only 11 states have container deposit legislation, and even those don't always cover water bottles. The Institute says that 85 percent of the water bottles end up in landfills or on the side of the road. Only 15 percent make it to be recycled. And – here's a stunning fact – the PET plastic bottles take 400 to 1000 years to degrade. Ultimately, where is all that plastic going to end up???

Here's another fact to consider...more than 17 million barrels of oil are used each year to **create** bottles for water. That is enough petroleum to fuel one million U.S. vehicles for an entire year, according to the Washington, D.C. based Earth Policy Institute. That's a pretty large *carbon footprint*, if you're into that sort of thing.

So, perhaps this article isn't entirely transparent about which side of the bottled water debate we're on. Our suggestion is to purchase a REFILLABLE bottle that you like, and fill it up with our excellent, top quality TAP drinking water! You'll find that this is just as portable as bottled water, but it sure costs a whole lot less! If you do this, give yourself a congratulatory pat on the back, too...for not contributing to the massive landfill problem. We thank you...and our planet thanks you. 💧

WHY DO LEAVES CHANGE COLOR?

Before we answer that question, let's take a closer look at what leaves 'do'. Did you know that they are nature's food factories? They play an important role in 'feeding' plants and trees. The process is called **photosynthesis** -- which means "putting together with light." Photosynthesis is essential to all living things that need oxygen to survive! Here's basically how that works.

Plants and trees take **water** from the ground up through their roots. They also capture a gas -- **carbon dioxide**, that is exhaled by humans -- from the air. With the help of the sun, plants turn these two ingredients into oxygen and glucose; we use the oxygen to breathe and the plants use the **glucose** (a kind of sugar) for food and energy to grow. In fact, in the summer, the plants generate more glucose than they need, and store some for the coming months.

During the summer months, the leaves are green...thanks to a chemical called **chlorophyll**. As autumn arrives, the days get shorter and the nights get cooler. These changes 'tell' the trees that it is time to get ready for winter...when there isn't enough light or water for photosynthesis to occur.

When trees and plants stop making "food" as the temperature goes down, the chlorophyll goes away and the plants live off the energy/fuel they stored during hot weather. When the green disappears, the yellow and red and orange colors that have been there all along can be seen. In many

kinds of trees, the food -- or glucose -- gets trapped in the leaves when photosynthesis stops. The autumn sunlight and chilly evenings use the glucose to change the leaves into their bright colors.

In our area, leaves change color later than in other parts of the country -- the Eastern United States, for example. That is because of the climate there, and the wide variety of deciduous trees (those that lose their leaves). The brightest colors occur when there is little rain in late summer, and autumn brings bright sunny days with nights in the 40's. If the fall is cloudy and warm, the colors in the leaves are less colorful. ♠



WIND, WATER AND WINNING THE WEST

by Hugh Wynn, for the new **TEXAS WATER -- Origins and Destinations** curriculum
developed for Science and Social Studies classes in grades 3-6

Simple in construction, but ungainly in appearance...the early Texas windmill was an ingenious contraption -- designed to use the forces of nature to accomplish its vital purpose -- quenching the thirst of an arid region's population. The windmill used the earth as its firm foundation...the wind currents as its inexhaustible, though erratic energy source...and the aquifers as the fount and storage of its supply. Windmills performed a kind of 'old west' alchemy -- transforming nature's abundant wind into potable water!

Before windmills were sprinkled across the vast Texas plains by resourceful ranchers and innovative railroad entrepreneurs -- those scorched regions were fit for habitation only by Mother Nature's feathered, furry and scaly creatures that flitted, roamed and slithered their way across the bleak terrain with but one objective in mind...survival.

The settlement of Texas was -- to some degree -- motivated by an inherent quest for land and new opportunities, and fueled by the advancements in steam locomotion. It was the entrepreneurial spirit of immigrants and railroad barons alike that drove pioneers ever westward seeking new markets...new cities...new villages and rural farming communities... and new beginnings.

What began as a trickle, this wave of people first settled land nourished by life-sustaining water in its **natural** locations...alongside creeks, bayous, rivers, ponds and lakes. As more and more settlers ventured into the Texas plains...they were forced to seek innovative solutions to gain access to water. The rancher needed ways to water his herds...and the railroads water for as their thirsty steam locomotives as they pushed west.

