SECURING WATER FOR THE FUTURE

On June 18, 1999, the bill that created the North Harris County Regional Water Authority (HB 2965) was signed into law, and called a special election for January 15, 2000 so voters could elect Directors to lead the new Authority.

Following the election, the NHCRWA became the single entity empowered to negotiate for a secure, long-term, reliable, quality supply of wholesale drinking water for all the independent neighborhoods, municipal utility districts, small municipalities, and permitted well owners within its boundaries.

These boundaries are essentially US 290 on the west, the Harris County line on the north (Spring Creek), FM 1960 and Bammel-North Houston on the south and the western shores of Lake Houston on the east. The Authority is comprised of 335 square miles and includes approximately 400,000 residents.

The NHCRWA's primary assignment is to develop and implement a strategy for complying with the Harris Galveston Coastal Subsidence District's 1999 Regulatory Plan that requires a reduction in groundwater usage to no more than 20 percent of total water demand by the year 2030. Since the Authority is not a taxing entity, funding for our future water supply and the infrastructure through which to deliver it will be accomplished through the sale of revenue bonds, and paid for by groundwater pumpage fees.

Within several months after its creation, the NHCRWA Board hired Ed Shackelford, former Harris County Pct. 4 Engineer, as General Manager, and retained the services of experienced consulting, financial, legal and engineering firms to assist in developing the critical Groundwater Reduction Plan, or GRP as it soon came to be called.

"We have taken our water wells for granted over the years, so few people understand just how difficult it will be to reduce our reliance on groundwater," Ed Shackelford said. "We have a lot of critical decisions and long-range planning ahead to convert to an increasingly larger percentage of surface water within a very specific time frame (30% by 2010, 70% by 2020, and 80% by 2030). People should also understand that there are some costly penalties if we don't meet the mandated schedule."

"The Authority has made a firm commitment to our direct customers — the Municipal Utility Districts and individual well owners — and to their customers — the residents and businesses within our boundaries, to secure a long-term supply of quality, drinking water at the lowest possible, responsible cost. Simply stated," the General Manager said, "this means that we will consider all possible water supply options and then be relentless in negotiating the most beneficial long-term agreements and contracts."

The relationships that residents currently have with their utility districts will remain the same for water supply, operation, and maintenance of their neighborhood water and sewer systems. The Authority will become the "wholesaler" by acquiring the alternate source of water and delivering it to the various MUD systems. To fund the future water supply, a groundwater pumpage fee (currently $0.25 per 1000 gallons) has been assessed and is paid quarterly by the MUDs within the Authority. In the future, when the new water must be purchased and an infrastructure constructed to deliver it, the price per thousand gallons will increase.

The major water supplier in this region, the City of Houston, controls or has access to water rights in the Trinity River, Lake Houston, Lake Conroe and Lake Livingston. The Authority continues to negotiate with the City to purchase a long-term supply of either "raw" or treated water. NHCRWA is also actively investigating the possibility of purchasing water from the Brazos River Authority. (The Brazos flows only 11 or 12 miles from the northwest corner of the Authority.) Other sources have been investigated, but they either did not have sufficient water to meet our needs, or were not considered to be cost effective.

The fundamental underlying principles on which the Authority is basing all these decisions include the security of the water supply; the lowest possible present and future costs; fairness to all our customers and equitable rates – no matter the water source; and open and candid public communication about our actions and decisions.

Area residents are encouraged to follow our progress by attending our Board meetings (second Tuesday of each month) and by visiting the Authority's web site -- www.nhcrwa.com.

Groundwater Primer -- The ABCs of WATER

Around the world, water is becoming a hot news topic and, unfortunately, a major area of contention between countries and even among some of our United States. There has also been significant concern about drought throughout the Southwest and in other parts of the world.

Closer to home, in Harris and Galveston Counties, the Subsidence District has issued groundwater reduction mandates that impact some municipal water districts in the area. This mandate to reduce reliance on groundwater has prompted the **North Harris County Regional Water Authority** to initiate a search for alternate or surface resources that may offer a long-term supply of quality drinking water for the years ahead.

