The busiest and the newest: This view looking west near Chimney Rock shows two of Houston's spoke freeways: the Southwest Freeway, Houston's busiest freeway, and the Westpark Toll Road, the newest and smallest addition to Houston's freeway system. (Photo: November 2002)

The Spokes

In the world of the loop and radial freeway system, downtown is the center of the universe. Call it the hub. Houston's eight spokes converging on downtown are just about the limit of what a downtown freeway interchange system can handle. But as space opens away from downtown, the next tier of six spokes takes root, mostly along Loop 610. Even the Beltway gives birth to a spoke. Houston's system of spokes is one of the most extensive and well-balanced among the major cities in the United States.

In fact, Houston's freeway system does look a lot like a compass. This similarity didn't escape the freeway system's designers, who gave many of Houston's radial freeways compass-point names. The North, Northwest, Southwest, South, East, and Northeast-Crosby freeways are all key increments in Houston's freeway compass.

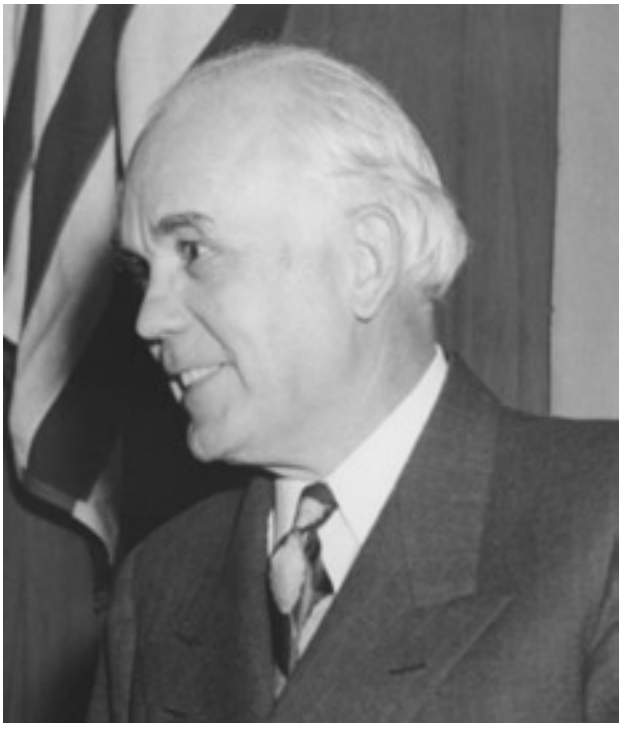
Houston's spoke freeways exhibit their own form of magnetism by being powerful attractors of development. Pervasive frontage roads along the spokes have brought commercial development right up to the edges of the freeways. The spokes are the scene of some of Houston's most fascinating freeway history, as well as some of the biggest plans for the future.

Gulf Freeway, Interstate 45 South

The Gulf Freeway launched Houston into the freeway era on September 30, 1948. As the history of the Gulf Freeway unfolded, it became a classic story of the rise of the American urban freeway and the myriad of issues that would accompany it. Intertwined in the story of the Gulf Freeway is the demise of the urban electric railway, the unprecedented demand for new freeways in the postwar era, huge suburban development, malls, traffic jams, the development of better freeways, urban protest, and the never-ending battle to catch up to demand. The newly dedicated Gulf Freeway was ahead of its time, yet it couldn't keep up with the times. It would be brought into the modern era, not just once, but twice.

While the Gulf Freeway was at the forefront of many national freeway issues, it also became the prototypical Houston freeway. From the very beginning it was a freeway with continuous frontage roads, spawning the development and commercial clutter that would become characteristic of Houston's freeways. The ongoing—some would say never-ending—improvement of the freeway would become a way of life for Houston's freeway system. Perhaps as a fitting reward for its first 50 years of struggle, in 1997 it received the most impressive instance of Houston's newest freeway trademark: the five-level stack interchange. The Gulf Freeway story, while presently in a quiet mode, is certainly not over. A wave of expansion will push southward from Beltway 8 in the future, giving the freeway its widest and most modern sections yet.

Gulf Freeway	
Previous designation	US 75
Designated as freeway	1943
First freeway section open	September 30, 1948
Freeway complete	1970 (to NASA 1) 1976 (to Galveston)
Reconstruction	1959–1997
Max traffic volume, 2001	266,000 vehicles per day
Future construction	Expand freeway from Beltway 8 to Galveston

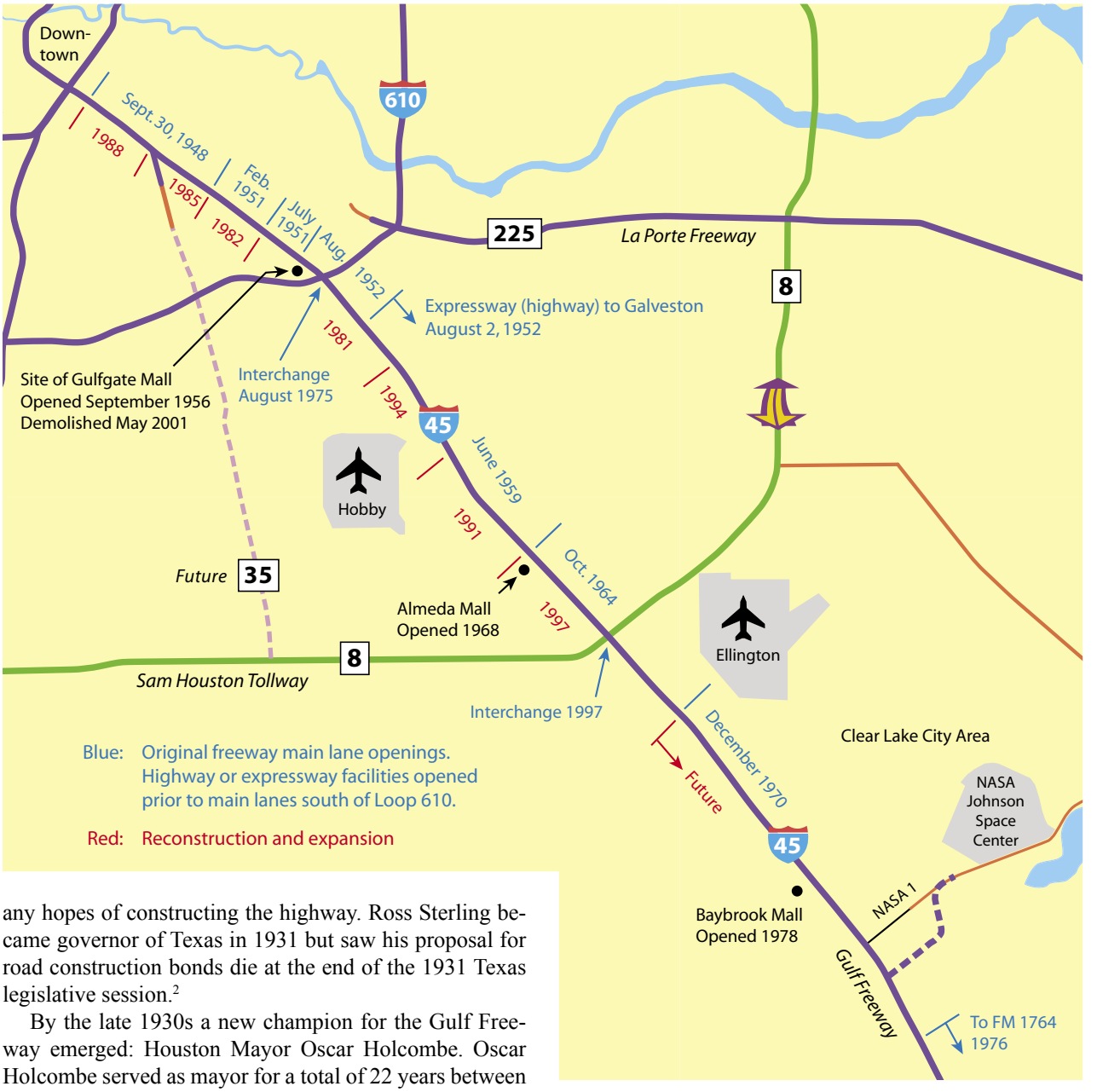


Freeway champion: Houston Mayor Oscar Holcombe was the strongest promoter of the Gulf Freeway in the late 1930s and early 1940s. In 1940, he negotiated the city of Houston's acquisition of the right-of-way of the electric railway operating on the corridor. (Photo: HMRC RGD5-7481)

Origins

The beginnings of the Gulf Freeway corridor can be traced to the formation of the Galveston-Houston Electric Railway (GHE) in 1905. Stone and Webster, which at that time actively purchased and consolidated electric railroads and power utilities, took control of GHE in 1906 and immediately changed the originally proposed route of the railway. Instead of following the shore of Galveston Bay, the GHE would have a direct route between Houston and Galveston. The route selected in 1906 was 50.5 miles (81 km) long and featured a 34-mile (54 km) perfectly straight section. In 1908 GHE entered into agreements to participate in the new concrete Galveston causeway. Passenger service on the GHE began December 5, 1911. The GHE distinguished itself as one of the fastest interurban railways in the nation, earning the title of "Fastest Interurban in the United States" in 1925 and 1926 in a nationwide speed contest conducted by *Electric Traction* magazine. The last day of service on the GHE was October 31, 1936. The track inside the Houston city limits from downtown to Park Place was taken over by Houston's transit operator, the Houston Electric Company, and continued to be used for streetcar service. The Gulf Freeway would ultimately follow the alignment of the GHE from downtown Houston to near the present-day Bellfort intersection, just south of Loop 610. Between Bellfort and Galveston, the Gulf Freeway closely parallels the GHE alignment.[1]

Even before the demise of the Galveston-Houston Electric Railway there was talk of a "super-highway" between Houston and Galveston. Ross Sterling, Houstonian and chairman of the Texas Transportation Commission, proposed the highway in 1930. The alignment contemplated at the time would have begun near the present-day Houston Hobby Airport and generally followed the Gulf Freeway corridor to the intersection of SH 6 and SH 146—the Texas City Y. However, the Depression dashed

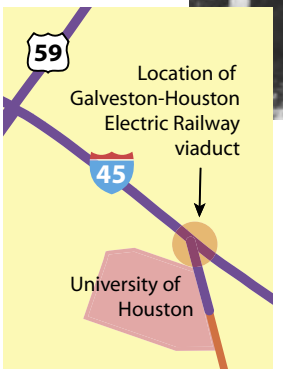


any hopes of constructing the highway. Ross Sterling became governor of Texas in 1931 but saw his proposal for road construction bonds die at the end of the 1931 Texas legislative session.[2]

