

**Buffalo and White Oak Bayous
A Brief Review of Bayou Development and
Flood Damage Reduction Measures, 1828 to 1991**

**Harris County Flood Control District
January 2009**

In 1828, Stephen F. Austin promised prospective Texas colonists that “the intercourse by water along the coast is easy and safe” and the “rivers and harbors are abundantly sufficient for all the purposes of commerce.” Settlers lured by such claims often found themselves swimming or wading to the Texas shore. The flat, monotonous coastline from the Sabine River to the Rio Grande confused sailors in good weather and stranded them on sandbars in storms. The shallow bays and rivers provided poor harbors, and their entrances from the Gulf of Mexico were blocked by sandbars passable only at high tide. On a single day in 1834, three ships bound for Corpus Christi were wrecked trying to negotiate Aransas Pass. In 1822, Austin’s own schooner, the *Lively*, got lost taking a group of settlers from New Orleans to Texas and wound up running aground and foundering on the east side of Galveston Island.

The west side of Galveston Island boasted the only natural anchorage deep enough for most seagoing vessels, but trade goods that landed there still required shipment across the bay to the mainland. The challenge of crossing Red Fish Bar, a reef of oyster shells cutting Galveston Bay in half, followed by the challenge of crossing Clopper’s Bar, a sandbar blocking the mouth of the San Jacinto River, could be just as daunting as an ocean voyage. Contrary to Austin’s claims, navigating the Texas coast was difficult and dangerous. This geographic and economic handicap established the commercial importance of Buffalo Bayou well before the founding of Houston in 1836.

A major tributary of the San Jacinto River, Buffalo Bayou was an exciting discovery for travelers leaving the shallows of Galveston Bay. Edward Clopper, a young merchant who arrived with his father and brothers from Cincinnati in 1827, was delighted with this “beautifully meandering river, from sixty to a hundred yards wide and deep enough for schooner or Steam Boat navigation.” The bayou narrowed upstream but remained navigable from the San Jacinto River all the way to the town of Harrisburg. Located near the confluence of Brays and Buffalo Bayous, about 14 miles west of the San Jacinto River, Harrisburg was a town with six log houses and a steam sawmill surrounded by rich stands of timber when the Cloppers arrived. Four years later a visitor on horseback traveling along the Brazos River found twenty houses in Harrisburg and noted three sailing vessels waiting in the bayou for loads of lumber.

Brazos River plantations played a key role in the development of commerce on Buffalo Bayou. By 1831, schooners from Harrisburg were carrying loads of cotton as well as lumber, and the cotton came from the rich Brazos farmlands. Juan Almonte's 1835 *Statistical Report* for the Mexican government reported 5,000 bales of cotton (400–500 pounds per bale) worth \$225,000 exported from the Department of the Brazos in 1832. This growing trade demanded ready access to New Orleans and other markets. Given the risks associated with floating cotton down the shallow Brazos River, most planters preferred taking their crops across the prairie by oxcart and shipping them from Harrisburg. Buffalo Bayou, one of the few Texas rivers flowing west to east, pointed straight at the heart of the Brazos cotton belt and offered reliable access to all-seasons shipping for vessels drawing under six feet of water. In 1836, Augustus C. and John K. Allen shortened the trip for the Brazos farmers when they founded the “town of Houston” upstream from Harrisburg at the junction of Buffalo and White Oak Bayous.

The Allen brothers claimed that their property placed Houston “15 miles from the Brazos River, 30 miles from San Felipe, and 15 miles by water and 8 or 10 miles by land above Harrisburg.” Their bold advertisement in newspapers throughout the United States, first published just five days after buying the land, claimed six-foot-deep water all the way to the “head of navigation” on Buffalo Bayou. Steamboats, the Allens boasted, could run from Houston to Galveston in “8 or 10 hours.” And after giving the nod to Galveston harbor for being “the only one in which vessels drawing a great draft can navigate,” the promoters offered a stunning prophecy concerning Buffalo Bayou:

As the country shall improve, railroads will come in use, and will be extended from this point to the Brazos, and up the same, and also from this up to the head water of San Jacinto, embracing that rich country, and in a few years, the whole trade of the upper Brazos will make its way into Galveston Bay through this channel.

