



2024 ANNUAL GROUNDWATER REPORT

ABOUT THE REPORT

The District collects annual data on groundwater and alternative water supply use from permittees to understand how much water is being used, how it is being used, and to gain perspective on converting groundwater to surface water. GPS stations are also used to collect data on changes in the land surface to track subsidence. The collected data are analyzed and made publicly available as the District's Annual Groundwater Report (AGR).

The information contained within the AGR is the result of a multi-agency effort that leverages the resources of the Harris-Galveston and Fort Bend Subsidence Districts, the City of Houston, the U.S. Geological Survey, the University of Houston, the Brazoria County Groundwater Conservation District, and the Lone Star Groundwater Conservation District.

The AGR includes information on the following:

- Precipitation data from weather stations throughout the Houston area
- Groundwater withdrawals and total water demand
- Groundwater levels in the Gulf Coast Aquifer System
- Aquifer compaction measurements and subsidence data

This will be the report's 49th volume, providing groundwater and subsidence information for the 2024 calendar year, and is intended to exceed the requirements of section 8801.117 of the District's enabling legislation.

This document serves as a summary of the 2024 AGR findings. To access the full report, scan the QR code below.

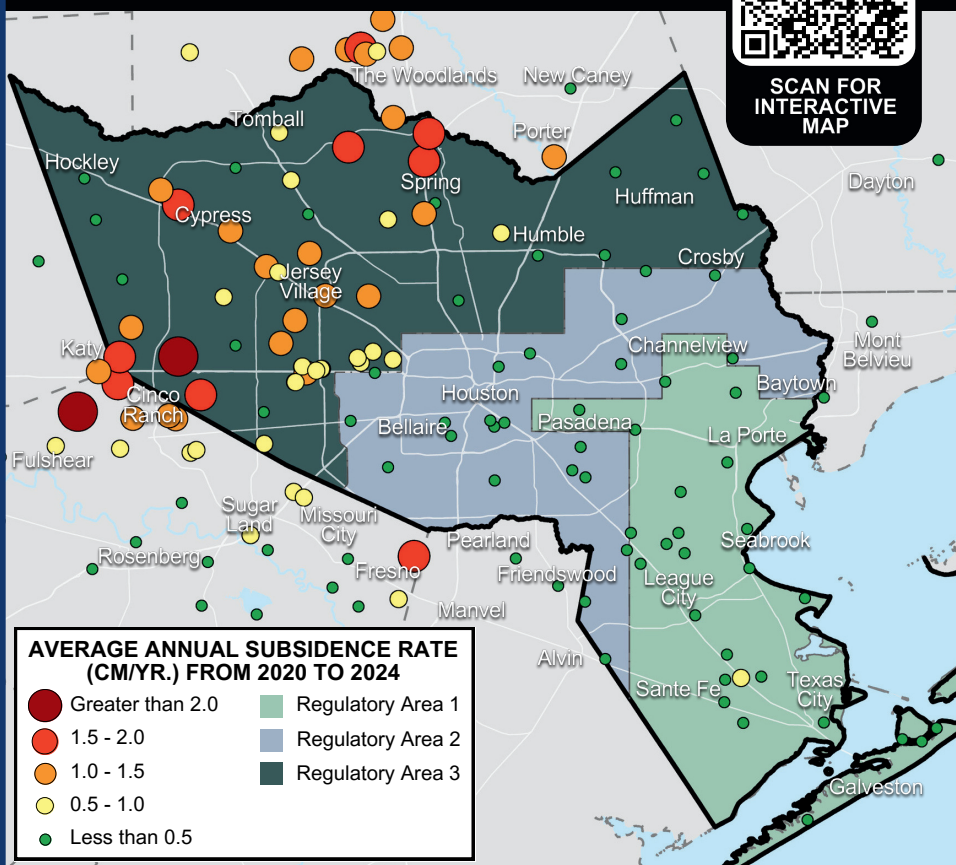


SCAN ME

SUBSIDENCE RATES



SCAN FOR INTERACTIVE MAP



5-Year Average Annual Subsidence Rate

The map above shows the recent change in land surface deformation using data collected from active global positioning system (GPS) stations from 2020 to 2024. Regulatory Areas 1 and 2 have been fully converted since 2002, utilizing alternative water sources to supply most of their water demands and showing little subsidence or even uplift in some areas. The highest subsidence rates occurred in Regulatory Area 3, where alternative water supply projects are underway to reduce reliance on groundwater and meet the conversion requirement designated in HGSD's Regulatory Plan. Scan the QR code above for an interactive subsidence map.

2024 WATER USE SUMMARY

The District's Regulatory Plan requires permittees to convert to alternative water supplies to reduce their reliance on groundwater and prevent subsidence. Since 1976, water users have been working to change their water source from groundwater to alternative water. Our region's primary alternative water supply is surface water sourced from the Brazos River Basin, the San Jacinto River Basin, and the Trinity River Basin. The overall groundwater use within the District in 2024 was 237.64 million gallons per day (MGD), a 8% decrease in pumpage from 2023. The three primary water uses in the District are public supply, industrial, and irrigation. Public supply groundwater use remains the largest single-use category at 208.6 MGD and accounts for 88% of the groundwater used in the District.