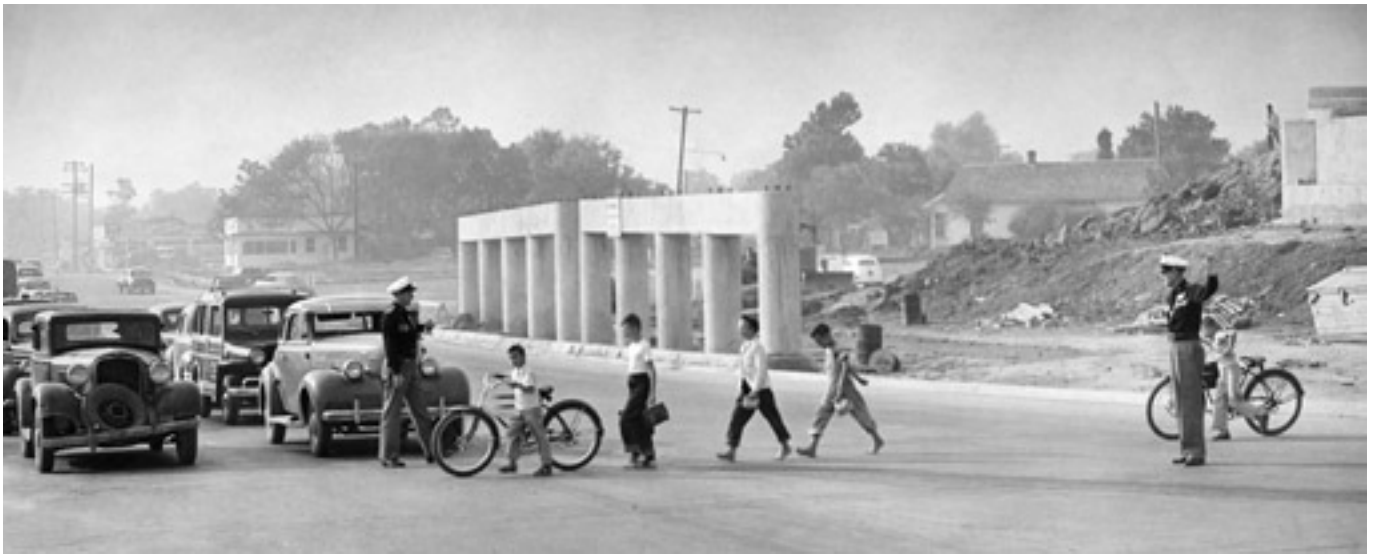
By the late 1930s a new champion for the Gulf Freeway emerged: Houston Mayor Oscar Holcombe. Oscar Holcombe served as mayor for a total of 22 years between 1921 and 1958. During his terms from 1939 to 1944, he set the wheels in motion for construction of the Gulf Freeway. On April 12, 1940, Holcombe announced that the city of Houston had reached an agreement with the Houston Electric Company for the termination of electric streetcar service in Houston. Houston Electric would be allowed to abandon its four remaining streetcar routes, including the Park Place line on the former GHE right-of-way, and the city of Houston would be responsible for the rail removal. In return, the city would receive a $50,000 payment from Houston Electric and ownership of the former GHE right-of-way. The GHE railway right-of-way varied in width from 60 to 100 feet (18 to 30 m), and a 230-foot-wide (70 m) corridor would be needed for the six-lane freeway with frontage roads. Because of the increased tax burden due to World War II, it would not be possible to immediately raise the funds needed to purchase the additional right-of-way along the corridor.

But planning for the freeway continued, and in October 1943 the Texas Transportation Commission entered into an agreement with the city of Houston and Harris County to develop the facility, referring to it as the relocation of US 75. The Federal-Aid Highway Act of 1944 revived the project by providing funding for new highway construction. Funds were released in October 1945 after the conclusion of World War II.[3]

By early 1946 plans had been formulated for the freeway, and on January 31 TxDOT released drawings of the planned design. The next day the *Houston Post* featured a large report on the project to build the "highway of the future," showing artists' depictions of the freeway, its overpasses, and the frontage roads. The inclusion of continuous frontage roads as a matter of design policy was a characteristic that would set the Gulf Freeway apart from most emerging freeways in the nation and would also set



Before the freeway: These photos show the Galveston-Houston Electric Railway, which occupied the Gulf Freeway corridor in Houston prior to the construction of the freeway. The interurban service operated from December 5, 1911, to October 31, 1936. The tracks in Houston continued to be used by Houston Electric, Houston's streetcar operator, until the shutdown of streetcar operations on June 9, 1940. In the upper photo, passengers board the Galveston Flyer in downtown Houston circa 1929. The lower photo shows the electric railway viaduct at the railroad crossing near the present-day University of Houston. The viaduct was demolished after abandonment of the railway, and construction of the freeway began in 1946. (Photos: upper, HMRC MSS 200-375; lower, HMRC MSS 145-4)



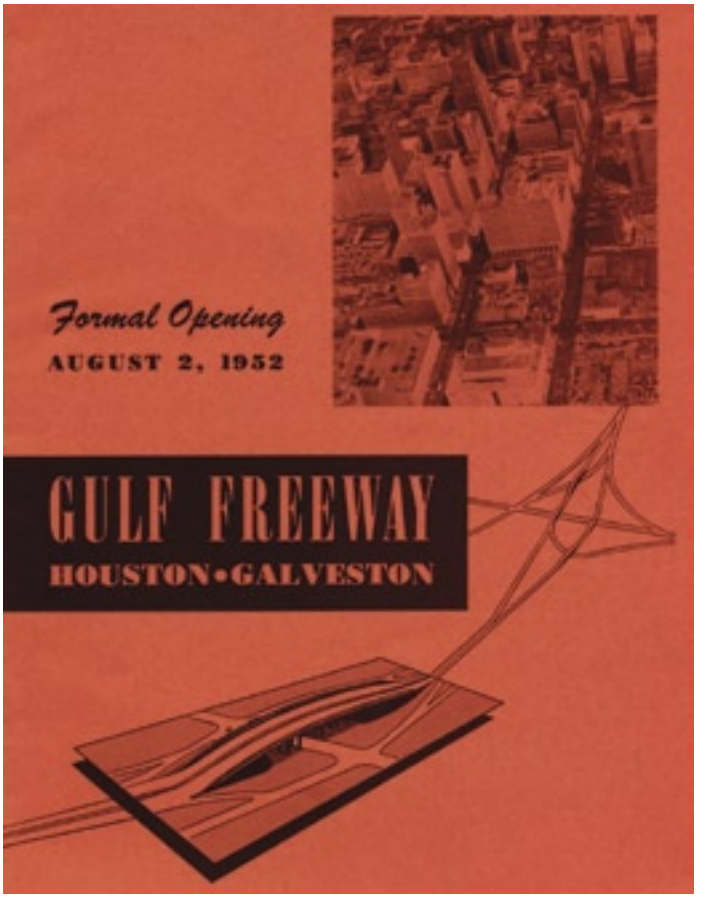
The first freeway generation sees the future take shape: Schoolchildren cross the Gulf Freeway construction zone at Telephone Road in October 1948. At the time of this photo, the first section of the freeway north of Telephone Road had just opened. (Photo: *Houston Chronicle*)

the standard for future Houston freeways. Although previous freeways outside of Houston had been constructed with frontage road or "quasi" frontage road sections, particularly in New York City and Detroit, those frontage road sections were more on a case-by-case basis and were not part of a policy for comprehensive use of frontage roads. The terminus of the freeway at downtown Houston would distribute the traffic among four city streets in an arrangement that the project engineer called the loading and unloading platforms.[4]

The first construction contracts were awarded in September 1946. On September 30, 1948, the first section of the Gulf Freeway from downtown to Telephone Road was ready for service. This was not only the first freeway in Houston, but also the first in Texas. A crowd of about 500 gathered on the Calhoun Road overpass for a 7:00 P.M. ceremony that the state of Texas had never seen before: a new freeway dedication. In the spirit of the occasion, speakers at the ceremony praised the freeway as the "best that money can buy." The president of the Chamber of Commerce stated, "There is nothing finer in the construction line in the United States than this highway." After speakers made their statements, Mayor Holcombe threw a circuit breaker to turn on the freeway lights. "The expressway will be in use from now on," he said as a phonograph played "Happy Days are Here Again," his political theme song. In a few moments, the trailer on which the speaker's stand was located was removed. Automobiles which had backed up for about one-half mile in each direction were now free to drive on the city's first freeway.[5]

With the freeway now in service, it quickly became apparent that something was missing: the freeway had no name. Press reports called it the Interurban Expressway, referring to the Galveston-Houston interurban railway that previously occupied the corridor. Mayor Holcombe

A Houston rarity: This view looks north at the Broadway intersection in early 1952. The intersection design included a traffic circle, and the same basic design remains in service in 2003. It is the only remaining traffic circle on Houston's freeway system. (Photo: Greater Houston Partnership)



Official dedication: The official opening of the Gulf Freeway between Houston and Galveston took place on August 2, 1952. Motorcades from both Houston and Galveston met at the approximate midpoint near Dickinson for the ceremony, which was held on the FM 517 overpass. A full-sized 12-page brochure with an orange cover (shown at left) was distributed. The designation as a freeway was somewhat of a misnomer, however. Only an 8.5-mile (14 km) section in Houston was actually a freeway, and there were 32 at-grade crossings between Houston and Galveston. But it just wouldn't have sounded right to call it the Gulf Highway. (Source, photo and brochure: *Galveston Daily News)*

Not really a freeway: This view, near the present-day El Dorado Boulevard, shows a typical section of the Gulf Freeway in July 1956. After its official dedication, most of the Gulf Freeway was in fact a highway without access control. TxDOT did not purchase access rights along the highway, so frontage roads would need to be added for the entire length to Galveston to make the Gulf Freeway a true freeway. (Photo: TxDOT)

quickly took action to solve the problem and launched a contest to name the freeway. There was no shortage of suggestions. The six judges sifted through 86 pages with the 13,000 entries, and on December 17, 1948, the winner was announced. The freeway would be named the Gulf Freeway. The exact name "Gulf Freeway" was suggested by only one entry, that of Miss Sara Yancy of the Heights. She received a $100 prize and, perhaps more importantly, placed her mark on Houston's freeway system. Only one other Houston freeway, the Eastex Freeway, would be named by a contest.[6]

Completing the Highway to Galveston

After the opening, work progressed quickly on the rest of the corridor to Galveston, which was a new 300-foot-wide (90 m) alignment bypassing the cities between Houston and Galveston. The new highway took on a mild dog-leg form on its route, in contrast to the existing highway which was almost perfectly straight. At the time, highway experts believed that arrow-straight highways over a long stretch created driver monotony and laxness, and gentle curves in the highway alignment were desirable. In some cases, a dog-leg was needed to steer the roadway to easily-acquired right-of-way or provide a better alignment for a stream crossing.[7]

A large dedication ceremony was held on August 2, 1952, for the completion of the highway between Houston and Galveston. Convoys departed from both Houston and Galveston, meeting at the approximate midpoint at FM 517 near Dickinson where the official dedication was held. Even though the facility was widely called the Gulf Freeway, most of the facility was not a freeway but a four-lane divided highway. The Gulf Freeway was a true limited-access facility for only 8.5 miles (14 km) from downtown Houston to the Houston city limits near the present-day Airport Boulevard. Although there were no traffic signals between Houston and Galveston, there were 32 at-grade crossings, a fact emphasized by officials who worried that motorists might not exercise appropriate caution at the intersections along the route. Those fears were realized when 15 fatalities occurred in the first six months after the official opening. In 1959, TxDOT officials launched a program to eliminate the 30 at-grade crossings that still existed along the route. Complicating the upgrade program was the fact that TxDOT had not purchased access rights along the Gulf Freeway. In order to provide landowners with the right of access and make the freeway limited-access, the Gulf Freeway would need frontage roads for its entire length to Galveston. The final at-grade crossing between Houston and Galveston would not be eliminated until 1976. But in 1952, no one was complaining about the at-grade crossings. The "dream highway" was enough to make everyone happy.[8]

The prototypical Houston freeway: This 1950s aerial view looking toward downtown illustrates one of the key features that would define urban freeways in Texas, and especially in Houston: the frontage road. Although freeways with frontage roads had previously been built in other cities, those instances were typically special cases, often the result of previously existing roads. On the Gulf Freeway, frontage roads were part of a policy and design philosophy that frontage roads should be built whenever possible. This view shows that the original frontage roads did not extend over the railroad tracks, consistent with the policy of serving local traffic, not through traffic, with frontage roads. *(*Photo: TxDOT)

The loading and unloading platform: This view shows the terminus of the Gulf Freeway just southeast of downtown Houston on August 3, 1954. The chief engineer for the Gulf Freeway called the connection into downtown the loading and unloading platforms, since four city streets were integrated into the freeway.[9] (Photo: Squire Haskins Photography, Dallas)

Increasing Traffic Load

The Gulf Freeway corridor served southeast Houston, the city's most active region in the 1940s and 1950s. The corridor included the Houston International Airport (now Hobby Airport), Ellington Field, and the burgeoning petrochemical complexes along the Houston Ship Channel. Later, in the early 1960s, NASA's Manned Spacecraft Center (now the Johnson Space Center) would be constructed in the Gulf Freeway corridor.

