

WATERLINES

NORTH HARRIS COUNTY REGIONAL WATER AUTHORITY

Winter 2021



CAPERS RIDGE PUMP STATION



Trinity River Intake



NEWPP Solids Building



CRPS 2200HP Motor



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The North Harris County Regional Water Authority (NHCRWA) was created by the 76th Texas Legislature and was confirmed by a public vote in January 2000. The primary mission of the NHCRWA was to secure adequate surface water and develop a system to facilitate the transition to surface water in compliance with the Harris-Galveston Subsidence District's mandated groundwater reduction timeframe.



WATER 101 THE BIG PICTURE

The cost of water is going up, not just in Texas, but all over the U.S. Today, each glass of water, shower, or flush costs much more than five years ago. We continue to take it for granted that when we turn on the faucet, the water will be there...but we're surprised when the cost keeps going up. What is driving these increases?

For one thing, cities are grappling with aging infrastructure that's costly to repair. Drinking water is delivered through more than 1 million miles of waterlines across the U.S. – much of which was constructed in the early- to mid-20th century, with an expected lifespan of 75 to 120 years.

In our case – for greater Houston and Harris County – price increases over the past decade have been related to the impact of the Harris Galveston Subsidence District (HGSD) regulation of groundwater withdrawals, the mandated shift to an alternate water source, and the need to construct an entirely new infrastructure to deliver that water to our neighborhoods.

We met our first Subsidence District conversion mandate of 30 percent surface water by January 2010 and are working on expanding the infrastructure to comply with the mandated 60 percent by 2025. To accomplish this daunting challenge, we have adopted a regional approach, joining with other water entities. The partners include the North, West and Central Regional Water Authorities, the City of Houston, and the North Fort Bend Water Authority -- each paying their fair share of the enormous construction projects.

So where will our water come from in the future, and what will it cost to obtain it? The good news is that the projects are well underway! They include:

- The Luce Bayou Interbasin Transfer Project
- Expanding the Northeast Water Purification Plant (NEWPP)
- Constructing massive water transmission lines
- Installing nearly 75 to 80 miles of new distribution lines as well as a new pump station and storage facility to connect another 60 to 65 utility districts (MUDs) to the surface water distribution system

In addition to the large scale projects that will need to be funded over the next few years, we will continue to pay the everyday costs of operating the current system. The costs include the water we purchase from the City of Houston (31 million gallons a day), as well as our own Operations and Maintenance costs for the infrastructure we already have in the ground. 💧

WATER FOR OUR FUTURE



LAKE HOUSTON INTAKE PUMP STATION

Luce Bayou Interbasin Transfer Project



CAPERS RIDGE PUMP STATION

The cost of the Luce Bayou Interbasin Transfer Project (\$361 million dollars) is being shared by the five water agency partners on a pro-rata basis. The NHCRWA share is ~\$165 million. Luce Bayou will have the capacity to move up to 450 million gallons of water per day to Lake Houston. Absent the Luce Bayou project, there would simply not be enough water to meet our future needs.

This project is progressing on or ahead of schedule. The Capers Ridge Pump Station is 95 percent complete and the dual 96 inch pipe segments are 99 percent complete. Substantial completion of this critical project is expected in March 2021.

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TRINITY RIVER INTAKE



Water For Future Continued...

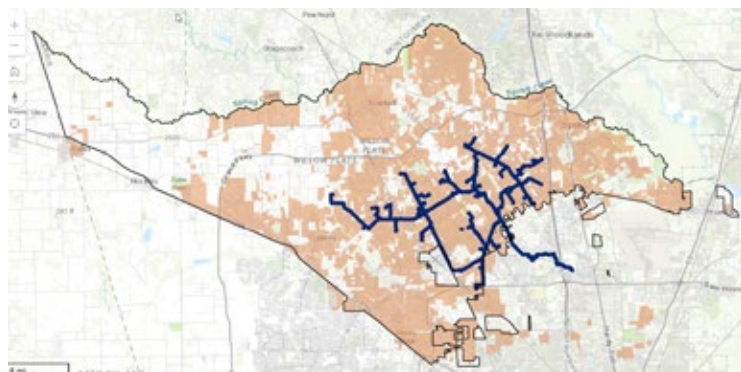
Expansion of the Northeast Water Purification Plant

After increasing the availability of more raw water into Lake Houston, the next major project is to expand the capacity of the Northeast Water Purification Plant (NEWPP) from its current 80 MGD capacity to nearly 400 MGD. A pumping station platform several hundred yards out in Lake Houston will pump up to 400 million gallons of water per day through dual 84" pipes over a mile to the treatment plant. Once there, the water will go through several phases to begin the purification process which will turn it into potable water.