By no means a “channel” in 1836, Buffalo Bayou west of Harrisburg was a tree-lined, crooked stream that no steamboat and few boats of any kind ever had traveled. Filled with snags and covered with overhanging tree limbs, the river twisted like a jungle trail to the wilderness “city limits” of Houston. Visitors in June, two months before the Allens bought their land, found nothing in the woods but four men with a dugout canoe, a bottle of whiskey, and a surveyor's chain. Attacked by mosquitoes, the visitors jumped in the bayou and discovered that the “water was alive with alligators.” Unsuitable for a city as this location surely seemed, in

November 1836 the legislature selected Houston as the new capital of the Republic of Texas, and in January 1837, the Allen brothers brought the steamboat *Laura* up Buffalo Bayou.

The 85-foot *Laura* completed the “15 miles by water” trip from Harrisburg to Houston in three exhausting days. Her passengers included John K. Allen and Francis Lubbock, a New Orleans merchant who arrived in Texas in October 1836 and stayed on to become the governor during the Civil War. The future governor found navigating Buffalo Bayou “was good, with plenty of water and breadth” until the *Laura* reached Harrisburg, but then natural obstructions filled the river, forcing Lubbock and his companions to engineer their way to Houston:

We had to rig what were called Spanish windlasses on the shore to heave the logs and snags out of our way, the passengers all working faithfully. All hands on board would get out on the shore, and cutting down a tree would make of it a windlass by boring holes in it and placing it upon a support and throwing a bight of rope around it, secure one end to a tree in the rear and the other to the snags or fallen trees in the water. Then by means of the capstan bars we would turn the improvised capstan on land, and draw from the track of our steamer the obstructions.

Lubbock’s account of his trip on the *Laura* reflected the determined, resilient spirit of countless Texans who transformed nature to suit human purposes. The channel improvement work that Lubbock and his fellow passengers began on Buffalo Bayou progressed over time into the deepening, widening, and straightening projects that led to the opening of the Houston Ship Channel in 1914. Dredged to a depth of 45 feet by 2005 and lined with docks, refineries, and petrochemical plants, the twenty-first-century Channel offered few reminders of its pioneer origins. But the commercial-industrial character of Buffalo Bayou east of Houston was firmly established by sawmills and steamboats in the 1830s, and this character stamping extended to geography as well. When the Allen brothers brought the 150-foot *Constitution* to Houston in June 1837, the long steamboat was forced to back up almost all the way to Harrisburg before finding a bend in the bayou wide enough to turn around. Promptly named “Constitution Bend,” this location eventually became known as the “Turning Basin,” the turn-around point for ships in the Houston Ship Channel today. The navigation difficulties faced by early steamboats on the bayou were evident in a Corps of Engineers map drawn in 1871.

West of the Turning Basin, Buffalo Bayou and its principal tributary White Oak Bayou developed in concert with the business and residential growth of Houston. The Texas capital

soon moved to Austin, but the grand future predicted by the Allen brothers continued to unfold. Six months after the *Laura's* historic visit, an envious real estate promoter wrote to his partner: "Houston, it is said, now numbers 1200 inhabitants and has grown like magic. Lots now sell as high in some instances as \$10,000—\$1,000 the lowest price at which rate a block of ten was lately sold: say 10 lots in one block for \$10,000!" Commerce was booming, steamboats ran regularly to and from Galveston, and in 1842, the Port of Houston, a collection of docks along Buffalo and White Oak Bayous, was established. One year later, the *Morning Star* newspaper hailed a Houston first:

The bridge over Buffalo Bayou in this city was completed on Monday. It is 100 feet long and 16 feet wide. The distance between the two piers is 50 feet. The piers are 26 feet high, consisting of four upright posts resting on a mud sill 40 feet long, and supporting a beam 18 feet long. This bridge, though insignificant; in comparison with most of the bridges of the United States, is doubtless the longest and most substantial bridge that has ever been erected in Texas.