It didn't take long for Houston motorists to develop a love for their new freeway. On October 2, 1948, the second day of operation, 28,800 vehicles used the Gulf Freeway at its busiest point. A traffic count meter resembling a big thermometer was erected alongside the freeway to keep motorists up-to-date on the increasing traffic volume. Traffic increased rapidly, and by September 1950 the traffic meter had reached 66,300 vehicles per day. Local officials celebrated the 100 millionth vehicle-mile of travel in September 1950 with a ceremony next to the freeway and a chart that showed the growth in cumulative traffic volume.

Officials had not yet realized that rapidly increasing

The who's who of Houston celebrate freeway traffic: In August 1950, 21 months after the freeway opening, local officials celebrated the 100 millionth vehicle-mile of travel on the Gulf Freeway. Unexpectedly heavy demand for the freeway was cited as evidence of the need for more new freeways. Officials would soon realize, however, that rapidly increasing traffic volumes were not necessarily something to celebrate. By 1954 the freeway was operating at full capacity during rush hour, and the era of the Houston freeway traffic jam had begun. The following are included in the photo: William P. Hobby, former Texas governor and owner of the *Houston Post* (second from left in the white suit); W. J. Van London, head of the Houston TxDOT office and chief designer of the freeway (immediately to the left of the sign); Houston Mayor Oscar Holcombe, one of the freeway's strongest backers (immediately to the right of the sign); and Jesse Jones (second to the right of the sign). Jones was often called "Mr. Houston" in recognition of his contribution to the development of Houston in the first half of the 20th century. He was instrumental in the construction of the Houston Ship Channel, a leading real estate developer in the downtown area, and owner of the *Houston Chronicle*. His political connections brought the 1928 Democratic National Convention to Houston, and he served in powerful, high-level federal positions under President Franklin Roosevelt. In 1999 the *Houston Chronicle* named Jesse Jones the Houstonian of the Century.[10] (Photo: Center for American History, University of Texas at Austin, CN 11063)

traffic volume was not necessarily something to celebrate. Six years after the opening, in November 1954, 90,000 vehicles per day were using the freeway at its busiest point. A report issued by W. J. Van London, head of the TxDOT Houston Urban Project Office, stated that the "freeway is carrying about full capacity for 30 minutes between 7:00 and 7:30 in the morning on the inbound lanes and for about 20 minutes on the outbound lanes in the evening from about 5:00 to 5:20." The era of the freeway traffic jam was about to arrive. And so began the never-ending battle against freeway congestion in Houston.[11]

By the early 1960s, the Gulf Freeway became heavily congested and officials were recommending the construction of parallel relief freeways. The proposed extension of the La Porte Freeway (SH 225) into downtown had its origins in a 1961 traffic study. In 1965 the Alvin Freeway (SH 35) was recommended. Neither freeway would be constructed in that period, and the La Porte Freeway extension would ultimately be cancelled.[12]

By the mid-1960s, average rush-hour speeds on the Gulf Freeway would drop to about 22 miles per hour (35 km/h). In spite of traffic management efforts by TxDOT, traversing the five-mile (8 km) section of freeway from just south of Loop 610 to downtown could take 30 to 60 minutes in 1969. The freeway recorded 150,000 vehicles per day just south of downtown in 1969, far busier than Houston's second busiest freeway, the West Loop, which had a volume of 113,000 vehicles per day just south of the Katy Freeway. After 1969, a shift in Houston's freeway travel patterns occurred. Without a precipitating event, Gulf Freeway traffic volume just south of downtown dropped to 142,000 vehicles per day in 1971. In the same period from 1969 to 1971, traffic on the West Loop increased to 146,000 vehicles per day. Something larger was happening in Houston. The center of Houston's population growth and development had shifted away from southeast Houston and became focused on the west and southwest sides of the city, with huge commercial real estate developments underway at Greenway Plaza on the Southwest Freeway and in the Galleria area on the West Loop. Traffic

Keeping count: A traffic count indicator was placed alongside the freeway to keep motorists up-to-date on freeway usage. At the time of this photo, circa 1951, traffic volume had reached 75,000 vehicles per day. Unfortunately for motorists, the traffic count would go off the scale by 1954 and then continue to increase, soon causing traffic congestion. (Photo: TxDOT)

Houston's first congested freeway: By the early 1960s rush-hour traffic jams were part of everyday life on the Gulf Freeway. This 1965 photo shows the evening rush-hour backup at the beginning of the freeway in downtown. Researchers at the Texas Transportation Institute used the Gulf Freeway to investigate experimental traffic management techniques between 1963 and 1969. (Photo: HMRC MSS 157-622)

Crossing over to safety: The most serious design flaw of the original Gulf Freeway was the lack of a center guardrail. The upper left photo shows a typical section of the original freeway with its curbed median. Prior to the installation of the barrier, there were 60 crossover accidents, resulting in 9 fatalities and 70 injuries. The upper right photo shows the installation of the median guardrail in 1956. The lower photo shows the freeway in the late 1950s. In the three years after the guardrail installation, there were no crossover accidents. (Photos: TxDOT)

Ramping up to danger: This 1963 photo illustrates design and safety hazards in the original Gulf Freeway. The freeway on-ramp has practically no merging space and was the most accident-prone spot in Houston in 1963. Also shown is a row of light fixtures positioned within about 12 feet (3.7 m) of the main traffic lanes. Breakaway fixtures had not yet been developed in 1963, and these obstructions were a serious hazard to motorists.[13] (Photo: *Houston Chronicle*)

demand on the Gulf Freeway would resume its upward trend in 1972, but the Gulf Freeway would never again be Houston's traffic volume leader. From the traffic congestion perspective, this was good news. However, major relief from traffic congestion would not take place until the freeway expansion was completed in the 1980s.[14]

First Generation Freeway Design

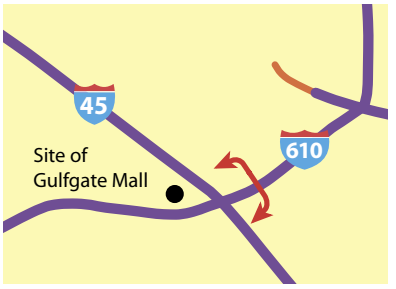
Even though the Gulf Freeway was touted as the "best that money can buy" in 1948, its shortcomings quickly became apparent. First and foremost was the absence of a median barrier. In the 1940s and early 1950s, it was common to construct freeways with only a raised median with curbs, not only in Texas but also in other states, including California. By 1956, there had been 60 accidents caused by vehicles crossing the median into oncoming traffic, resulting in nine fatalities and more than 70 injuries. A 1954 report from the Houston office of TxDOT reported that six of the seven median crossings in 1953 occurred on overpasses, and it was believed that drivers were using the elevated position to observe the cityscape rather than pay attention to the road. In 1956, a two-foot-high (61 cm) metal barrier rail was installed in the median. Three years later there were no reports of vehicles jumping over or running through the barrier.[15]

There were numerous other design deficiencies. The merging distances at the freeway on-ramps were too short. The freeway, which had been called a roller-coaster, had poor sight lines, especially at overpasses. Bridges, and in many cases ground-level lanes, lacked shoulders. The Gulf Freeway would later be designated as a "first generation freeway" by TxDOT.* The lessons learned on the Gulf Freeway would be applied to the next generation of freeways in Houston, which would start to take shape in the late 1950s. However, many of the first-generation sections of the Gulf Freeway would remain in service until the mid-1980s.

A Match Made in Heaven

As the widespread ownership of private automobiles and development of freeways began to gain momentum across the United States after World War II, new concepts

* For a complete history of the first generation freeway and subsequent generations of freeways, see "Building Better Freeways," starting on page 71.



The mall arrives in Houston: Houston's first shopping mall, Gulfgate Shopping City, opened on September 20, 1956. A huge crowd estimated at 150,000 to 200,000 visited the mall on opening day. This photo shows the original, open-air mall in the late 1950s. The Gulf Freeway crosses from left to right in the lower half of the photo, and the South Loop would later be built in the corridor just to the left of the mall. Gulfgate Mall was highly successful, but went into decline starting around 1982. In May 2001 the mall was demolished and redeveloped with retail stores in a strip-center configuration. (Photo: TxDOT)

in suburban land development began to appear. Levittown, New York, launched in 1947, typified the trend toward low-density, mass-produced, single-family housing. Another new product of the era was the auto-oriented shopping center. Crenshaw Center in Los Angeles, also opened in 1947, was one of the first auto-oriented shopping centers of the new automobile suburbia. Northgate on Interstate 5 in Seattle, Washington, which opened on April 21, 1950, was the next step in the evolution of the regional shopping center with its arrangement of stores along a central mall. The first regional shopping mall is generally recognized to be Northland Center, opened in 1954 in Southfield Township, Michigan, near Detroit. The open-air mall was designed by architect Victor Gruen. The first fully enclosed, climate-controlled regional shopping mall is generally recognized to be Southdale Center in Edina, Minnesota, just southwest of Minneapolis. Southdale, also designed by Gruen, opened in 1956.