This is a \$1.73 Billion dollar project, the cost of which once again will be shared by the 5 regional partners on a pro-rata basis. The North Authority's share of this project will be ~ \$602 million. The NEWPP will have used 10 million man hours when completed.

With this new investment, we will increase our surface water capacity from the current 31 MGD to nearly 160 MGD -- providing enough surface water to complete the 2035 conversion mandate of 80 percent with enough water to meet the supply needs for further generations and more population expansion. Water may be available from the project as early as September/October 2022 to January 2023.

NHCRWA Transmission Lines



The Transmission Line Project will cost ~\$445 million, and will be shared by the City of Houston, the Central Authority and the NHCRWA (~\$250 million). The transmission line will be constructed along the Beltway 8 corridor from NEWPP at Lake Houston to approximately Beltway 8 and I-45. From this take point, pipelines of various sizes will move the water along a right-of-way between the utility towers along the north side of Beltway 8 to our new pump station, located just north of Beltway 8 and west of US 249.

From there, an additional 60 to 70 miles of various sized pipe will be constructed to distribute the water to an additional 60 to 70 utility districts. These facilities — all within the Authority boundaries — will cost NHCRWA ~ \$635 million.

The total NHCRWA share of these costs is a staggering, grand total of ~\$1.691 Billion... bringing the Authority's total investment in surface water projects to just over \$2 Billion.

Investing in our future

The total "regional investment" will be over \$7 to \$8 Billion dollars. This inventory of massive water projects reveals why the cost of water will continue to increase in the foreseeable future.

Twenty years ago, when the Authority was created by the Texas Legislature, the emphasis to begin these massive projects was land subsidence. Today,

however, with our aquifers rapidly declining and the amount of water in the aging MUD wells decreasing, our most pressing reason for converting to surface water is to ensure that we will have an adequate supply of potable drinking water -- not only for now but into the future. Without adequate water, the entire region -- Harris, Ft Bend and Montgomery Counties -- would not be able to sustain economic growth and we are all sharing the cost. Without that growth, the value of our homes would decrease and the lifestyle we have worked so hard to create would be in jeopardy.

(For additional information about the progress of major water construction projects and "cost of water" topics, visit www.nhcrwa.com) 💧



CAPERS RIDGE PUMP STATION ON THE TRINITY RIVER

What is the NHCRWA Fee on my water bill, and why does it change each month?

While not all water bills look exactly the same, most of the information they contain is similar. On some part of the bill, there will be a breakdown of costs incurred during the last billing cycle -- broken down into charges for "Water", "Sewer", and the "Regional Water Authority".