Destroyed by a flood in 1853, the Preston Street Bridge was replaced by the "Long Bridge," a structure built with extra length and height to guard against repeating the fate of its predecessor. In his 1912 *Standard History of Houston, Texas*, B.H. Carroll reported: "This bridge stood for years, and while it was more or less damaged by several floods, it was never swept away. After a great flood in the seventies, it was remodeled."

The 1870s, of course, produced more than one flood for Houston. After a storm in 1875, the *New York Times* described a train ride across Harris County:

What is known as the Hockley Prairie presents a perfect sea of water, and cattle were seen swimming in many places. Several times the train had to stop and stock be driven from the track, on which they sought to keep from drowning. Between 7 and 8 o'clock Friday evening the lower portion of the Houston Cypress [RR], including office, was washed away and lodged against the railroad bridge over White Oak Bayou, where the greater part of it remained.

And in April 1879, the *Times* described the worst flood Houstonians could remember, warning readers throughout the United States of the damage to the Preston Street Bridge.

The logical link between urbanization and increasingly destructive floods was demonstrated in deadly fashion by the 1900 Galveston Storm that nearly destroyed the only deepwater port

city in Texas. This hurricane also caused serious wind damage in Houston and flooded much of Harris County, ruining crops and killing livestock, but Bayou City boosters paid little heed to such losses in their eagerness to take advantage of Galveston's post-storm economic woes. In the wake of the great disaster, Congressman Thomas Henry Ball obtained federal funding and Corps of Engineers approval for dredging the Houston Ship Channel. When the 1901 gusher at Spindletop launched the Oil Era in Texas, Houston grabbed the lion's share of the petroleum refining and shipping business almost by default. In 1912, Congressman Ball celebrated his triumph with a three-page illustrated history of the Ship Channel for *National Waterways* magazine two years before the Channel opened.

By 1912, Houston's population exceeded 80,000, seventeen rail lines ran in all directions from the city, and the revamped "Long Bridge" was still standing. Expanded from its original location south of Buffalo Bayou, the Houston city limits included White Oak Bayou to the edge of Houston Heights and covered 16 square miles. Downtown boasted multi-story office buildings, streetcars ran to the suburbs, and automobiles shared the traffic lanes with mule wagons. But the streets were still muddy, and the danger of serious flooding increased every year as homes and businesses spread along the bayous.

Intersecting in the heart of Houston, Buffalo and White Oak Bayous repeatedly came out of their banks. Back-to-back floods in 1912 and 1913 demonstrated the impact that urbanization was having on flooding and related damages in Harris County, but flood damage reduction measures were considered mysterious and expensive. In the process of completing work on the new, deeper-and-wider Ship Channel, the City of Houston already was in debt, and civic leaders believed that publicizing flood problems was bad for business.

Unexpected relief from the steady urban expansion resulted from the American entry into World War I. In July 1917, the War Department established Camp Logan, an army training center, about five miles from Houston on several thousand forested acres along Buffalo Bayou. Twenty months later the war was over and all the soldiers were gone, but in 1923, a sentimental *Houston Chronicle* article recalling Camp Logan's glory days prompted a letter to the editor suggesting a "memorial park" be built on the old camp grounds. The newspaper's readers responded enthusiastically, and in the mid-1920s, with generous help from the philanthropic Hogg family, the City of Houston created the 1,503-acre Memorial Park.

The 1929 flood should have changed attitudes toward flood damage reduction efforts completely. This flood caused \$1.4 million damage, and again, the two downtown bayous dominated the headlines. All bridges over Buffalo and White Oak Bayous west and northwest of the city were under water. The Lowell Street Bridge over White Oak Bayou was destroyed. Buffalo Bayou flooded Alief with four feet of water inside homes and spread over a mile wide in some areas west of Houston. Despite such damage, the 1929 flood inspired no locally funded efforts to reduce the danger of future inundations. The disaster generated editorials and speeches but no action. Six years later, this longstanding policy of procrastination ended.