Without the windmill, vast regions of Texas would remain largely unsettled to this day. This simple device made all the difference, and -- significantly -- is on the verge of playing a huge role in an emerging new area of national concern.

Today, the windmill appears destined to perform an important and simple new role...the conversion of wind -- not to **water** this time -- but to **energy**. 💧



Photos by Ken Fraser

WHAT DO YOU KNOW ABOUT WATER-SAVING “BUGS”

It's likely that you've read or heard that “*when you add **compost** to the soil in your yard – regardless of whether your soil's sand or clay — you'll SAVE WATER.*” Maybe you've even heard that you'll save between 30 to 50% of the water you normally put on your yard... which can make up as much as 50% of your summer water bill.

How do you know if these claims are accurate? Have you ever tried composting for yourself? What will it cost you to try compost on your landscaped areas? What *magic ingredient* does compost have that saves water in your landscape?

There are a gazillion compost products on the market these days. Big chain stores carry packaged compost, “organic” products are readily available, and you can even make your own in your backyard. (Composting leaves from one mature tree is equal to \$50.00 of purchased compost/mulch.) Are there significant differences among these products as far as water savings are concerned? Yes, there are...but some “generic” compost may be better than no compost at all. Do your homework on what's available locally. There are some reputable compost suppliers in the area who sell products containing good, fresh ‘ingredients’ that can work wonders on your planted areas. You might think twice, on the other hand, about purchasing a bag of dry, sterilized, plastic-packaged-with-no-air products that may sit on a store's shelf for an indeterminate amount of time.



Compost is made up of organisms, and different ratios of carbon to nitrogen ‘products’. The products are usually materials that are being discarded by nature...or by you. When nature discards them, they fall to the earth, like leaves and twigs, and naturally decompose. Unless you have a compost system, when you discard them (e.g., fruit and vegetable peelings, egg shells, even coffee grounds), they all too often end up in plastic bags in the landfill....but that's another story!

Organisms are the heroes -- the real stars -- the living ingredients that you must have in your soil to hold water. So, *bacteria, fungus, protozoa, nematodes* (the good ones) to name just a few, are what you need in your soil to **save water**. These little guys live in the spaces between soil particles and are – themselves — made up mostly of water. On the average, for example, it's estimated that bacteria are 97% water, fungus are 54% water, and protozoa are 39% water. When these microorganisms are healthy and happy (e.g., *have enough water and haven't been killed by sterilization or chemicals*) they digest carbon products and use nitrogen to create enzymes that get busy breaking down matter. You may never have actively thought about it, but that is exactly what compost is all about – *de-composed* matter.

Protecting these microscopic critters and adding them to your soil as part of good compost is what substantiates the 30-50% WATER SAVINGS



mentioned earlier. With time and some careful attention to choosing — or creating — the right compost for your application, you will indeed be able to **save water**! As your soil becomes more rich and fertile, plant roots will grow and become more healthy and happy. Using compost also reduces the amount of fertilizer and pesticides needed to produce healthy plants, and it is cheaper than artificial soils.

Still skeptical about the “saving-water” claims? Here’s an experiment for you to try. Apply compost to a clearly delineated section of your landscaped area. Follow product directions as to the amount to apply and whether or not to mix it into the soil. (Some experts suggest that a depth of 4 inches should be sufficient.) Take some photos – of the composted area and another similar section that you do NOT add compost to – at the time you start the comparison. Make sure the sections receive the same amount of watering. After a week or so – or after several days when it hasn’t rained, or when no water has been applied – check the soil in the two areas. We bet that you’ll find the composted soil still moist to the touch, on top and under the surface...while the non-composted area is likely to be dry in both places. Keep a ‘photo journal’ of the sections for comparison as time goes by. You’ll see for yourself that the composted area makes better use of the water...and therefore, needs less of it to thrive.



With leaves beginning to fall, consider starting a compost area in your backyard. It isn’t hard to do – in fact, here’s a web link that will give you some much more in-depth information about composting as well as some simple containers that you can construct yourself. Not handy with tools? The local home improvement stores and online gardening ‘shops’ have some great ‘store-bought’ composting options – ranging from simple to complex. Visit www.stopthedrop.org/compost/index.html and get started before the leaves and pine needles really begin to accumulate!

by Carol Fraser, Water Conservation Specialist, Gardener & Educator



Moms....don’t let your babies grow up to be Texas Water Hogs!