In preparation for more widespread discussion of water issues by the local media and by our local Water District officials, here is a glossary of water terms to keep for handy reference.

Water Glossary...

Aquifer: An underground geological formation able to store and yield water.

Collection site: A stream, lake, reservoir, or other body of water fed by water drained from a watershed.

Condensation: The process in the hydrologic cycle by which a vapor becomes a liquid; the opposite of evaporation.

Confined Aquifer (also known as artesian or pressure aquifers): an underground geological formation where the groundwater is bound between layers of impermeable substances like clay or dense rock. When tapped by a well, water in confined aquifers is forced up, sometimes above the soil surface. This is how a flowing artesian well is formed.

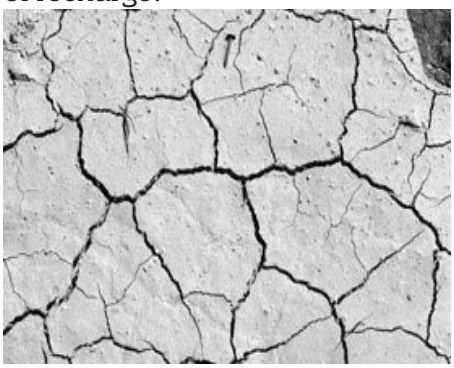
Conservation: The use of water-saving methods to reduce the amount of water needed for homes, lawns, farming, and industry, and thus increasing water supplies for optimum long-term economic and social benefits.

Consumptive use: The use of a resource that reduces the supply without returning an equal amount. Examples include the intake of water by plants, humans, and animals and the incorporation of water into the products of industrial or food processing.

Contaminant: Any substance that, when added to water (or another substance), makes it impure and unfit for consumption or use.

Depletion: The loss of water from surface water reservoirs or groundwater aquifers at a rate greater than that of recharge.

Discharge: An outflow of water from a stream, pipe, groundwater aquifer, or watershed; the opposite of recharge.



Drought: An extended period with little or no precipitation; often affects crop production and availability of water supplies.

Erosion: The wearing down or washing away of the soil and land surface by the action of water, wind, or ice.

Evaporation: The conversion of a liquid (water) into a vapor (a gaseous state), usually through the application of heat energy during the hydrologic cycle; the opposite of condensation.

Fresh water: Water with less than 0.5 parts per thousand dissolved salts.

Groundwater: Water found in the spaces between soil particles and cracks in rocks underground (located in the saturation zone). Groundwater is a natural resource that is used for drinking, recreation, industry, and growing crops.

Hydrologic cycle (also known as the water cycle): The paths water takes through its various states (vapor, liquid, solid) as it moves throughout the ocean,atmosphere, groundwater, streams, etc.

Impermeable layer: A layer of material (clay) in an aquifer through which water does not pass.

Municipal water system: A network of pipes, pumps, and storage and treatment facilities designed to deliver potable water to homes, schools, businesses, and other users in a city or town and to remove and treat waste materials.

Point source pollution: Pollutants discharged from any identifiable point, including pipes, ditches, channels, sewers, tunnels, and containers of various types.

Pollution: An alteration in the character or quality of the environment, or any of its components, that renders it less suited for certain uses. The alteration of the physical, chemical, or biological properties of water by the introduction of any substance that renders the water harmful to use.

Precipitation: The part of the hydrologic cycle when water falls, in a liquid or solid state, from the atmosphere to Earth (rain, snow, sleet).

Recharge: Groundwater supplies are replenished, or recharged, when water enters the saturation zone by actions like rain or snow melt.

Runoff: Precipitation that flows over land to surface streams, rivers, and lakes.

Soil: The top layer of the Earth's surface, containing unconsolidated rock and mineral particles mixed with organic material.

Storm drain: Constructed opening in a road system through which runoff from the road surface flows into an underground system.

Surface water: Water above the surface of the land, including lakes, rivers, streams, ponds, floodwater, and runoff.

