



TOWN HALL MEETING SCHEDULE

General Session

Tuesday, May 28, 2002

7:30 p.m.

Champion Forest Baptist
Church

Student Ministries Building
15555 Stuebner Airline at
Strack Road

District 2

Thursday, May 30 - 7:00 p.m.

John Wesley United Methodist
Church

5830 Bermuda Dunes
(in Champions)

District 1

Tuesday, June 4 - 7:00 p.m.

Lakewood Forest Club House
15006 Lakewood Forest Dr.

District 4

Thursday, June 6 - 7:00 p.m.

Ponderosa VFD

17061 Rolling Creek

District 5

Monday, June 10 - 7:00 p.m.

Spring Baptist Church
1027 Spring Cypress

District 3

Thursday, June 13 - 7:00 p.m.

Jersey Village Civic Center
16327 Lakeview Drive

Water Authority Schedules Series of Town Hall Meetings

The North Harris County Regional Water Authority (NHCRWA) is inviting the public to attend a series of Town Hall meetings this summer to discuss our water future -- where our water will come from and what it will cost. The Authority has the responsibility to secure a long-term supply of quality, potable drinking water and to develop and implement a comprehensive Groundwater Reduction Plan (GRP) to comply with a Harris Galveston Coastal Subsidence District (HGCSA) mandate. The GRP will outline how municipal utility districts within the Authority's boundaries will convert to surface water and reduce our reliance on groundwater in a phased conversion over the next 28 years.

"There are some critical decisions being made about our future water supplies," explained NHCRWA General Manager, Ed Shackelford. "We want to make sure that area residents, business and community leaders, and those elected to provide leadership in the 158 municipal utility districts within our boundaries have the opportunity to hear the details of our conversion strategies first-hand. We also invite their comments, concerns and ideas before this GRP must be submitted to the Subsidence District for their review and approval by January 1, 2003."

There is a specific timetable imposed by the HGCSA for the reduction of groundwater usage to occur in the service area of the NHCRWA: 30 percent reduction in 2010; reduced by 70 percent by 2020; and by 80 percent in 2030. This is something that will affect all of us who live and work in north Harris County.

"We have enjoyed relatively inexpensive water over the years, and we have relied almost exclusively on the water from the Gulf Coast aquifers that flow below us," Shackelford said. "Monitoring by the HGCSA has revealed that subsidence is indeed occurring in the region, which experts say can be directly related to the groundwater being pumped from the aquifers."

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H2O UPDATE



Ed Shackelford, P. E.
NHCRWA General Manager

The North Harris County Regional Water Authority joins the Texas Water Foundation and Governor Rick Perry in declaring May as **Water Month in Texas**. The Governor has challenged people across the State to become better educated on the critical issues impacting the future of this vital resource. It is entirely appropriate that this observance should coincide with the intensifying of our negotiations with the City of Houston for our future water supplies.

Thanks to some new revised principles and terms for selling treated surface water introduced by the City's Director of Public Works, Jon Vanden Bosch, we are making significant progress in negotiating the details for a fair and reasonable contract.

Under the new plan, the Authority would acquire treated water from the City of Houston by paying a pro-rata share of actual costs for capacity in the raw water system, the treatment plant facilities and the transmissions lines. The City will continue to design, construct, own, operate their facilities. Capital payments for the NHCRWA's capacity can be made at the time of the reservation or deferred until the potable water is delivered by making annual inter-

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PUBLIC MEETINGS...

Continued from page 1

Shackelford said that the Authority was holding six meetings throughout the NHCRWA service area. The agendas for the sessions will be the same, but the locations have been selected to be convenient for the MUD representatives and residents in each of the five Districts. (See the schedule on page 1.) The kick-off Town Hall meeting is scheduled for May 28th, and is centrally located to permit people from throughout the Authority to attend.

"We are making a concerted effort to encourage area residents to join us for these meetings. Water is, after all, essential to life," Shackelford commented, "and an adequate future supply of quality,

potable water is essential to the sustained growth and development of our north Harris County area. We want to hear from the folks who live and work here. We need to know about their concerns and recommendations in time to incorporate them into the GRP. After all," he continued, "we will all have to live with the critical decisions that are being made right now and over the next few months."