Freeways and shopping malls were a match made in heaven, so it was only a matter of time before the Gulf Freeway would get its first mall. In March 1954 ground was broken for Gulfgate Shopping City, an open-air mall located at the intersection of the Gulf Freeway and the planned South Loop. The grand opening of Gulfgate Shopping City and its 62 stores took place on September 20, 1956. A huge crowd converged on the shopping center opening day. The parking lot was filled to capacity for the 10 A.M. opening, and by 11 A.M. automobiles were spilling over onto nearby streets and fields. An estimated 50,000 people attended the dedication, and an estimated 150,000 to 200,000 people visited the mall on opening day. Houstonians quickly adopted the shopping mall lifestyle, and Gulfgate Shopping City was highly successful. Houstonians would get their first fully enclosed air-conditioned mall, Sharpstown Mall on the Southwest Freeway, on September 14, 1961.[16]

The Gulf Freeway as a Guinea Pig

One morning in May 1956, motorists on the Gulf Freeway were greeted by something very strange. A 50-foot (15 m) tower had been erected immediately adjacent to a freeway overpass, and on top of the tower were a large clock and two movie cameras. What was this all about? It was just one of the many studies and experiments conducted on the Gulf Freeway over the years, distinguishing the Gulf Freeway as the guinea pig of Houston's freeways. The 1956 study filmed vehicle movement to help researchers get a better understanding of vehicle behavior at freeway entrance and exit ramps. In addition,

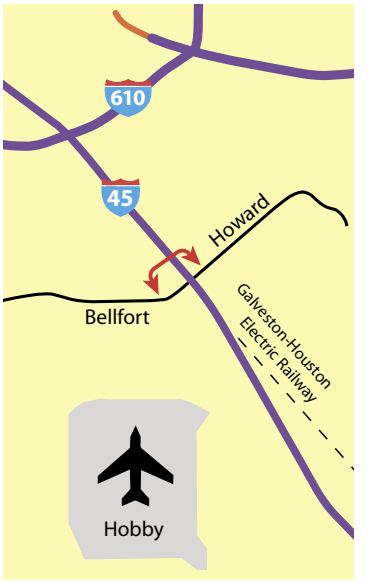
Freeway laboratory: Since the Gulf Freeway was the first freeway in Texas and the first to experience many freeway-related problems, it became a laboratory for experimentation and research. In 1956, researchers erected this 50-foot-tall (15 m) tower at the Cullen overpass to film traffic movements before and after the installation of a center guardrail. Extending from the tower platform is a clock, which was included in the camera view. Plans for the tower were publicized in advance to minimize the disruption caused by curious motorists. (Photo: TxDOT)

the study examined the effects of the addition of a central median barrier which would soon be installed. The clock was mounted so that it was visible in all camera views of the traffic flow, and white lines painted on the roadway allowed researchers to estimate vehicle speed.[17]

Intensive study of the Gulf Freeway actually began soon after its completion. In July 1949 the city of Houston released a report titled *Economic Evaluation of the Gulf Freeway*, documenting the time savings provided to motorists. The first study to determine the effect of the freeway on property values took place in 1950. The study found that freeway property values in the "zone of influence" increased by 103% between 1945 and 1950, while land values outside the freeway zone of influence increased by only 50%. Accident rates were also carefully studied, and the freeway sections of the Gulf Freeway were found to have substantially fewer fatal accidents than the national average. The benefits found by these studies were used to justify the cost of the freeway and to help secure funding for future freeways.[18]

The traffic congestion that developed on the Gulf Freeway by the early 1960s made it an ideal laboratory for studying new traffic management techniques. The period from 1963 to 1969 was the most active for freeway research. The first ramp control experiments were conducted in August 1964. Selected ramps were closed during peak hours and police officers regulated the flow of vehicles entering the freeway at ramps which remained open. Results indicated that ramp control was effective in improving freeway operation. In September 1965, ramp metering signals began operation at freeway on-ramps, with the timing of the signals still controlled manually by operators with remote control radio. After full implementation, researchers reported a 30% increase in average speed and a 12% increase in roadway capacity. In March 1966, automatic ramp metering was tested by using computer-controlled signal actuation, metering vehicles into the freeway based on available capacity and gaps in the traffic. The 1960s-era computer occupied two six-foot-tall (1.83 m) racks. Ultimately, fully automatic operation of

Freeway and train tracks part ways: This aerial view from the mid-1950s looks south at the Bellfort crossing. Just south of Bellfort, the Gulf Freeway veers away from the right-of-way of the Galveston-Houston Electric Railway. At the top center of the photo, evidence of the railway right-of-way can still be seen. (Photo: TxDOT)



the ramp meters was achieved using fixed timing.

In conjunction with the ramp metering project, a closed-circuit television system with 14 cameras was put into operation in December 1966, providing a continuous video view of a 6.5-mile (10 km) stretch of freeway. Near the end of the study in November 1968, researchers reported that the new traffic management techniques had increased the average speed during the morning rush hour from 22 to 34 miles per hour (35 to 54 km/h).[19]

Space Freeway

On May 25, 1961, President John F. Kennedy summoned both houses of Congress for a Special Message on Urgent National Needs. His speech focused on the Cold War, the threat it imposed, and steps that were needed to ensure national security. But near the end he delivered a statement that would distinguish this speech as perhaps one of the most significant in the nation's history: "I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish." With that statement, President Kennedy upped the stakes in the space race between the United States and the Soviet Union—a contest in which the Soviet Union had established its lead with the October 4, 1957, launch of Sputnik, the world's first orbiting spacecraft.

Though few would know it at the time, Houston would soon become a key player in the nation's space effort. Influential Texans in Washington, D.C., including Vice President Lyndon Johnson and Houston Representative Albert Thomas, worked to designate Houston as the location for the new Manned Spacecraft Center that would lead the nation's effort to reach the moon. On September 19, 1961, the announcement was made in Washington, D.C. that a site southeast of Houston, just off the Gulf Freeway, would house the new complex. Throughout the 1950s, the Houston Chamber of Commerce had promoted Houston as "America's Industrial Frontier," printing the statement on its publications. In an instant, Houston became Space City, USA.

The original seven Mercury Program astronauts, who

The original seven: America's first seven astronauts were introduced to the public in Washington, D.C. on April 9, 1959. In 1961, Houston was designated as the location of the Manned Spacecraft Center (now the Johnson Space Center), and on July 4, 1962, the astronauts were welcomed to Houston with a parade. Five of the astronauts were auto enthusiasts, and two in particular, Gordon Cooper and Gus Grissom, were racing fanatics and were known to race frequently on the roads around the space center, including the Gulf Freeway. Front row, left to right: Walter Shirra, Deke Slayton, John Glenn, and Scott Carpenter. Back row, left to right: Alan Shepherd, Gus Grissom, Gordon Cooper. (Photo: NASA)

had been selected in 1959, were introduced to Houston on July 4, 1962, with a large downtown parade and a barbecue at the Sam Houston Coliseum.* While the space program was pushing science and technology to new levels, five of the astronauts had a more down-to-earth interest: fast cars. Gordon Cooper, Gus Grissom, Walter Shirra, Alan Shepherd, and Scott Carpenter were all automobile enthusiasts. Two in particular, Cooper and Grissom, were especially fanatical about auto racing and were partners in an Indy car racing team that participated in major racing events. The racing enthusiasts didn't limit their speed contests to the race track. The roads around NASA, especially the Gulf Freeway and State Highway 3, were the scene of frequent high-speed races between the astronauts.[20]

The Manned Spacecraft Center, which was renamed the Johnson Space Center in 1973, also served as the launch pad for Houston's first large-scale, master-planned real estate development. In late 1962, Del E. Web Corporation and Friendswood Development announced the 15,000-acre Clear Lake City community, dwarfing the 6,500-acre Sharpstown development which had begun along the Southwest Freeway in 1955.[21]

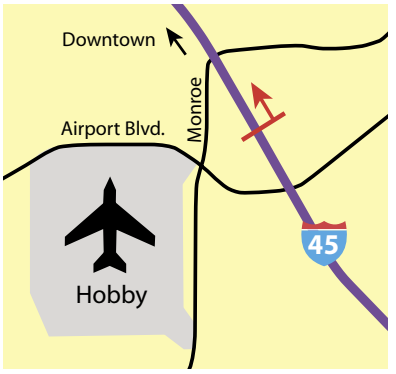
Entering the Anti-Freeway Era

Among its many firsts, the Gulf Freeway was also Houston's first freeway to generate a substantial amount of community opposition over expansion plans. The year was 1972, and TxDOT was formulating plans to expand the antiquated section of freeway just south of downtown, which had opened in 1948, and run the northern terminus of the planned Alvin Freeway on the same right-of-way as the Gulf Freeway. Approximately 100 feet of right-of-way would be taken on the south side of the Gulf Freeway, displacing about 170 homes with 500 to 800 residents and 22 businesses. The residents to be displaced were almost entirely black and low-income, and many were elderly.

Leading the black community's efforts against the project was the director of the Martin Luther King Community Center, Madgelean Bush, a feisty woman who fought for improvement of the black inner city and told people she had a degree in "ghettology." After the first public hearing

Eight days in a space capsule? No problem. The Gulf Freeway? Too dangerous! This cartoon appeared in the *Houston Chronicle* on August 10, 1969, just after Apollo 11's moon landing with its crew of Neil Armstrong, Edwin "Buzz" Aldrin, and Mike Collins.

* The Sam Houston Coliseum was located downtown at the present-day location of the Hobby Center for the Performing Arts, 800 Bagby. It was constructed in 1937 and demolished in 1998.



The Gulf Freeway transitway: In the late 1960s planners at TxDOT were already envisioning a comprehensive busway system for the Gulf Freeway, fully integrated with park-and-ride lots and connecting ramps along its length. Twenty years later in May 1988, the original concept of the fully integrated bus lane was realized with the opening of the transitway from downtown to Loop 610. The transitway was extended southward to south of Beltway 8 during the 1990s. This morning rush-hour view looks north along the freeway at the connection ramp to the Monroe Transit Center, which is approximately halfway between Loop 610 and Beltway 8. This view shows the mix of buses and high-occupancy automobiles that use the transitway. (Photo: Metropolitan Transit Authority)

in February 1973, two organizations were formed to oppose the freeway: the Anti-Freeway Coalition and the Third Ward Preservation Association. A third group known as the Urban Bunch, consisting primarily of architects, also opposed the freeway expansion. The opposition groups enlisted the help of recently elected minority representatives Barbara Jordan of the United States House and State Representative Mickey Leland. Additional public hearings were held, often with heated dialog and racial overtones. Fueling the opposition was a belief that freeways benefited affluent white suburban communities and contractors, while disrupting low-income inner-city neighborhoods. At one meeting an irate black woman exclaimed: "This will be the last time a white man's bulldozer moves through the black man's bedroom!" [22]

The opposition was not able to stop the Gulf Freeway expansion, however. The 1973 environmental impact statement for the project stated, "An analysis … would indicate that there is no widespread opposition to the project. It is also concluded that those opposing the project have received little or no widespread support even though some of those opposing the project have received wide publicity through the news media." The expansion project to build a dual freeway with the Gulf Freeway at ground level and the lanes for the future Alvin Freeway on elevated structures would proceed, although construction would not begin until the early 1980s.

"The Gulf Freeway, billed as the Highway of the Future at its inception in 1945, is still the highway of the future, for it has never been completed."