According to the experts, while the population of Texas is expected to double by 2050, we will only be able to meet 70 percent of our water demands at that time. Today’s youngsters will be the adults and homeowners of tomorrow who will have to make intelligent choices about preserving -- and extending -- our precious water supplies.

It is up to us to make sure that they understand the importance of developing good, water-wise habits today so that they will be prepared for their responsibilities in the future. Involve your children in doing a household water ‘audit’ to discover how much water you use each month...then take some deliberate conserving actions and measure your success with the next month’s water bill.

What a great way to demonstrate that the water we conserve today can serve us tomorrow.



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The Rising Cost of Water... Conservation Can Help

For almost a decade, the cost of water has been steadily rising as the North Harris County Regional Water Authority has been constructing an entirely new infrastructure to deliver surface water beginning in January 2010. The phased conversion was mandated by the Harris-Galveston Subsidence District in 2000 to curb subsidence and to allow the aquifers to recharge by reducing our dependence on groundwater.

Right after the first of the year, we will experience a significant increase in the groundwater pumpage fees charged to the District, and passed through to our customers. We have been anticipating this increase and have budgeted accordingly. Still, we know that no one likes to pay higher prices and we are taking aggressive measures to ensure that our water supply systems operate as efficiently as possible.

Over the past several years, the District has been providing information on water conservation. We have included tips for using water more efficiently in our newsletters, through our website, and in our billing statements.

Now that the cost of water will be increasing again, water conservation measures can help hold down your water bills. We cannot 'save' our way out of tight water supply situations, but if we can slow the rate of increase in demand, we can postpone the construction of costly new facilities down the road. It is important to stress that using finite water supplies more efficiently today means that, while we may not have all the water we *want* in the future...we will have the water we *need*.

The Texas Water Development Board estimates that by 2050 the demand for water will nearly double. The population will certainly continue to increase, but there are no additional sources of water -- it is not a commodity that can be manufactured. Conservation, however, can help stretch available supplies, so please incorporate conservation strategies at home and for your yard and landscaped areas. That will help you save both water and money. 💧



3 Top Water Savers...

1. Find and Fix Leaks -- Probably the single greatest water waster is a leaking toilet! A leak of one gallon every six minutes (not an unusual amount) totals 10 gallons an hour, or 240 gallons a day. This is almost equal to the average amount of water consumed each day in a single family home!

2. Take Shorter Showers -- If every individual in this area showered for one minute less per day, for example, the water saved would be in excess of 125 million gallons in a single year! Installing water-saving shower heads or flow restrictors can save another 500 to 800 gallons per month.

3. Water your lawn only when it needs it. Step on your grass. If it springs back when you lift your foot, it doesn't need water. After October, turn OFF your automatic sprinkler system -- your lawn doesn't need it during the dormant phase. Not overwatering your yard can save 750-1,500 gallons per month.

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

You enjoyed your beautiful Christmas tree... Now let Mother Nature have it back !

When evergreen trees are chipped and shredded, they make wonderful, NATURAL resources, such as mulch, that help conserve water on landscaped areas, help to prevent soil erosion... and provide a habitat for beneficial garden 'critters.'

Please visit our website -- www.wcid132.com -- and complete the brief sign-up form (you'll find the link on the home page). Then strip all the ornaments, garland, tinsel, etc. from the tree (no artificial trees!) and bring it to the water plant at 4107 Evening Trail, between December 26th and January 10, 2010. Leave it on the grassy area outside the water plant (at the dead-end -- there will be a sign).

Thank you for your participation in the **WCID 132 Christmas Tree Recycling program**. Be sure to print a copy of your online registration form -- it is your confirmation to receive a young, native, easy-to-care-for tree suitable for planting in your yard in the spring. We'll notify you by e-mail when you can claim your **FREE tree** and include instructions for its planting and care.

If you have any questions, please use the *Contact Us* area on the website, and let us know how to reach you to respond.

(If you do not use the internet, please add your name, address and contact information to the back of this flyer, take it with you to the water plant, and put it in the box on the door when you deliver your tree.)