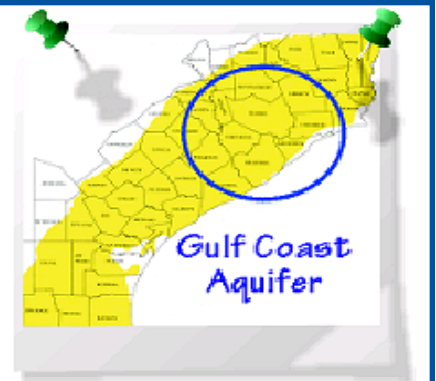
The agenda for the Town Hall meetings is limited to four topics plus Q&A:

- 1. Water Supply Contract;**
- 2. Strategy for Pricing Water;**
- 3. Integrated Water System;**
- 4. The initial GRP DRAFT.**

For additional information, visit www.nhcrwa.com or call the NHCRWA, 281-440-3924. 💧

The **Gulf Coast Aquifer** forms an irregular shaped belt along the Gulf of Mexico from Florida to Mexico. In Texas, it provides water to all or parts of 54 counties, and the greater Houston metropolitan area is the largest municipal user (1997, Water For Texas). The aquifer is made up of a combination of clays, silts, sands, and gravels that are all connected to form a large, leaky artesian aquifer system comprised of four major components. The deepest of these water producing formations is the **Catahoula**. Above that is the **Jasper Aquifer**, followed by the **Evangeline Aquifer**, and topped by the **Chicot Aquifer**.

According to the Texas Water Development Board, years of heavy pumpage in portions of the aquifer have resulted in areas of significant water level decline. Declines of 200 to 300 feet have been measured in some



areas of eastern and southeastern Harris and northern Galveston County. Although there is some continued decline in the Galveston area, conversion to surface water and a reduction in groundwater usage has slowed the rate of decline, and has actually allowed some recharge of the aquifer in at least one location.

This aquifer recharge and reduction in subsidence is the objective of the Harris Galveston Coastal Subsidence District's Regulatory Plan that mandates the conversion to surface water. 💧

Taking a Regional Approach to Our Water Issues...

In 1997, the Texas Legislature passed Senate Bill 1 which designated 16 regions to plan for the state's future water supply, and the Texas Water Development Board appointed a water planning group (WPG) in each one. These groups are made up of representatives from agriculture, service and manufacturing businesses, counties and municipalities, environmental organizations, electric generating utilities, River Authorities (government), water districts, water utilities, and the fishing industry.

The Planning Groups were charged with comparing the water needs and supplies in the region to determine if the supplies are adequate through the 50-year planning period. Their work is conducted under the supervision of the Texas Water Development Board. If shortages are identified, the Planning Group must develop water management strategies to overcome the shortages for the near-term (2030 and before) and long-term (post-2030).

Region H encompasses all or part of 15 counties in southeast Texas -- including Harris -- along with the entire San Jacinto River basin and the lower reaches of the Brazos and Trinity River basins. Two thirds of all US petrochemical production and almost a third of the nation's petroleum industries are located in Region H. The region's tourist attractions generate hundreds of millions of dollars each year. The Port of Houston is now the second busiest port in the country. In 1995, Houston employed about 22 percent of the state's total employment.

The fact that Region H is an "economic powerhouse crucial to the Texas and national econo-

mies" makes adequate water supplies into the future even more essential.

Population in Region H is expected to grow from 4.8 million in 2000 to 9.7 million in 2050. This doubling over 50 years represents an annual growth rate of slightly more than one percent. The population projections provide the basis for calculating municipal water demands.

Using these projections, Region H water demands are expected to increase from approximately 2.25 million acre-feet* per year in 2000 to over 3.18 million acre-feet per year in 2050. Municipal water demands account for about 46 percent

of the total, and manufacturing requires another 33 percent of the region's water demands. Region H has the largest projected manufacturing water use of any of the 16 planning regions in the state, and Harris County alone is projected to account for over 48 percent of that total demand.

