



HOUSTON

H₂Know Your City's Water Facts

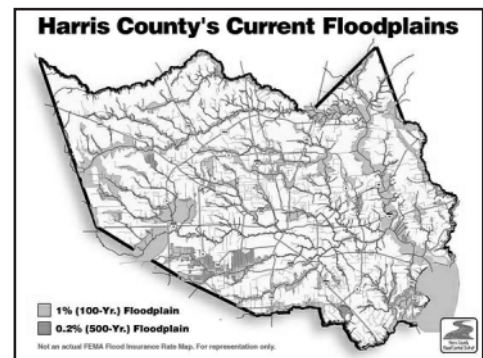
Houston's drinking water

The City of Houston's Department of Public Works and Engineering (PWE) provides drinking water to more than 2.5 million people every day. In 2003, PWE delivered an average of 377 million gallons per day.

- * Seventy percent of Houston's drinking water is surface water coming from the Trinity and San Jacinto Rivers through Lakes Conroe, Houston and Livingston.
- * Thirty percent comes from the Evangeline and Chicot Aquifers through 202 permitted wells at 92 ground water pumping stations.

Houston is reducing its dependence on ground water to control subsidence. The State of Texas wants cities to shift to using 20% or less ground water by the year 2030; Houston plans to meet that requirement long before that date.

Water conservation is a critical element of Houston's long-range water supply plans.



www.hcfdc.org/ME_hccf.html

Houston's storm drainage

Houston receives about 50 inches of rainfall per year.

- * September is Houston's rainiest month, with an average of 4.9 inches.
- * The least rain falls in March, with an average of 2.7 inches.

The Houston area can experience intense thunderstorms with heavy local rainfall, and hurricanes with extended periods of rain over a wide area.

About half of Houston's 6,000 miles of streets have curbs and gutters that drain to buried pipes. Streets without curbs and gutters are drained through roadside ditches.

Storm pipes and ditches drain into streams and bayous managed and maintained by the Harris County Flood Control District (HCFCDD).

About half of Houston's storm water drains through the Buffalo and White Oak Bayous into the Houston Ship Channel at Allen's Landing.

A localized one-hour downpour can exceed the capacity of buried pipes or ditches and cause local flooding. Many Houston streets are designed to carry away the excess water.

Extended hurricane rains can exceed the capacity of the bayous and cause more general flooding.

Houston's wastewater treatment

PWE's sanitary wastewater system collects and treats a daily average of 250 million gallons of sewage from more than 2 million people.

NET IN THE CITY CONNECTIONS

"Design Away Floods" - design a community to reduce the risk of flooding

"A Recipe for Clean Water" - test the effectiveness of environmentally friendly alternatives to hazardous household chemicals

"From Source to City" - discover how different cities meet the challenge of getting water from its source to the tap

"Every Drop Counts" - identify and implement water conservation habits

"Price Is Right" - analyze the costs for building a water development project

"Sparkling Water" - develop strategies to clean wastewater

"Water Meter" - construct a water meter and keep track of personal water use

"Water Work Shuffle" - sequence water-related careers involved in transporting water to and from the home

1836

Allen brothers advertise Houston, promoting shipping access through Buffalo Bayou. The bayou, however, is often clogged with debris and difficult to navigate.

1860s

Private shipping companies begin dredging Buffalo Bayou. By 1876, there is a twelve-foot channel to Clinton.

1879

Water distribution system was developed by the Water Works Company, a private company started by a group of men from New York.

1881

US Government takes over operation of Buffalo Bayou and develops a ship channel through Galveston Bay to Harrisburg.

1886

First artesian well drilled, providing good quality ground water.

1902

Houston opens its first sewage disposal system. It is touted as being one of the best in the nation.

1906

City purchased the Water Works Company and set up the Water Department.

1914

The Houston Ship Channel is opened, making Houston a deep-water port.

1960s

Groundwater withdrawals cause subsidence (sinking land). Between 1943 and 1973, subsidence in the Pasadena area exceeds two meters. Houston turns to surface water in the San Jacinto and Trinity Rivers to supply its drinking water needs.

HOUSTON'S WATER HISTORY

Houston-

area sewage

receives high levels of

treatment to remove solids, called

sludge, from wastewater. The cleaned water is disinfected and discharged into local bayous and other waterways.

More than half of Houston's sludge is recycled into dried Class A fertilizer called "Hou-Actinite" and is sold in area nurseries. The rest is applied as a liquid fertilizer on non-food vegetation.

During wet weather, storm water inflows into the sanitary sewers can increase the volume of wastewater by a factor of five. When flows exceed peak capacities of the treatment system, wastewater is disinfected before discharge to protect local water bodies.

Citizens' Responsibilities

Water conservation is important in Houston. Every gallon saved is a gallon that does not need to be pumped, treated, stored, and delivered. Conservation will be a centerpiece of Houston's water future in times of drought and in times of ample rainfall.

Residents can help keep waterways clean by picking up after pets and properly disposing of chemical wastes, such as used motor oil. Waste dumped into storm drains or left on the ground is washed into the region's surface waters with each rain.

Web Resources

For more information about Houston's water production, wastewater operations and utility maintenance, visit the City of Houston Public Works and Engineering Department Public Utilities Division web site at www.publicworks.cityofhouston.gov/utilities/index.htm.

For more information about the City of Houston's water-related public education and outreach offerings, visit the City of Houston Public Works and Engineering Department Water Conservation Section web site at www.publicworks.cityofhouston.gov/utilities/conservation/index.htm.

For more information about Harris County watersheds, floodplains and drainage management, visit the Harris County Flood Control District web site at www.hcfdc.org/index2.html.

For more information about City of Houston and Harris County Stormwater Quality Public Education Program, visit www.cleanwaterclearchoice.org.

Other Useful Links

American Water Works Association

www.awwa.org

Environmental Protection Agency

www.epa.gov

Texas Alliance of Groundwater Districts

www.texasgroundwater.org

Texas Commission on Environmental Quality

www.tnrcc.state.tx.us

Texas Natural Resource Information System

www.tnr.is.state.tx.us

Texas Water Conservation Association

www.twca.org

Texas Water Development Board

www.twdb.state.tx.us

US Geological Survey

www.usgs.gov

Water Environment Federation

www.wef.org

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Schools, visit the programs' web sites at www.wetcity.org or email us at info@wetcity.org.

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Council for Environmental Education ♦ 5555 Morningside Drive, Suite 212 ♦ Houston, Texas 77005 ♦ (713) 520-1936 ♦ Fax: (713) 520-8008