Houston Chronicle, August 10, 1969

50 Years of Construction

When the Gulf Freeway was officially dedicated on August 2, 1952, construction on the Gulf Freeway was far from complete. In fact, work had really just begun. The first dedication ceremony in 1948 marked the beginning of 50 years during which there was almost always some construction in progress. Finally, in 1997, ongoing construction came to a temporary halt with the completion of the magnificent stack interchange at Beltway 8. But in those 50 years, the Gulf Freeway became known as the freeway that was never finished, prompting one of Houston's longest-running one-liners: "I just hope to live long enough to see the Gulf Freeway finished." [23]

As sections of the Gulf Freeway were opened starting in 1948, many were obsolete as soon as they opened or shortly thereafter. First generation freeway design standards and rapidly increasing traffic volume rendered the freeway inadequate. The Gulf Freeway "was the first freeway in the state, and we didn't have freeway experi-

The Gulf Freeway wishbone: This transitway access structure was completed in 1997 just south of Beltway 8. (Photo: James Lyle, TTI, June 2001)

ence," explained A. C. Kyser, manager of TxDOT's Houston Urban Project Office, in 1969. A few years later in 1973, another engineer observed, "Very little was known about freeways when we started. And who knew about the Space Center location or the rate of growth Houston would have?" In 1976 a construction worker on a project joked, "I think we'll get through with this in about the next 20 years." His joking prediction turned out to be surprisingly accurate.[24]

Soon after the 1952 dedication, work began to provide grade separations at many of the intersections on the highway. Starting in the late 1950s, TxDOT began to reconstruct the freeway one small section at a time to bring it up to standards and convert it from a highway to a true freeway. In 1960 the first widening was completed when a short section of freeway was widened to six lanes from the present-day Loop 610 southward to Sims Bayou. From the late 1960s to the late 1970s, traffic was shifted to the frontage roads as long sections of main lanes were reconstructed all the way to Galveston. The process began all over again in the early 1980s, with work beginning downtown and proceeding southwards to rebuild and expand the freeway to eight main lanes with a central, barrier-separated transitway lane. The slow progression finally reached Beltway 8 in the mid-1990s with the completion of the huge stack interchange in 1997. Finally, the Gulf Freeway was construction-free. But it was not finished. In fact, the Gulf Freeway may never be truly "finished."

Future Plans

A comprehensive study completed in 1999 set the wheels in motion for the next round of major reconstruction. From Beltway 8 to Galveston, the freeway will be modernized and widened. The section from Beltway 8 to

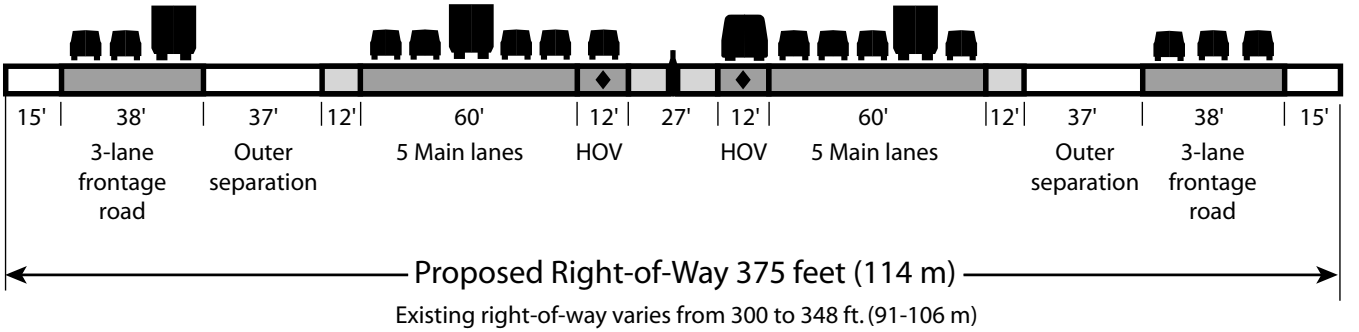
"Like the pyramids of Egypt, the freeway has consumed much of the working careers of many of the workers involved in its construction."

Houston Post, March 25, 1976

Key dates in the history of the Gulf Freeway

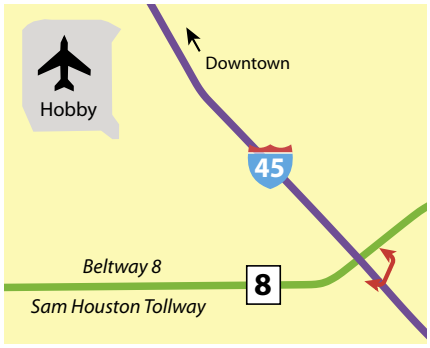
1930	The Houston-Galveston super highway receives its first serious consideration.
1940	The city of Houston purchases the right-of-way of the former Galveston-Houston Electric Railway.
1943	TxDOT officially designates the route as a freeway.
1948	The first freeway section opens on September 30.
1952	The highway to Galveston is dedicated.
1959	The first major reconstruction and expansion begins.
1961	NASA announces the Manned Spacecraft Center near the Gulf Freeway.
1976	The entire distance to Galveston meets freeway standards.
1988	Transitway operation begins.
1997	Major freeway construction temporarily ends with the completion of the interchange at Beltway 8.
Future	Expansion between Beltway 8 and Galveston.

FM 518 in League City, currently a 6-lane freeway with 2-lane frontage roads in each direction, will have 10 general purpose main lanes, 2 diamond lanes for high occupancy vehicles, and 3 frontage road lanes in each direction. From FM 518 in League City to Galveston, the freeway will be expanded from its present 6 main lanes to 8 main lanes, and the Galveston Causeway will be reconstructed to an 8-lane facility. Work on the $136 million causeway reconstruction project began in the summer of 2003, and work on the new NASA 1 bypass freeway, which will involve reconstruction of the Gulf Freeway main lanes, could begin in 2004. Those projects will kick off another 20 years of work on the freeway.[25]



Future construction: In 2003 the Gulf Freeway is free of major construction, but plans are being developed for the next wave of construction which will expand the freeway from Beltway 8 to Galveston. The 9-mile (14 km) section immediately south of Beltway 8 will be expanded to the configuration shown above, with 10 general purpose main lanes, 2 non-barrier-separated HOV lanes, and 3-lane frontage roads in each direction. Construction will likely take place between 2010 and 2015. (Source: adapted from *I-45 South Corridor Major Investment Study Executive Summary*)

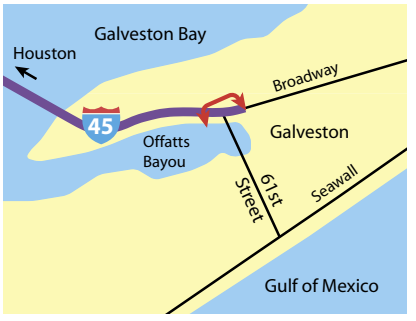
The downtown approach: The downtown approach of the Gulf Freeway is actually a multiplex with the planned Alvin Freeway. The elevated structures between the Gulf Freeway main lanes and the frontage roads serve as the terminus of the Alvin Freeway and the downtown exit for both the Gulf and Alvin Freeways. The early 1980s image at right shows this section of freeway before reconstruction began. The freeway was still generally in its original 1948 configuration. The main lanes were expanded and the elevated structures were added. This project generated the first major community opposition over a planned freeway expansion in Houston when public hearings were held in 1973. (Photos: above, May 2002; right, Chuck Fuhs)



The ultimate stack interchange? The impressive interchange at the Gulf Freeway and Beltway 8 features high-flying ramps, symmetric design, and a sprawling right-of-way. This view looks northwest along the freeway. The completion of the interchange in 1997 capped 50 years of nearly nonstop construction on the Gulf Freeway. (Photo: May 2002)

Overall view: This wide-angle view shows the overall configuration of the interchange. (Photo: May 2002)

Ground view: This view looks west along the Beltway 8 main lanes, with the frontage road at ground level at left. (Photo: November 2002)



Gulf Freeway namesake: This view of the Gulf Freeway in Galveston shows the freeway's namesake, the Gulf of Mexico. The body of water in the center of the photo is Offatts Bayou, which is really more of an inlet from Galveston Bay than a bayou. The water in the upper part of the photo is the Gulf of Mexico. The road running vertically is 61st Street. The Gulf Freeway ends just to the left of this photo and does not actually reach the Gulf of Mexico. (Photo: James Lyle, TTI, June 2001)

Southwest Freeway, US 59 South

Southwest Freeway	
Designated as freeway	1953
First freeway section open	1961
Freeway complete	1975 (to Sugar Land)
Reconstruction	1989–ongoing
Max traffic volume, 2001	337,000 vehicles per day
Future construction	Depress elevated freeway into trench (in progress in 2003); expand freeway in Fort Bend County.

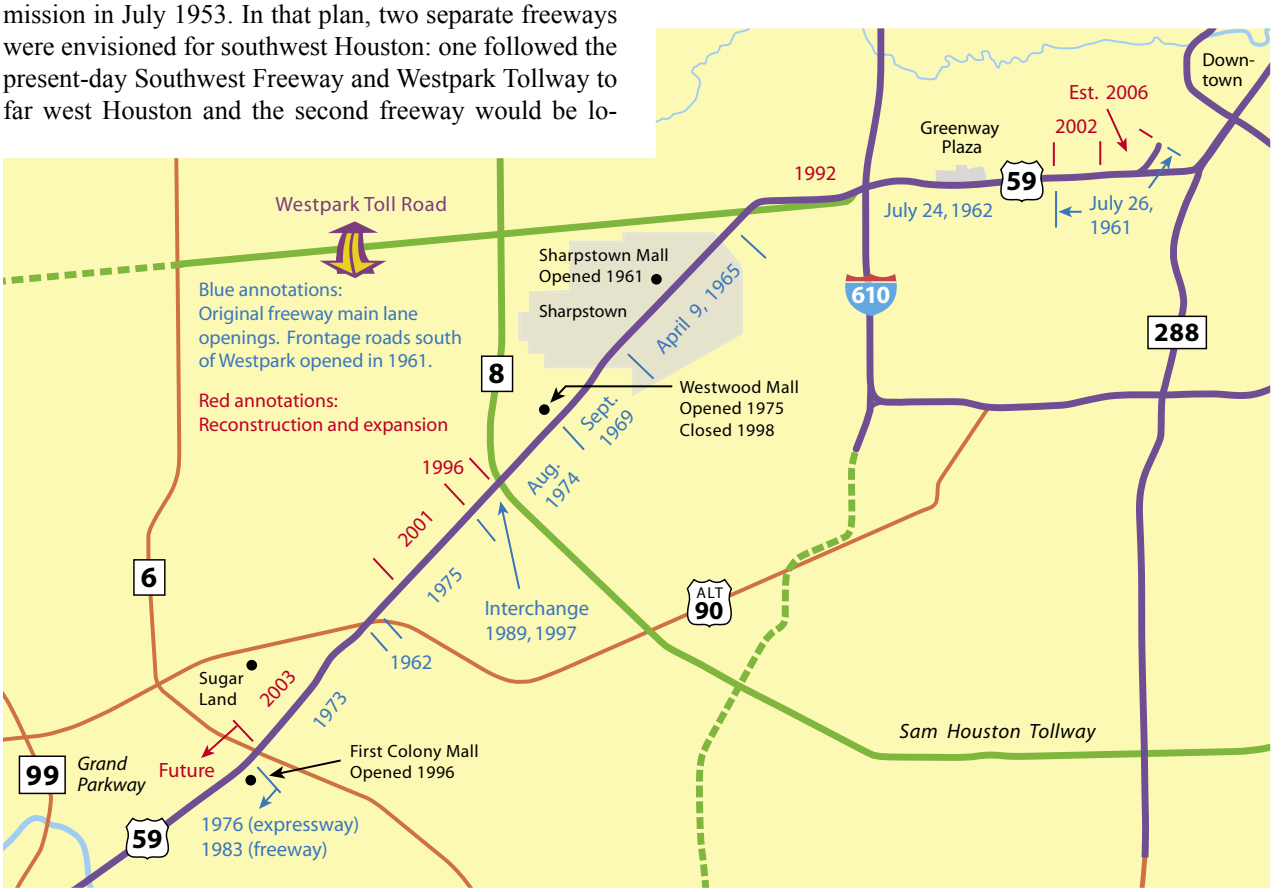
The relationship between land developers and freeways has always been a cozy one. The freeway gets built, the land becomes prime for real estate development, and developers make millions. But what if the freeway doesn't come, or what if it is indefinitely delayed? If you are the real estate developer, you do whatever it takes to get the freeway built. That includes offering to donate the land for the freeway and aggressively lobbying political officials to build it.