About two-thirds of the Region H current water demand is supplied by surface water, mainly from three reservoirs: Lakes Conroe and Houston within the San Jacinto river basin, and Lake Livingston within the lower Trinity River basin. There will be an

increased demand for surface water as the groundwater reduction plans are accomplished, so the Region H Planning Group is working on various water management strategies to meet any water supply shortfall. These include supporting several proposed new reservoirs (including Allens Creek); allowing more regulatory flexibility in the event of a shortage; recommending some legislative remedies having to do with water rights and transfers; and an increased emphasis on conservation and reclaimed water usage.

For more information about this important effort, visit online: www.twdb.state.tx.us.



Region H Water Planning Group Location Map



PLANTS & WATER – Getting the Most Out of Both!

by Michael Murr



Summer seems to have arrived in Houston, even if not officially. Temperatures are soaring, and our landscapes are already wilting for water. We have fallen behind in our annual rainfall – if anyone could believe that could be possible after Allison’s soggy visit last year.

The sprinklers are already going strong and we’re watering frantically to keep from ending up with brown lawns and dead plants. But do we really need to do that? We are beginning to understand that water won’t be as plentiful as it has been in the past, so using it efficiently to sustain this most precious resource is the practical approach that we need to take.

If you’re interested in more than lip service to water conservation, there are some practical things you can do that allow you to maximize the use of both your water and your money...and it doesn’t have to be at the expense of the watering you need to do to keep plants alive and thriving.



You may have heard some of these “tips” before – many involve plain old practical horse sense. (I am often surprised at the “senseless horses” around when I see water being wasted.) More people are learning about **Xeriscaping**, which means, “quality landscaping that conserves water and protects the environment,” but the process and theory of Xeriscaping may not really be understood.

As far as I know, all living things need some water and/or nutrients, so there is no such thing as “waterless or no-maintenance” plants. It is true that Xeriscape plants require a minimum amount of water over and above the natural rainfall of any region. So, by simply using water efficiently for your outside requirements, you are already Xeriscaping. But there is more to it than that.



Planning...

If you have the opportunity to plan a new landscape, or renovate an old one, take the time to plan for water usage and conservation. Sketch a plan of your home and existing features, visit with a nursery, and read the labels on plants to learn about their water requirements.

Divide your landscape into

three water use zones: low, moderate and high. Place plants with different water requirements in areas that receive the same watering patterns, or put them in appropriate “low” or “high” spots in the yard.



Study the **shade patterns**. A shaded landscape can be as much as 20% cooler than full sun areas and require much less water than those in full or partial sun. Before you cut those pesky pine trees down, remember they are providing shade to cool the house and the landscape. What you may not realize is that the pines also provide the acid for the soil on which many plants – and especially those azaleas we love – thrive.

Pay close attention to **moisture in the soil** to determine when to water. It also pays to do your homework on the water needs of the plants that you have selected for your yard. And don’t forget about the soil itself. Our area has a lot of clay, which doesn’t absorb water well. Incorporate some organic material into the soil before you plant and mulch. And don’t forget to build up your beds. This means raising them higher than the level of your yard. This helps insure much-needed drainage for the plants, and retains the water you do use.

Also remember rocks don’t

use water but the more rocks you use, the more heat is retained in the area causing it to radiate around your plants and increase evaporation. If you are planting trees, take a look at the orientation, and think about where their shade will hit during the summer; not only for cooling the house, but shading a window, or an area of the yard that gets a lot of sun.

Lawn Irrigation...

This is probably the biggest waste of outside water use, because most people just mismanage the use of irrigation. It doesn't matter if you have the most high-tech irrigation system in the neighborhood, or if you still just drag water hoses around; **watering the landscape is the number one water-waster.**



Think about that the next time you see the driveway getting watered, or a sprinkler's over-spray filling the street gutters and trickling down the sewer drain. Also, don't water in the heat of the day or when it is windy. At those times, the water's potential efficiency is reduced to just about half, because the other half is evaporating. Watering frequency should be based on soil moisture, evaporation, and precipitation...not what you think you should set the timer for.

