

Volume 33, Number 42

January 27, 2012

Dear Client:

Water. Electricity. Drought. Three major concerns for the Austin area and the state of Texas for now and in the future. Each needs to be factored when considering solutions involving the other. It's complicated and it's important.

Drought restricts the amount of available water, and a reduced amount of water impacts the generation of electricity. Sure, the drought's impact has been lessened somewhat following recent rains and snowfall in certain areas of the state. In fact, only about 67% of Texas is in "extreme" or "exceptional" (the two most serious designations) drought, compared to about 88% just four months ago.

Remember: Central Texas and much of Texas stumbled through the **worst one-year drought in Texas history**. With the normally-dry summer months just over the horizon, the **drought conditions could continue to be severe**, though some forecasters indicate normal weather conditions could prevail later this year.

How does the drought affect the generation of electricity? **Power plants that provide electricity for Austin — such as the coal-fired plant just downstream from Austin and the nuclear-powered plant near the Gulf Coast — suck massive amounts of water from the Colorado River and the Highland Lakes to generate electricity.**

The plants use the water for cooling purposes and much of it is returned to the environment. **But they need to keep a lot of water on-hand at all times.** In fact, one expert estimates that nearly 40% of water taken from rivers and lakes is used by power plants. With *limited* water, electrical brownouts could occur.

The Lower Colorado River Authority that controls the water usage and flow said last week that it is planning to **add about 100,000 acre-feet of water storage within the next five years**. To give you an idea of how much water this is, Lakes Travis and Buchanan, at very low levels, are currently holding about 738,000 acre-feet. Or put it another way, **the new water supply would be about one-tenth of Lake Travis' maximum storage capacity.**

Let's examine other possible sources of water in the next item – **reclaimed wastewater from toilets and showers (yuck!) and salt water**. Both are being used in Texas right now.

As demands for water in the Austin area and around the state grow, what about using brackish groundwater, salty sea water, even water that has been flushed down your toilet? Well, it's possible because these water sources are already being used or will come online this year in Texas.

Texas' and Austin's population growth are among the highest in the nation. Businesses and institutions are expanding as a result of the population growth. **The demand for water is increasing as the supply is shrinking** and droughts have always been a part of life in the Lone Star State. What to do? Or, better yet, **what is being done other than traditional methods?**

According to a *Houston Chronicle* report, Texas has more than 2.7 billion acre-feet of **brackish groundwater**, enough to meet current demands for more than 176 years. And, of course, the **Gulf of Mexico has an endless supply of salt water**. Then there is all the **reclaimed water discharged from showers and toilets** from every city in Texas. What's the old phrase – water, water everywhere and not a drop to drink!

Not true in certain places in Texas. Forty-four desalination plants – most of them small and scattered across the Rio Grande Valley and West Texas – **are already treating brackish groundwater**. There's a big one in El Paso, capable of producing 27.5 million gallons of water a day.

The state's first permanent seawater desalination plant is scheduled to open on South Padre Island in 2014. And the City of Midland, that already uses **treated wastewater** to irrigate the grounds of Midland College, will **add it to its drinking water supply later this year**.

Think about the yuck factor of using treated wastewater in the city's drinking supply! This is the water that runs down the drain as you brush your teeth, wash dishes and clothes, shower and, yes, flush your toilet. It'll be a Texas first when Midland takes this step.

In a true understatement, the Midland mayor was quoted as saying **"it takes a little bit of getting used to**. But other places, they're doing it. It's a psychological thing more than anything else." Yeah, right. California and a few other states already add treated wastewater to water its customers drink. And NASA installed **a urine-to-water recovery system on the International Space Station in 2009**.

Okay, what are the realistic prospects for using these non-traditional sources? First of all, the **cost is a huge barrier for implementation**. The *Chronicle* reports that the cost of desalination is up to four times that of other water treatments, sometimes even more for seawater desalination. However, cost isn't the only factor. Before building a plant, operators must **address environmental concerns, including how to dispose of the salty concentrate the process produces**. And the availability of water impacts directly the cost and reliability of electricity. Some ideas may seem far-fetched, but they underscore the need to seek solutions.