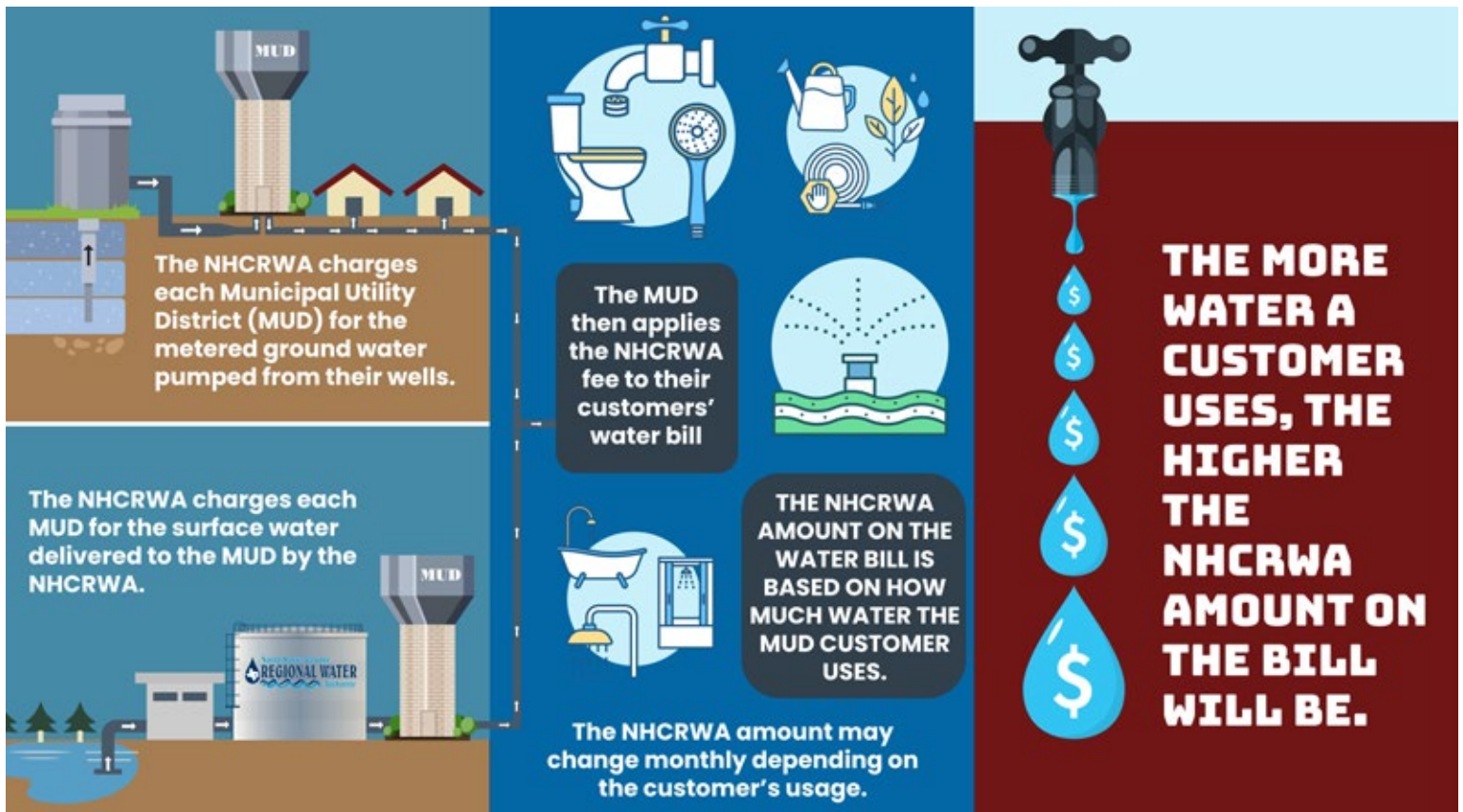
The Water and Authority items are based on the amount of water used (measured in thousand gallon increments). Here's how it works.

- The NHCRWA charges each MUD for the (metered) groundwater they pump from their well(s) and the surface water delivered to them by the Authority.
- The NHCRWA does not bill any individual home owner/customer for the water they use; that is the responsibility of the MUD.

CURRENT READ	TOTAL USAGE	THIS MONTH DIST AVG
175	10,000 Gallons	7,020 Gallons

ACCOUNT SUMMARY	
Description	Amount
Previous Balance	\$121.65
Payment Received	(\$121.65)
Beginning Balance	\$0.00
Current Billing	
Water Charges	\$26.52
Sewer Charges	\$26.00
No. Harris Co Reg Wtr Authority	\$47.30
Total Current Billing Charges	\$99.82
Due date applies to current charges only.	TOTAL DUE BY 02/19/20 \$99.82
	TOTAL DUE AFTER 02/19/20 \$109.80

- Based on meter readings, the District in turn applies the RWA fee to their customers' bills based on how much water they use, so the amount may change monthly. (Current RWA rate times gallons used = RWA amount on the bill.) Bottom line, the more water a customer uses, the higher the total RWA amount will be.
- Do the math. If the RWA amount is higher than the "formula", contact your MUD to request an explanation of the surcharge. 💧



READY FOR A COLD WINTER?

This may be Houston, but we're long overdue for a chilly winter season. Since this doesn't happen every year, it is easy to forget that more than our plants and pets need some special care when the thermometer dips into the freezing zone.

During prolonged cold snaps, with more than 36 hours of temperatures below 32 degrees, water pipes that pass through outside walls without adequate insulation may begin to freeze. This causes one of the nastiest of household calamities - broken pipes through which water escapes to cause amazing damage. Drips can spring up where you didn't even know there were pipes -- like over the hot water heater or along the bathroom wall.