In 1957, the Southwest Freeway became the recipient of Houston's first big freeway land giveaway when real estate developer Frank Sharp pulled together a large coalition of landowners to donate a 10.5-mile (17 km) right-of-way strip for the freeway. Sharp needed the freeway to get shoppers to his planned mall and suburbanites to their new houses in his huge Sharpstown community. Sharp probably never envisioned that the Southwest Freeway would someday become Houston's freeway-era main street and one of the busiest freeways in the United States.

Origins

The need for a freeway serving the southwest part of Houston was first identified in a 1953 origin and destination study that served as the basis for the formulation of Houston's first freeway master plan. Local authorities presented the master plan to the Texas Transportation Commission in July 1953. In that plan, two separate freeways were envisioned for southwest Houston: one followed the present-day Southwest Freeway and Westpark Tollway to far west Houston and the second freeway would be located on the US 90A ("Alt-90")-South Main corridor (see map on page 13). In September 1953, the Texas Transportation Commission authorized route determination studies for US 59 from the Fort Bend County line to US 75 (now IH 45) in downtown Houston.[26]

In late 1953 the plans for southwest Houston were being reviewed. In a December 29, 1953, letter to the Houston office of TxDOT, City of Houston Planning Director Ralph Ellifrit reported that his department had devised a new alignment for the Southwest Freeway which curved southward from the Westpark corridor and connected with the present-day US 90A near Sugar Land. "We have made some very rough studies of such a location and would like



Pre-freeway US 59: Before the freeway era, major highways were routed through the city on ordinary city streets. This view, from around 1950, shows US 59 where it followed today's South Main. (Photo: HMRC MSS 227-519)

to show it to you after the first of the year to see what you think about it," Ellifrit wrote.[27]

The new alignment of the Southwest Freeway as proposed by Ellifrit closely resembled the final alignment and would be adopted in the March 1954 revision of the master plan for Houston's freeways. The Westpark Freeway and US 90A Freeway were eliminated in the 1954 plan. The alignment appearing on the city of Houston's 1955 *Major Thoroughfare and Freeway Plan*, the first edition of the plan to include the full freeway system, was still not final, however. Plans for the freeway alignment in 1955 showed the freeway veering southward in the vicinity of Weslayan and proceeding westward along Glenmont Street, which is approximately one-half mile (0.8 km) south of the actual constructed alignment. In January 1956 the final alignment was adopted. In August 1960, the Texas Transportation Commission formally approved the closure of the downtown gap in US 59, connecting the Southwest Freeway to the Eastex Freeway.[28]

Freeway Suburbia

Just southwest of the urbanized area of Houston was a huge tract of land whose destiny would be shaped by the imminent age of the freeway and freeway-driven suburban development. The newly designated Southwest Freeway was aligned to cut a diagonal path right through the property. For land developer Frank Sharp, the owner of the tract, the freeway would be the backbone of his new vision of urban America—a vision he modestly named Sharpstown.

Sharp and his partners were reported to have performed the first studies for Sharpstown in early 1954, about the same time that Houston's original 1953 freeway master plan was modified to place the Southwest Freeway


THE HOUSTON POST SUNDAY, MARCH 13, 1955

You Are Invited to Attend

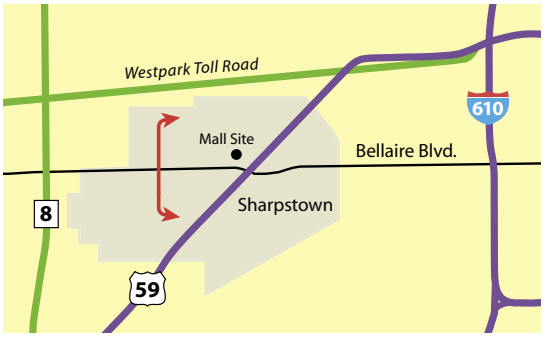
Houston's Greatest Home Building Event

Sharpstown

THE WORLD'S LARGEST RESIDENTIAL DEVELOPMENT

Officially Opens Today at 3:45 p.m.

Texas-sized suburbia: This is an excerpt from the full-page announcement for the grand opening of Sharpstown that appeared in the Houston newspapers on March 13, 1955. The advertisement touted Sharpstown as the world's largest residential development, a "city within a city" with 25,000 homes planned. The opening ceremony featured the sealing of a time capsule to be opened on March 13, 2000. When the time capsule, a metal enclosure, was opened, moisture infiltration had damaged or destroyed all the contents.



Opening a path to suburbia: This 1959 view looks east over Sharpstown, with the Southwest Freeway frontage roads crossing diagonally across the photograph. As part of the deal in which landowners donated 10.5 miles (17 km) of right-of-way for the Southwest Freeway in 1957, TxDOT agreed to begin construction of the frontage roads within one year. In this view, the first section of Sharpstown is at right center, abutting the frontage roads. Within five years of this photograph, nearly all the vacant land in this view had been developed with housing, apartments, and shopping centers. (Photo: The Positive Image)

on its alignment through Sharpstown. Speculation that the Southwest Freeway was realigned for Sharp has been a freeway planning legend in Houston. Available documents suggest that the Sharpstown alignment was a technically superior alignment, and Sharp's cooperation in preserving the freeway corridor worked to the benefit of both Sharp and Houston's freeway program. For local authorities who faced the difficult and expensive job of right-of-way acquisition for freeways, it was logical to align the freeway where there was a single, cooperative landowner.[29]

Sharp and his partners formally acquired a 4,000-acre tract known as Westmoreland Farms in June 1954 and added another 2,500 acres nine months later. Plans for the new project were first announced on July 10, 1954. Whereas many freeways in the 1950s cut paths through established neighborhoods, the Southwest Freeway would be the lifeblood of Sharpstown, not a destructive force. The entire community would be designed around the freeway.

The sheer size of what was touted as the "world's largest residential development" was impressive, with 25,000 homes planned for the 6,500 acres.* The planned community would be substantially larger than the record holder

* Only about 6,800 single-family homes were ultimately constructed in Sharpstown. Land was converted to commercial or educational use, some of the original acreage was sold, and a planned development of high-rise housing north of Sharpstown Mall was not built. There probably was also some marketing hype in the original announcements.

The birth of Houston's busiest freeway: This December 1959 view looks east over the beginnings of the Southwest Freeway-West Loop interchange. This interchange would be the first four-level interchange in Texas with modern design characteristics. The four-level Fort Worth Mixmaster at IH 30 and IH 35W was completed in 1958, but it was built to first-generation freeway standards with left exits and poor geometrics. The section of the Southwest Freeway to be built in the immediate foreground would go on to become Houston's busiest freeway starting in 1993 and continuing in 2003, with 337,000 vehicles per day in 2001. (Photo: TxDOT)

> "Sharpstown [is] completely planned and geared for the motor … ."
>
> *Houston Post*, March 14, 1955

at the time, William Levitt's 16,000-home Levittown, Pennsylvania. But more significant was the integration of all urban amenities into Sharpstown, including a shopping mall, schools, churches, hospitals, a country club, and of course, the freeway. A representative from the Federal Housing Administration remarked, "The primary consideration is not size, but the satisfaction of developing the kind of city which will stand as a model in years to come." It was, he said, "a new experiment in our way of life." The large-scale development of virgin land also provided savings that impressed out-of-town reporters. The real estate writer for the *Cleveland Press* observed that "developed lots which cost $2,000 here would start at $3,500 to $4,000 around Cleveland." Also noteworthy to reporters was Sharpstown's country club, which would bring country club living to all residents of Sharpstown for an affordable price.[30]

But perhaps the most significant aspect of Sharpstown was succinctly stated by the *Houston Post* on March 14, 1955: "Sharpstown [is] completely planned and geared for the motor … ." This was automobile suburbia taken to a new level of scale. The architect for the planned community shopping center stated, "We have designed it to maintain four or five square feet of parking space to every square foot of shopping space." Main Street was gone, and residents would soon be greeted by a small ocean of a parking lot at the neighborhood shopping mall.[31]

On March 13, 1955, Frank Sharp launched his Sharpstown community in a large, locally televised ceremony attended by thousands. Two-bedroom and three-bedroom homes were priced from $12,500 to $16,800. A month later 54 homes were complete and 420 homes were under construction. A year later about 1,000 homes were complete. Sharp celebrated the first anniversary of his community with a big birthday party featuring a 20-foot-wide by 15-foot-tall birthday cake and appearances by film star Walter Pidgeon and actress Jarma Lewis.[32]

Getting the Machinery in Gear

With the formulation of Houston's freeway plan in 1954, there was a huge job ahead for the agencies responsible for getting the freeways built. Getting the freeway

construction machinery in motion and up to full speed proved to be problematic in the mid-1950s, slowing down many projects, including the Southwest Freeway. The alignment of the Southwest Freeway from Weslayan to Hillcroft was in a state of flux until January 1956, preventing the protection and purchase of right-of-way. TxDOT officials were contemplating ideas for the freeway design, including a nine-lane facility with three reversible lanes inside Loop 610. Agencies responsible for acquiring right-of-way were understaffed and overwhelmed with the workload. In the meantime, development in southwest Houston continued at a furious pace. On September 19, 1955, Ralph Ellifrit, director of the city of Houston's Planning Department, sent a letter to TxDOT identifying the Southwest Freeway inside the loop as the "most critical point" in terms of potential loss of right-of-way to development, saying, "There has been too much uncertainty as to design and exact location."[33]

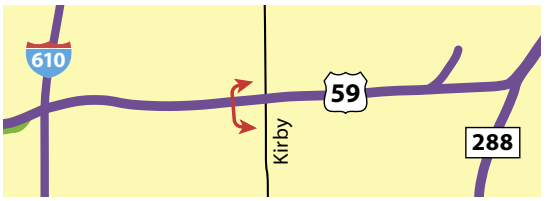
In early 1957, Harris County took steps to expedite right-of-way acquisition by authorizing the hiring of 20 additional appraisers. A total of 547 parcels needed to be acquired for the freeway, and efforts to that point had acquired only a small fraction of the total needed. In July 1957, the right-of-way acquisition program was still struggling and Eugene Maier, director of the city of Houston's Traffic and Transportation Department, sent a letter to Mayor Oscar Holcombe recommending that every effort be made to develop a "crash" program to acquire necessary right-of-way for the freeway. At a freeway planning meeting in July 1957, local officials designated the inner loop section of the freeway as the top priority for construction. The process began to pick up momentum soon afterward.[34]