With an irrigation system...

1. Best time - Water early in the morning, before people start getting up to take showers, and getting ready for work. Fungus usu-

ally takes several hours of wetness on leaves to take hold, so you don't need to worry about that.



2. Change your watering habits as the seasons change. You don't need as much in the winter and fall as you do the spring and summer. Make the adjustments to your system and habits accordingly.

3. Make sure you have **water sensors** and make sure they are clean, and working properly. This can be such an easy first step in saving a lot of water. It's irritating to see an irrigation system operating when it's raining outside...and talk about waste!

4. Have **an annual check up** for your system. Call in a professional or do it yourself, but do it! Get those leaks and bad heads fixed up and operating efficiently.

5. Try to use sprinkler heads that produce **drops rather than mists**. This helps to reduce evaporation.

6. Another key factor in efficient irrigation is one that is most often forgotten: your **landscape may have changed since installation**. Increased size of plant material may now block or distort the spray pattern. You may have to modify either the plants or the irrigation system.

Hand watering with hoses...

1. Get a timer. These \$10 items are so handy and help you not to forget that sprinkler running outside when you get busy with something else.

2. Use soaker hoses where you can, and drip systems in pots.

3. Make sure valves are not leaking outside. Sometimes, just a slight tightening can stop the drip.

4. Adjust your sprinkler before you turn it on. The street, driveway and sidewalks don't need water – no one ever grew a garden in concrete!

Lawns...

Now focus on what's in your landscape. You may need to have your soil tested for nutrient content and add organic matter if needed. Good soil absorbs and retains water better.

Minimize turf areas -- you may have a brick walkway or patio you have been wanting to put in that will help reduce your outside water use. Remove thatch and aerate the turf if it is hard, so water won't run off so quickly and it will absorb it to the root zone. There are many schools of thought, but *the most sensible key to watering lawns is to apply the water infrequently, yet thoroughly*. This creates a deep, well-rooted lawn that efficiently uses water stored in the soil.



Flower Beds...

Use plants native to Texas in your landscape -- they require less care and water than ornamental varieties. (Check out the Plant List on the Native Plant Society of Texas website, www.npsot.org, for

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Plants And Water...

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a complete listing of our native plants, and consider using them as much as possible in your landscaping projects.)

Use mulch and place plants to ensure easy maintenance and efficient use of water. It is important to space plants far enough apart so that they can achieve their mature size without being crowded. Crowding not only increases your costs, but also results in long-term maintenance problems and increases unnecessary water use for the same desired affect.



Maintenance...

Use mulch around shrubs and garden plants to reduce evaporation from the soil surface and cut down on weed growth.

chitect seasoned with hands-on experience in the green field of design, development, and implementation. During his 13-years at Compaq Computer Corporation, he was extremely influential in the landscape development and implementation of Compaq's natural environment on its 300 acre Houston campus. Michael's strong commitment to the environment provided the motivation to create and manage one of the premier recycling programs in Corporate America; one that contributed to the many distinctive awards Compaq received over the years. Michael holds a Bachelor of Landscape Architecture degree from Texas Tech University with a minor in Horticultural Sciences. He also serves on the Board of Directors for Harris County MUD 18.

Michael's company, Murr Incorporated, provides consulting services in landscape restoration and preservation. "Our focus is to incorporate the act of preservation with restoring indigenous materials in the design, planning and implementation stages." ♦



Remember, mulch holds water. Raise your lawn mower cutting height -- longer grass blades help shade each other, cut down on evaporation, and inhibit weed growth.

Conservation for the long term...

Houston's climate is what makes our plant materials -- including trees -- in this area so lush, and that is what makes living in this area so desirable. Water is a limited resource in many places, but with good stewardship, we have enough quality water in the Gulf Coast region to last a long time if we use it smartly. A time is coming, however, where we will have to curb our water use and pay more for this finite resource.