Subsidence: the lowering in elevation of the surface of land by the withdrawal of groundwater.

Wastewater: Water that contains unwanted materials from homes, businesses, and industries; a mixture of water and dissolved or suspended substances.

Wastewater treatment: Any of the mechanical or chemical processes used to modify the quality of wastewater in order to make it more compatible or acceptable to humans and the environment.

Water (H2O): An odorless, tasteless, colorless liquid made up of a combination of hydrogen and oxygen; a major constituent of all living matter.

Water quality: The chemical, physical, and biological characteristics of water with respect to its suitability for a particular use.

Water quality standard: Recommended or enforceable maximum contaminant levels of chemicals or materials (such as chlorobenzene, nitrate, iron, arsenic) in water.

Watershed: The land area from which surface runoff drains into a stream, channel, lake, reservoir, or other body of water; also called a drainage basin.

Water table: The top of an unconfined aquifer; indicates the level below which soil and rock are saturated with water.

Water treatment plants: Facilities that treat water to remove contaminants so that it can be safely used.

Wetlands: Lands where water saturation is the dominant factor in determining the nature of soil development and the types of plant and animal communities. Other common names for wetlands are sloughs, ponds, and marshes.

Xeriscaping: An environmentally friendly form of landscaping that uses a variety of indigenous and drought-tolerant plants, shrubs, and ground cover.

(Source: The Groundwater Foundation.)

Water Conservation Saves A Natural Resource and Money

According to the Texas Water Development Board (TWDB), we may waste as much as half of the water we use around the house during the summer months when 50 to 80 percent of our water consumption is used outside. Using this valuable resource more efficiently can save both water and money.

How do you use water for lawn and garden? When, and for how long do you water the lawn? Does the sprinkler hit the driveway, sidewalks or street? Does your sprinkler system turn off automatically when it rains? Do you wait for the plants or grass to look wilted before watering, or do you water on a regular basis?

We have always taken our water resources for granted, but with the Harris-Galveston Coastal Subsidence District mandate to reduce our dependency on groundwater, people are more interested in using our water supplies more efficiently to control costs, too.

Here are some simple tips to help you put a realistic, cost-effective water efficiency plan into effect outside your home.

Use native plants and shrubs whenever possible in landscaping your yard. They generally require watering less frequently, and are often low-maintenance, too. The Texas Department of Agriculture County Extension Service points out that different varieties of grasses, plants and soils require different amounts of water.

In Houston, for example, St. Augustine grass has a high "thirst" requirement. Experts suggest that **grass should be watered separately from flower beds** and landscaped areas. When original landscape planning is an option, "zone" plants according to their water requirements.

Use the kind of **watering equipment to suit your "target."** Use sprinklers – ones that broadcast large drops are best – for the lawn areas, and soaker hoses or drip irrigation systems for trees, shrubs and flower beds.

Know when to water. Look for signs of stress – limp or curled, dull green blades of grass, or footprints left behind after walking across the lawn. In Houston, watering every five days -- to deliver 3/4 to 1 inch of water (subtracting any rainfall) during summer months will wet the soil to a depth of 4-6 inches.

Water during early morning or evening hours when evaporation losses will be less than during the heat of the day. Avoid watering in high winds that might send the droplets to places they are not needed, like

streets or driveways.

Don't cut the grass too short. Longer blades will help reduce evaporation and shade the soil.

Use a good mulch layer in flower beds and landscape areas. This helps to hold down weed growth that can siphon off water from your plants, and helps retain the moisture in the soil. "Zoning" plants according to their water requirements in your landscape plan can also help you water more efficiently.

Finally, **use drip or trickle irrigation** – the slow, frequent application of small amounts of water to the soil area directly surrounding the plant roots – to take care of gardens and landscaped areas. *Drip irrigation can save up to 60 percent of water delivered by other systems*.

By using our water supplies efficiently, we can hold down our water bills, which can minimize the long-term impact on our pocketbooks as this valuable resource becomes more costly in the years ahead.

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STOP THE DROP!
Use water wisely...