The great flood of 1935 covered two-thirds of Harris County with water in one day of rainfall. Buffalo Bayou overwhelmed an emergency sandbag levee and shut down Houston's central water plant. White Oak Bayou overflowed its banks and left residents of the Heights stranded in their homes. Texas National Guardsmen rowed rescue boats through the streets of downtown Houston. The 1935 flood lasted four days, killed seven people, partially disabled the Houston Ship Channel for eight months, and roughly doubled the property damage caused by the 1929 deluge. "We have known all along that this flood damage was coming," proclaimed the *Houston Chronicle* in a front-page editorial. And the *Houston Post* agreed: "We must not forget again, as we did in 1929." Houston business leaders and politicians, urgently spreading the blame as widely as possible, rushed to join the Chronicle's assertion that this "flood comes literally as a penalty on our own shortsightedness, our own inertia, lack of courage and lack of purpose." Fortunately for Houston, a rash of flood disasters occurred throughout the United States in the mid-1930s, creating a public outcry for federal assistance.

The Federal Flood Control Act of 1936 defined "flood control" as a legitimate function of the United States government after a decades-long struggle over the constitutionality of such work. The bill assigned oversight responsibility for flood damage reduction measures to the United States Army Corps of Engineers (USACE), and Houston Congressman Albert Thomas made sure that the Bayou City was among the first in line for help. Houston Mayor R.H. Fonville and Judge Roy M. Hofheinz headed a host of civic leaders lobbying the Texas legislature for the passage of Senate Bill Number 114 and House Bill Number 234 creating the Harris County Flood Control District (HCFCD). The most innovative part of this campaign was *Wild River*, a "pictorial petition" carrying the Harris County message to Austin. This booklet featured a cover photograph of dark, surging water above the menacing title, three introductory pages of text, and twenty pages of pictures. The text described bodies found "floating in two feet of water" and

“lying in mud,” and the pictures showed Houston with water-covered bridges and downtown streets resembling narrow lakes.

The Texas legislature established the Harris County Flood Control District in 1937 as the single agency empowered to work directly with the Corps of Engineers on projects to reduce flood damage in Houston and Harris County. The first federally funded plan for Harris County was approved by the USACE Chief of Engineers in 1940 and focused on Buffalo and White Oak Bayous. Interrupted by World War II, three elements of this plan were completed:

1. Barker Reservoir (1945)
2. Addicks Reservoir (1948)
3. Channelization of Buffalo Bayou for 6.2 miles downstream from Barker Dam. (1948)

Construction of a White Oak Reservoir featuring a dam below the confluence of Brickhouse Gully and White Oak Bayou was delayed by World War II. Residential development in the area forced cancellation of plans for the third reservoir. Other cancelled features of the 1940 plan included two major diversion canals, one leading from White Oak Bayou to the San Jacinto River and another leading from Buffalo Bayou south to Galveston Bay.

While flood damage reduction plans were being revised, Houston’s flooding problems continued, with Brays Bayou particularly hard hit in 1949 and White Oak Bayou severely over its banks in 1954. The rapid expansion of the Houston metropolitan area broadened the scope of flooding dangers throughout Harris County. Civic leaders lobbied Congress to fund new flood damage reduction plans by issuing a new version of *Wild River*, updated to include Brays Bayou problems. The authors dropped the old three-page introduction and hit the reader with five pages of disaster pictures immediately. Twenty pages of financial and military concerns followed, and then the disaster pictures began again. Unlike the 1937 edition, these *Wild River* pictures highlighted Ship Channel and industrial damages in addition to downtown and residential flooding.

The Federal Flood Control Act of 1954 authorized clearing, straightening, enlarging, and lining the channels of Buffalo, White Oak, and Brays Bayous. Channelization work on 25.4 miles of Brays was completed in 1971, and 10.7 miles of channel improvements were completed on White Oak in 1975. In response to local citizens’ opposition for environmental reasons, nearly 22 miles of authorized channel improvements on Buffalo Bayou were never completed. Led by Bayou Preservation Association founding member Terry Hershey and aided by Congressman

George H.W. Bush, these citizens objected to plans calling for the straightening and partial concrete lining of Buffalo Bayou similar to the work done on White Oak Bayou. In 1991, Buffalo Bayou Park, a 500-acre park near Barker Dam, was renamed Terry Hershey Park.