Here are some common sense things you can do to minimize the risk of pipe damage...

1. Insulate your house. Reduce air leaks to keep heat in and cold out. Caulk or weatherstrip doors and windows. Pay special attention to outside walls where pipes are likely to be located -- near kitchens, bathrooms and laundry rooms -- and add insulation if possible.
2. When temperatures drop below freezing, leave cupboard doors under kitchen and bathroom sinks open to keep the pipes warm.
3. Plan to be away during the winter months? Ask a neighbor or family member to make a special house check if the temperatures take a nose dive. If you have taken care of winterizing basics, these spot checks will make sure nothing has gone wrong to cause a water leak to occur.
4. Keep pipes from freezing. Wrap the pipes in

insulation made especially for water pipes, or in layers of old newspaper, overlapping the ends and tying them around the pipes. Cover the newspapers with plastic to keep out moisture. Do this for any pipes you can access that are near outside walls, mostly under sinks. Wrap the outside faucets and all exposed pipes, as well.

5. Check the manufacturer's instructions for winterizing advice for above ground hot tubs or spas. Fortunately, cold spells don't usually stay around long enough to threaten inground pools, although it is a good idea to check your owner's manual for winterizing tips... just in case.
6. If you have an irrigation system, turn off the water to the sprinklers at the main valve. Set the automatic irrigation controller to the "rain" setting, and turn on each of the valves to release pressure in the pipes. It is usually not necessary to drain all of the water out of any irrigation components because in temperate climates like Houston, the ground doesn't usually freeze at that depth. The above ground equipment does need to be protected, however. Self sticking foam insulating tape or tubes work well. Sprinkler system suppliers may offer additional advice or supplies to help your weatherizing process. Do make sure that the main shutoff valve for the system is "freeze proof."
7. Let the faucets drip a little when extremely cold temperatures linger and there is imminent danger of pipes freezing. Wasting a little water may help prevent costly freeze damage, but don't allow the water to drip any longer than absolutely necessary. Know where the valve for shutting off the water coming into your home is located. As a last resort, you may have to shut off this main valve and drain all the pipes to keep them from freezing and bursting. If the pipes freeze despite all your efforts to prevent it, open faucets wide to allow for expansion of the frozen water.

When the pipes thaw, listen carefully for the sound of water running when the faucet is turned off. This could indicate a broken water line, and this should be reported to your water district at once. Depending on where the break is located, it may your responsibility to repair -- and the sooner the better! 💧



DON'T BE AN ACCIDENTAL POLLUTER!

What is stormwater pollution and will you help stop it?



Stormwater runoff is water from rain that does not soak into the ground. It flows from rooftops, over paved areas, bare soil, and sloped lawns. As it flows, stormwater runoff collects and transports animal waste, trash, litter, pesticides, fertilizers, oil & grease, soil and other potential pollutants into the storm drains.

Rain washes pollutants from impervious surfaces (e.g., sidewalks, driveways, streets, parking lots) construction sites, shopping and commercial centers, and residential yards into storm sewers or ditches, and then flows untreated into nearby creeks, fish and wildlife habitats, downstream recreational areas, and drinking water supplies. Nutrients such as phosphorus and nitrogen can cause algae to grow which depletes oxygen in waterways. Toxic substances from motor vehicles, as well as the



careless application of pesticides and fertilizers also threaten water quality and can kill fish and other aquatic life. Bacteria from pet and animal wastes get washed into lakes and waterways making them unsafe for water sports like wading, swimming, water skiing and fishing.

A sanitary sewer system and a storm sewer system are not the same. Water that goes down toilets, sinks, showers, or other inside drain flows to a wastewater treatment plant. **Storm sewer flows are not treated**, so it's important to remember that any type of surface water runoff -- not just rainfall -- will be collected in the stormwater management system. When you wash your car on the driveway, for example, all that water, road oils, dirt and grime ends up in the storm drain.💧



PUT GREASE IN ITS PLACE!

When Fats, Oil and Grease (F.O.G.) go down the drain, they clog pipes, cause foul odors, and can cause sewer back ups. F.O.G. comes from cooking meat, shortening, butter, food scraps, sauces, and dairy products and can build up over time in pipes.

WIPE IT!



SCRAPE IT!



TRASH IT!



WATER LESS
SAVE MORE
savewatertexas.org