The unbelievably enormous wildfires that bracketed the city of Austin to the west and east are still fresh in the memory of the more than a million people who live in the Austin metro. The question looms: what if similar wildfire situations broke out *closer* to the more populated areas of the metro?

Even with the outbreak of storms in the area this week, **the forecast still calls for drought, and tinder-dry conditions to exist through the summer.** The rainfall was beneficial (the damage was not), but it was mostly to the east of IH35 and the rain that did fall west of IH35 was not enough to cause the water-supply lakes to rise a substantial amount. If a lengthy period passes before more rain, the benefit derived from this week's rainfall will be greatly diminished.

Which brings us to the subject of wildfires. Wildfires are a real threat to the heavily-wooded and, importantly, heavily-populated Austin metro. This is a significant element to remember: **the transmission of fire does not have to have direct contact.** In other words, **if the fire temperature is hot enough, it will trigger ignition of flames in nearby areas that are not necessarily touched by the flames.**

This is especially true for highly-combustible materials, such as the pervasive cedar trees in and around local populated areas that contain an oil that is very quick to ignite. All you have to know to understand the danger is this: wildfires in recent years that destroyed hundreds of homes in California were in a similar situation. Many of the most damaging blazes were fueled by the eucalyptus plants that contain an oil akin to the oil in Central Texas juniper/cedar trees.

There's more. If last year's fires in the pine-forests of nearby Bastrop to the east and in the cedar brakes in western Travis County weren't enough to raise the level of concern, **the rugged, hilly terrain in many parts *inside the Austin and adjacent city limits* poses another similarity to California.** Those areas inside these city limits are covered with homes. Homes on cedar-covered hills.

Take West Lake Hills as an example. Or Rollingwood. Or the many areas on Austin's northwest side. First of all, **the terrain makes it very difficult to contain fires should they occur in those areas.** Secondly, **fires create their own "weather systems" that can increase the wind velocity around them.** In California, fires that started low on a hillside raced with frightening wind-driven speed up the sides of hills, engulfing homes that were built on hillsides and hilltops to take advantage of the views.

This is not meant to be alarmist, just realistic. Homes that abut wild spaces are very desirable which is why so many are being built in these locations. **Officials with the Austin Fire Department are right now studying changes to fire codes that relate to buildable property.** They can't come too soon. Especially if area drought conditions continue for some time.

What is the population of the Austin metro? Not just the city, the 5-county metropolitan area. And how does that compare to other big Texas metros?

The latest computer analysis this month by a private entity, “On Numbers”, places **the population of the metro area composed of Travis, Williamson, Hays, Bastrop and Caldwell counties at 1.8 million**. This ranks Austin as the 34th most populous metro area in the nation.

The metro area with the largest population in Texas is the Dallas-Fort Worth metro. **A January estimate of 6.6 million people places D-FW 4th largest in the nation. The Houston metro is not far behind, at 6.2 million, and is in 5th place on the list of the nation’s most populous metros. San Antonio holds down the 24th spot with 2.2 million residents.**

Number one and number two? No surprise. The New York City metro ranks #1 with an estimated population of almost 19 million and Los Angeles comes in at #2.

While on the subject of rankings, **Beverly Kerr**, the VP/Research with the Austin Chamber of Commerce, analyzed the latest release of preliminary payroll jobs numbers by the Texas Workforce Commission and the US Bureau of Labor Statistics. Ranking the best performing top 50 metro areas, here’s what she reported:

Among Texas metros **Houston does best with year-over-year job growth of 3.0%, to rank #4** in the US. **Austin’s growth percentage was 2.1% in the 12 months ending in December, to rank #11**. Fort Worth and Dallas fall behind Austin with 1.5% and 1.7% respectively. San Antonio grew by 0.3%.

The Austin metro area added 16,100 jobs during 2011.

Dr. Louis Overholster points out dolphins are so smart that, within a few weeks of captivity, they can train people to stand on the very edge of a pool and throw them fish!

Sincerely



Editor/Publisher