Water Source		MGD used in 2023	MGD used in 2024	1-Year Change
Alternative Water Supplies	Brazos River Basin	79.31	7.27	-1%
	San Jacinto River Basin	184.35	180.73	-2%
	Trinity River Basin	550.44	591.40	+7%
	Reclaimed Water	5.02	5.45	+9%
	Alternative Subtotal	819.12	855.85	+4%
Groundwater		259.05	237.64	-8%
Total Water Use		1078.2	1093.5	+1.4%

Active Alternative Water Supply Projects

To meet conversion requirements and reduce reliance on groundwater, local entities are collaborating to plan, design, finance, and construct projects that develop alternative water supplies and distribution infrastructure.

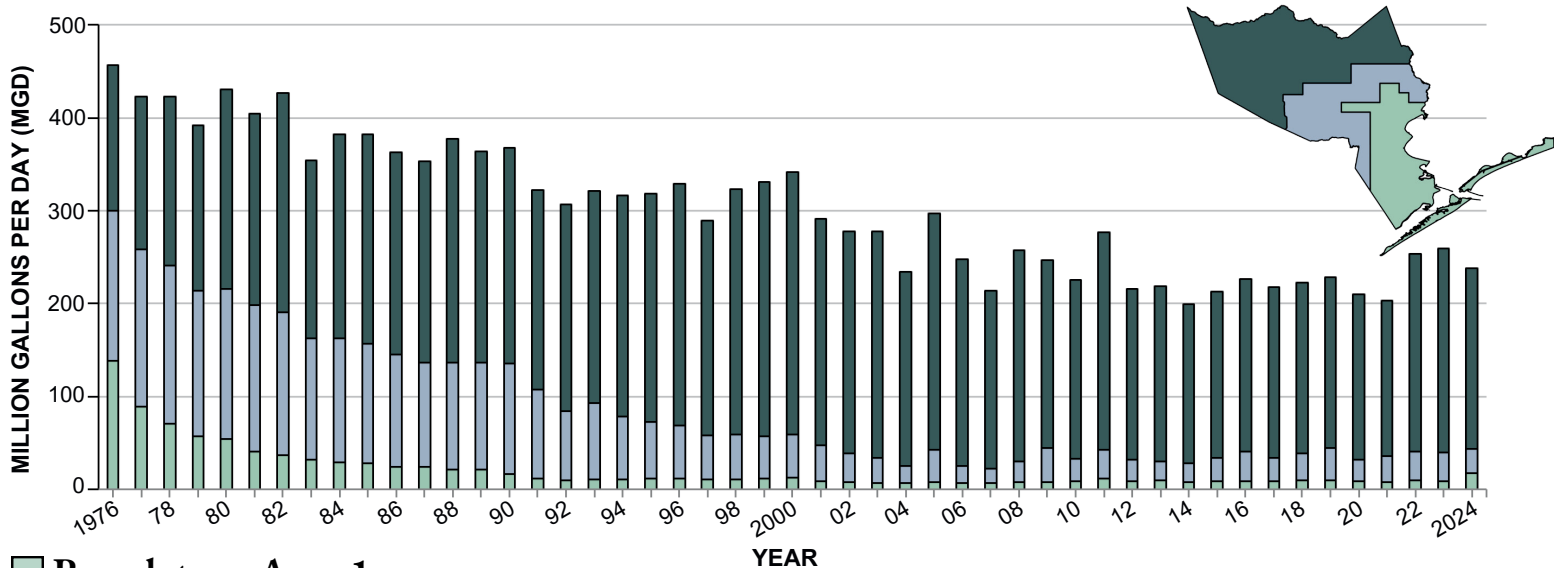
Currently, there are three active alternative water supply projects:

- Northeast Water Purification Plant Expansion
- Surface Water Supply Project
- Northeast Transmission Line



Scan the QR code to view a map of the projects.

TOTAL GROUNDWATER WITHDRAWAL BY REGULATORY AREA



Regulatory Area 1

Regulatory Area 1 (RA1) covers most of Galveston County and the southeastern portion of Harris County. This area began conversion to alternate water sources in the 1970s and is now considered “fully converted” as it uses alternative water to supply the majority of its total water demand. In 2024, total groundwater withdrawal in RA1 was 17.1 MGD, a 94% increase from the previous year. 83% of groundwater use in RA1 is from industrial use. Overall groundwater withdrawals in this area have declined from 138.1 MGD in 1976 to 17.1 MGD in 2024, a 88% reduction.

Regulatory Area 2

Regulatory Area 2 (RA2) encompasses a small northwestern portion of Galveston County and the southern and eastern parts of Harris County. It has been converted to alternate water sources since 2002, where possible. In 2024, total groundwater withdrawal in RA2 was 25.9 MGD, a 17% decrease from the previous year. Public supply remains the dominant use, accounting for 85% of RA2's groundwater use.

Regulatory Area 3

Regulatory Area 3 (RA3) covers northern and western Harris County. Entities in this regulatory area were required to convert to alternate water beginning in 2010 and have two subsequent conversion deadlines in 2025 and 2035 for permittees with groundwater reduction plans. In 2024, total groundwater withdrawal in RA3 was 194.7 MGD, an 11% decrease from the previous year. Like RA2, the largest category of water use is public supply, which accounted for 95% of the groundwater use in the area. This decline could be attributed to a combination of increased availability to alternative water supply as significant projects became operational in 2024 as well as the increased rainfall measured in this region when compared to the exceptional droughts in 2022 and 2023.