Let's Make a Deal

Sharpstown was a huge success and developed rapidly, but there was one big problem. Plans for the Southwest Freeway outside Loop 610 were stuck in neutral as all efforts focused on the section inside the loop. Frank Sharp had to put his plans for a new air-conditioned shopping center on hold since the freeway would be critical in providing customers to the mall. To make matters worse, Fort Bend County southwest of Houston announced in early August 1957 that it could not provide funds for right-of-way for the section of the Southwest Freeway within its boundaries.[35]

By late summer 1957, real estate interests in southwest Houston realized that they would need to take matters into their own hands to get the freeway built. While Frank Sharp had offered to donate a 300-foot-wide (91 m) right-of-way strip through 3.2 miles (5.1 km) of his community, there was still a large section of the 11.1-mile (18 km) freeway segment for which no right-of-way was in hand. On September 6, 1957, a group of landowners on the originally planned freeway alignment submitted an offer to donate a total of 10.5 miles (17 km) of right-of-way for the freeway—Sharp's original 3.2 miles plus 7.4 miles of new donations. Only one-half mile (0.8 km) of right-of-way would need to be acquired by authorities. The offer hinged on the stipulation that construction of the freeway

Frank Sharp finally gets his freeway: On April 9, 1965, the Southwest Freeway main lanes through Sharpstown were dedicated. The freeway frontage roads, completed in 1961, had kept development in Sharpstown running at full speed. By the time the main lanes were dedicated, about two-thirds of the land in Sharpstown was already developed. Visible in the photo from left to right: Louie Welch, mayor of Houston; Gail Whitcomb, president of the Houston Chamber of Commerce; Herbert C. Petry, chairman of the State Highway Commission; Frank Sharp; J. H. Kultgen, member of the State Highway Commission. (Photo: TxDOT)



Moving into the major league of freeways: This May 1961 photograph looking east shows construction in progress at the Kirby Road intersection. This section of freeway was the first in Houston to be constructed to modern design standards with high traffic-carrying capacity. The depressed section of freeway in the upper part of the photo, with 10 freeway lanes, is nearly complete and was opened to traffic in July 1961. The section of freeway under construction in the foreground was opened in July 1962. (Photo: TxDOT)

frontage roads would begin within one year. On September 26, 1957, the landowners and local authorities presented their offer to the Texas Transportation Commission in Austin. The offer was accepted. In March 1958, TxDOT made the Southwest Freeway its top priority among non-interstate highways, allocating $6.2 million of the $15.6 million in available Houston-area funds to the freeway, the largest chunk going to any single freeway. Construction contracts for the frontage roads through Sharpstown were awarded in the next few months.[36]

It was nothing new for real estate interests to be supportive of freeways. What was new was the donation of such a large amount of right-of-way to expedite the freeway construction. This arrangement would be prophetic of the future of freeway construction in Houston, as real estate interests would step forward with land donations to get freeways built when government resources for new freeways dwindled starting in the 1970s.

Progress on the inner loop section of the Southwest Freeway also began to gain momentum in late 1957. By August 1958, 188 of the 547 right-of-way parcels had been acquired. In September 1959 the last parcel was acquired. The path was clear for construction. With the freeway right-of-way in hand and construction underway, the suburbanization of southwest Houston had the green light to proceed at full speed.[37]

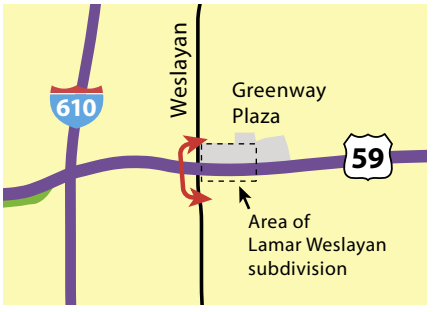
Building the Freeway

The freeway section inside Loop 610 would be the largest and most modern freeway segment in Houston at the time. The first full freeway segment from downtown to Kirby, a three-mile (4.8 km), 10-lane facility with both elevated and below-grade sections, was dedicated on July 26, 1961. On December 22, 1961, the freeway frontage roads from Sharpstown southward to US 90A in Sugar Land were dedicated, although sections had opened in advance of the official dedication. On July 24, 1962, a dedication ceremony underneath the West Loop overpass marked the completion of the freeway from downtown to just south of Westpark near Sharpstown, where traffic exited to the frontage roads. Motorists now had an uninterrupted roadway from downtown to far southwest Houston, and Frank Sharp had his coveted freeway access to Sharpstown. The interchange at Loop 610 was only the second four-level interchange in Texas and was far more modern in design than the Mixmaster in downtown Fort Worth, which had opened in 1958. On April 9, 1965, the freeway main lanes through Sharpstown, from south of Westpark to Beechnut, were opened. Frank Sharp finally had his freeway. By then, residential development in Sharpstown was about two-thirds complete. The main lanes pushed southward section by section in the following years and were complete to Sugar Land in 1975. The expressway south of Sugar Land opened in 1976.[38]

Big traffic jam, tiny car: Amidst all the hulking American cars in this 1962 photograph, the driver of the BMW 600 must have felt a little overwhelmed. The BMW 600 was an enlarged version of the Motocoupe, a popular minicar of the 1950s that originated with the Italian company Iso in 1953 and was licensed to numerous automobile manufacturers, including BMW in Germany. Approximately 8,500 Motocoupes were exported to the United States by BMW starting in 1957. What was believed to be the first Motocoupe in the United States arrived at the Port of Houston in late 1956 and was put on display in the lobby of the Houston Bank and Trust Company. The 772-pound (350 kg) Motocoupe had an air-cooled one-cylinder motorcycle engine capable of speeds up to 60 miles per hour (96 km/h). The BMW 600 was slightly larger than the Motocoupe, weighing about 1140 pounds (515 kg) and powered by a two-cylinder engine providing a top speed around 63 miles per hour (100 km/h). Notice that the Motocoupe and BMW 600 do not have driver-side doors. The front panel of the vehicles including the steering wheel hinged open to let the driver in. The BMW 600 has a passenger-side door for its rear seat (not visible in the photo), while the Motocoupe has only the front door. As for the traffic jam, it was probably due to an accident or the abrupt end of the freeway just ahead.[39] (Photo: upper, *Houston Chronicle*; below, Greater Houston Partnership)

A Neighborhood in the Wrong Place

In the 1960s, a story of a freeway, a neighborhood, and big-time real estate development began to unfold on the Southwest Freeway inside Loop 610. The neighborhood was Lamar Weslayan, a community of modest post-World War II tract houses constructed around 1950. In 1962 the Southwest Freeway cut a path through the south end of the Lamar Weslayan neighborhood, displacing 52 homes, but the neighborhood remained intact with houses on both sides of the freeway. In 1963 a 41-acre tract at the Southwest Freeway and Buffalo Speedway, just east of Lamar Weslayan, was purchased for development. Real estate developer Kenneth Schnitzer and his Century Properties development firm began development of office towers



First the freeway, then the real estate developers: The Lamar Weslayan subdivision had the unfortunate luck of being in the path of the Southwest Freeway and the westward expansion of the Greenway Plaza office complex. The above 1960 view looking east shows right-of-way clearance through the subdivision. Most of the subdivision remained intact, for the moment. The Greenway Plaza real estate development was launched in the late 1960s on the vacant tract of land in the upper left of the above photo. The developer, Kenneth Schnitzer, needed more land, so he bought all the homes in the Lamar Weslayan subdivision to make way for expansion of the office complex. In the 1973 photo at the top of the opposite page, the first displacements had occurred for a new sports arena, which was just beginning construction. By the late 1970s all the homes in the neighborhood had been removed. The lower photo on the opposite page shows Greenway Plaza in September 2002. (Photos: above, HMRC RGD6-892; opposite upper, HMRC; opposite lower, September 2002)

No relief in sight: This section of the Southwest Freeway opened in 1962, and by 1968 severe traffic congestion had already developed around Loop 610 at rush hour. A 1968 study recommended an aggressive program of improvements to avoid "complete paralysis of traffic on the Southwest Freeway." This photograph, looking east towards the Loop 610 interchange, was taken in 1972 when TxDOT was discussing plans for widening the freeway to 10 main lanes from Hillcroft all the way into downtown. Then came the 1970s highway funding crisis and population boom in Houston. The Southwest Freeway became a commuter's nightmare. In 1992, 20 years after TxDOT first started planning improvements, the expansion of this section was finally completed.[40] (Photo: National Archives NWDNS-412-DA-10534).

on the tract in the late 1960s. By 1968 Schnitzer had big plans for his development known as Greenway Plaza, proclaiming, "There is no office development in the country that compares in size, scope, and accessibility, with the exception of Century City in Los Angeles." But there was one problem. Forty-one acres would not be enough for his big plans.[41]

So Schnitzer looked west—to the Lamar Weslayan neighborhood. During the 1960s he began to buy up the 350 houses in Lamar Weslayan, often personally closing deals with homeowners. By the early 1970s houses were being cleared for development, including the land for the Summit sports arena, which opened in 1975 and was renamed Compaq Center in 1997. However, Kenneth Schnitzer was unable to use his charm to close the deal on one house. The homeowners, Jim and Dorothy Lee, were demanding $500,000 for their home, which would otherwise have been worth about $26,000. The asking price translates to about 1.51 million in 2003 dollars. Finally in 1974, Schnitzer gave in to the homeowner's demand so development could move forward.[42]

By the late 1970s the Lamar Weslayan neighborhood had been wiped off the map. While the Southwest Freeway was directly responsible for only a small number of displacements, its presence provided the impetus for real estate development that displaced the entire neighborhood. It was perhaps one of the most interesting twists in neighborhood displacement resulting from freeway construction.