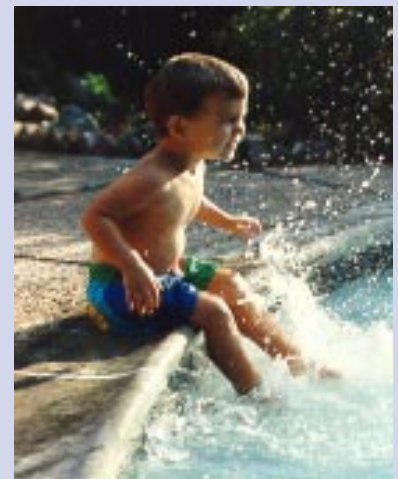
Landscape plants have an environmental impact and ecological value, including the production of the oxygen we breathe, the removal of many air-borne pollutants, as well as psychological and aesthetic benefits.

Just remember... **Plants do not save water; people do.** The water we conserve today can serve us tomorrow. ■

Michael Murr is a Landscape Ar-

Additional water-saving tips:

- ♦ Sweep or blow driveways, sidewalks and steps rather than hosing them off.
- ♦ Wash the car with water from a bucket, and hose off with a cut off sprayer rather than letting the water run.
- ♦ Avoid purchasing recreational water toys that require a constant stream of water.
- ♦ If you have a swimming pool, consider installing a new water-saving pool filter.
- ♦ Lower pool water level to reduce amount of water splashed out.



- ♦ Use a pool cover to reduce evaporation when pool is not being used
- ♦ Eliminate the weeds when and where you can. Why would you want to water those?
- ♦ Supplement your automatic watering by spot and hand watering those smaller areas that aren't "thirsty."
- ♦ Don't install or use ornamental water features unless they recycle the water and do not operate during dry periods.
- ♦ Follow your subdivision's watering ordinances, and respect the days when you are asked to refrain from watering.

H2O UPDATE

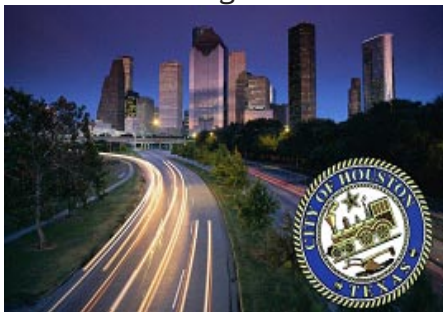
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est payments. The terms allow the NHCRWA to pay for only the volume of potable water needed to meet the 2010 groundwater reduction requirement.

Potable water volumes can be increased and paid for at a later date to meet future groundwater reduction requirements. The new terms eliminate the infamous “ordinance rate” structure and allow the Authority to reserve total water volumes required for the HGCSO conversion milestones without paying for all the water volume needed at the time of signing the contract.

Since its creation, the NHCRWA has been working toward meeting the HGCSO mandate and plans to have the first draft of the GRP delivered by mid-year 2002 to allow for review and modification in time for the January 1, 2003 deadline. Construction on the water delivery infrastructure must begin by January 2005, and as of January 2010, we are required to reduce groundwater pumpage by 30 percent. In 2020, only 30 percent of the total water demand can be provided by groundwater, and in 2030, that amount is reduced to 20 percent groundwater.

Thanks to some innovative thinking “outside the box” about a fair, cost-effective method for pricing water, the City has inched us closer to an agreement. ♦



78th State Legislature Coming up in January...

Legislators will soon be gathering in Austin in preparation for the 78th Texas State Legislature that convenes in January 2003, and water issues will once again be a popular topic for discussion. Several House and Senate committees already have studies under-



way that may change the landscape of future water law. The House and Senate Natural Resources Committees have assignments from the Speaker and Lieutenant Governor, respectively, that address various state water issues. The Senate Intergovernmental Relations Committee is studying special districts used for development, which could affect the laws governing municipal utility districts, WCIDs and similar districts. And, the Joint Committee on Water Resources, composed of Senate and House members, is studying the broad principles governing state water law and may recommend changes there, too. The Authority will be monitoring these issues, working closely with legislators who represent the area within our boundaries: Sen. Jon Lindsay, State Rep. Peggy Hamric, and freshmen Representatives Debbie Riddle (filling the late Paul Hilbert’s seat) and Corbin van Arsdale, who was elected to the newly created House District 130. ♦ Steve Bresnen, NHCRWA Legislative Representative

Kid’s Water Conservation Project...



When Mom or Dad turns on the sprinkler to water the grass, do you know how to figure out how much water the sprinkler “delivers”? The next time the lawn needs watering, place some empty cans or jars in several places around the lawn. Turn on the sprinkler and let it run for half an hour. Add the total amount of water captured in all the receptacles (in inches), and then divide by the number of jars to get the average. Simply multiply by two if you want to know how much water is “sprinkled” in an hour. In the Houston area, experts recommend watering every five days to apply .75 to 1 inch of water (subtracting any rainfall) during summer months. This amount will wet the soil to a depth of 4-6 inches.



Backflow Prevention Devices Help Safeguard the Water Supply

When water flows backwards through the water supply system, it is called *backsiphonage* or *backflow*. When that water is accidentally mixed with hazardous chemicals or bacteria, it can be dangerous...even fatal!

The danger could come from improperly installed pools and sprinkler systems. Homeowners are required to have their water district inspect a new pool or sprinkler system to help prevent this problem.



Another potential danger to the water system comes from a surprising source. Did you know that a common garden hose could contaminate the water supply if it is connected to a harmful substance and the pressure in the water main line drops while your hose is submerged in polluted or contami-

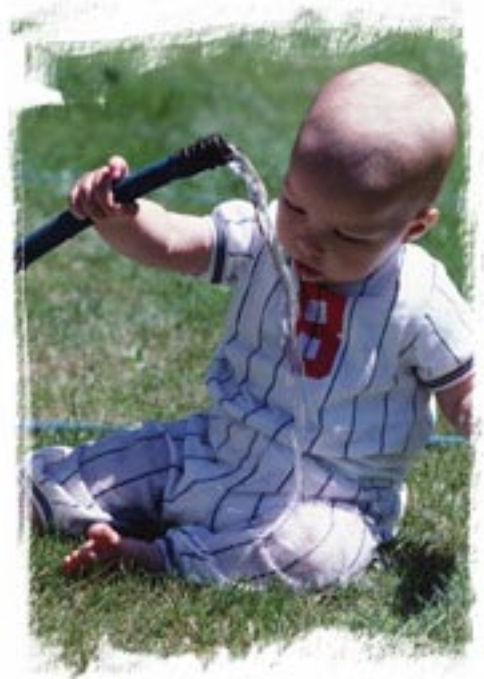
nated water? The water (and whatever is in it) could be sucked back into your pipes and your drinking water supply.



Water pressure drops can happen when firefighters battle a nearby blaze or when repairs are made due to a broken water line. This contamination could come from the chemicals used to fertilize and kill weeds on your lawn. The cleansers used in your kitchen and bathroom could be hazardous if swallowed, as could bacteria in the water from your pool or waterbed.

Fortunately, keeping your water safe from these contaminants is not that difficult to do. Take the following precautions to protect your drinking water:

- ◆ Buy and install inexpensive backflow prevention devices for all



threaded faucets around your home. They are usually available at hardware stores and home improvement centers.

- ◆ If you install a pool or sprinkler system, have a representative from your water district inspect the device for proper installation.
- ◆ Never submerge hoses in buckets, pools, tubs or sinks.
- ◆ Always keep the end of the hose clear of possible contaminants.
- ◆ Do not use spray attachments without a backflow prevention device. The chemicals used on your lawn are toxic and can be fatal if ingested. ■



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NHCRWA Board of Directors

	Term Ends
Lenox Sigler, President	2006
Jim Pulliam, Vice President	2004
Ron Graham, Secretary	2006
Al Rendl, Asst. Sec.	2006
Kelly Fessler, Treasurer	2004

Ed Shackelford, General Manager



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Use water wisely...

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