Too Successful for Its Own Good

The Southwest Freeway quickly became Houston's most important freeway corridor in terms of commercial real estate development, activity centers, and population. But with success comes traffic, and lots of it. In 1968, just six years after the opening of the freeway, a study by a consulting firm reported that peak-hour speeds averaged less than 10 miles per hour and an aggressive program of improvements was necessary to "avoid complete paralysis of traffic on the Southwest Freeway between Buffalo Speedway and the West Loop." In 1972, just 10 years after its opening, TxDOT officials were discussing plans to

Key dates in the history of the Southwest Freeway	
1953	A freeway for southwest Houston is proposed as part of the freeway master plan. The freeway is approved by TxDOT in September 1953.
1954	The general alignment of the freeway is defined. The alignment is finalized in 1956.
1957	A group of landowners led by Frank Sharp donates right-of-way for 10.5 miles (17 km) of freeway.
1961	The first freeway section opens.
1962	The West Loop interchange, the first four-level stack in Houston, is completed.
1975	The freeway main lanes are completed to Sugar Land.
1989	Reconstruction and expansion begins. A long segment from Shepherd to Beltway 8 is completed in 1992.
1993	The Southwest Freeway becomes Houston's busiest.
1997	The interchange at Beltway 8 is completed.
2002	Work begins to place the elevated section of freeway at Montrose into a trench.
Future	Expansion in Fort Bend County.

expand the 8-lane sections of the freeway to 10 lanes and revise ramp configurations. Officials stated that the expansion might begin in four to six years. The highway funding crisis of the 1970s caused an indefinite postponement of plans for improvements. In the meantime, Houston's 1970s energy boom unleashed a massive amount of development along the Southwest Freeway corridor and in the nearby Galleria area, feeding more and more traffic onto the already overloaded freeway. The 6-lane freeway outside Loop 610 became a critical choke point in Houston's freeway system.[43]

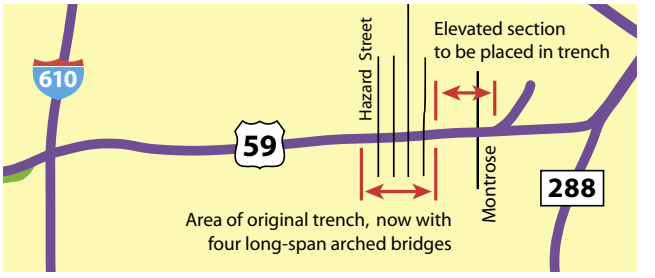
In 1981 the Southwest Freeway broke the 200,000-vehicle-per-day barrier at a point just outside Loop 610. Traffic continued to build during the 1980s with no funding available to make any improvements to the freeway. In 1989 work finally began on a major expansion project to make the full length of the freeway inside Loop 610 ten lanes wide, the section outside the loop to the Westpark curve twelve lanes wide, and the remaining section to Beltway 8 eight lanes wide. A barrier-separated transitway in the center of the freeway was also added. With the completion of the project in 1992, the Southwest Freeway was positioned to become Houston's traffic volume leader, overtaking the West Loop in 1993 and breaking the 300,000-vehicle-per-day barrier in 1996. Traffic volume was 337,000 vehicles per day in 2001 just outside Loop 610.

Expansion continued south from Beltway 8 in the mid-1990s. Plans were also being formulated to reconstruct the freeway near the downtown exit and add a transitway. Original plans called for the construction of

Braided ramps: This photograph just outside Beltway 8 of a section of freeway reconstructed in 2001 shows a frequently used design in Houston's current generation of freeways: the braided ramp. Braided ramps allow both entrance and exit ramps to be built at the same location and are particularly suited where there is limited distance between intersections. (Photo: November 2002)

an elevated structure above the existing elevated freeway lanes at Montrose Boulevard, prompting substantial protest from the surrounding neighborhoods. The final adopted plan called for the demolition of the 10-lane elevated freeway, with the expanded freeway including transitway lanes depressed into a new trench. Elevated freeways have been demolished in several places in the United States, including Fort Worth (Texas), San Francisco, and Boston. However, this appears to be the first case where an existing elevated freeway is removed and replaced with a trench at the same location. The new trench will feature the distinctive long-span arched bridges that were added during the

Excavation: This view dating from around 1960 shows the excavation for the depressed section of freeway near downtown. At the time, this excavation for the 10-lane freeway was the largest and most impressive construction project to occur on Houston's freeway system. (Photo: HMRC MSS 334-1153)

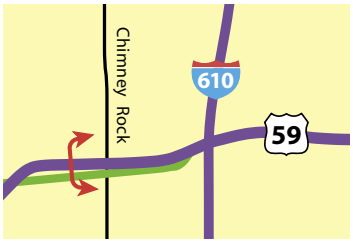


Houston's most appropriately named street: For 40 years Hazard Street was, in fact, one of Houston's most hazardous streets. The Hazard Street bridge over the Southwest Freeway had a clearance of only 13 feet, 11 inches (4.24 m) and was frequently the scene of collisions with oversize vehicles. The damage to the bridge structure (underneath the height signs) visible in the photo was not part of the demolition process—it was the result of collisions during the previous 40 years. The replacement span is an arched structure with improved vertical clearance. On August 12, 2000, the original bridge was demolished. (Photo: Chuck Fuhs)

Tropical Storm Allison:
When the storm hit in June 2001, it unleashed a major freeway flood event in Houston and filled the Southwest Freeway trench nearly to ground level. At that time, construction was in progress to widen the trench. Most motorists were able keep their vehicles out of the water, but the construction contractor, Williams Brothers Construction, wasn't so lucky. It lost 42 pieces of equipment, including 22 pieces of machinery (including large cranes, such as the one shown in the lower photo), 17 trucks, and 3 message boards. (Photos: Robert Cowart)

June 2005 Update: The northbound US 59 elevated structure was demolished in March 2004. Demolition of the southbound elevated structure, shown in the photo, was complete in May 2005. The entire project to replace the elevated freeway with a trenched freeway will be complete by the end of 2006

The Montrose elevated, 1961-2004:
The elevated structure in the photo will be demolished and replaced with a trenched freeway. The project, which began in late 2002, is perhaps the first instance in the United States of an elevated freeway being removed and replaced with a trenched facility at the same location. Elevated freeways in other cities have been relocated to new locations or placed in tunnels. The reconstructed freeway will have the same design as the adjacent section of freeway and will feature two more long-span arched bridges. (Photo: July 2002)



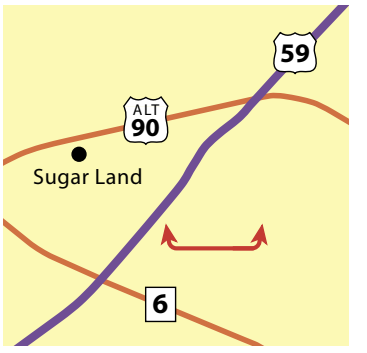
Houston's busiest freeway: The Southwest Freeway just outside Loop 610 is Houston's busiest freeway, with 337,000 vehicles per day in 2001. The reconstruction to its present configuration with 12 main freeway lanes was completed in 1992. At the right side of this photo, construction on the Westpark Tollway, an elevated structure at this location, is in progress. (Photo: September 2002)

reconstruction of the adjacent depressed section, completed in December 2002.

Efforts to designate a new Interstate 69 corridor from Indianapolis, Indiana, to the Texas-Mexico border also gained momentum in the 1990s and a study completed in 2000 identified options for the routing of Interstate 69 through Houston. Most of US 59 in Texas will ultimately be absorbed into Interstate 69, but it remains to be seen how US 59 in Houston will be affected.

Sharpstowns of the Future

Freeway history has a way of repeating itself. People still want suburban housing, and developers still want to make money. Further south along the Southwest Freeway in Sugar Land, the next big real estate development, First Colony, began to take shape in the late 1970s. Houston's second loop, Beltway 8, connected to the Southwest Freeway in 1988. Intensive development in and around Sugar Land in the 1980s and 1990s overwhelmed the freeway, and by the late 1990s the city of Sugar Land was doing everything possible to get the freeway widened. Whereas Frank Sharp brought land to the table, Sugar Land brought money. Major expansion in Sugar Land began in 2000 and was completed in May 2003. Further south along the freeway is the intersection with Houston's third loop, the Grand Parkway. The Sharpstowns of the future are a glimmer in the eye of land developers.



Sugar Land: The photos on the opposite page show the Southwest Freeway in Sugar Land, the suburban city named after the sugar mill that operated there from 1843 to 2002. The upper photo shows construction of the Southwest Freeway in 1970. The view shows the first major real estate development in Sugar Land, Venetian Estates, which included the finger lakes visible in the photo. The freeway opened in 1973. With the opening of the freeway, other large real estate developments followed. The lower photo, taken in 2000, shows the development which has occurred, including the Sugar Creek golf course community, which was developed shortly after the freeway opening. The large First Colony real estate development was launched in 1977 and other developments followed in the 1980s and 1990s. The extensive development necessitated the freeway expansion, which began in 2000 and was completed in May 2003. (Photos: The Positive Image)

Beltway interchange: This view looks southwest along the Southwest Freeway at the Beltway 8 interchange. This interchange was built in two phases, with the first completed in 1989 and the second completed in 1997. (Photo: May 2003)

Overarching style: This view looks west along the freeway with the Mandell overpass at the bottom. (Photo: May 2003)

South Freeway, SH 288

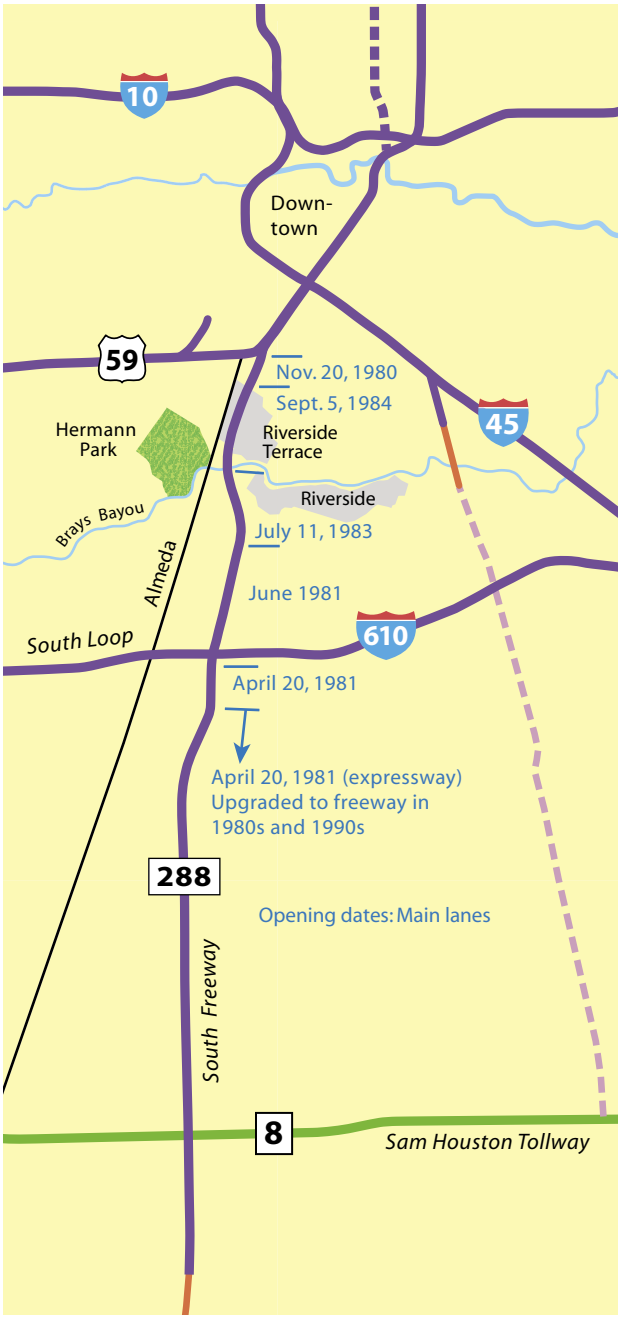
As Houston's freeway construction machine was running at full speed in the early 1960s, the highway engineers at the Houston TxDOT office may have had a song chiming in the back of their heads. As Frank Sinatra sang it: "The best is yet to come."

In the 1960s engineers watched as many of their new freeways became clogged with traffic only a few years after opening. These 6- and 8-lane freeways were hopelessly inadequate, and due to the limited right-of-way width of the freeway corridors, it would be difficult to expand these freeways to more than 10 main lanes. By the mid-1960s, TxDOT had a vision of the freeway of the future, and it could be best described by a saying that rings true especially in Texas: "Bigger is better."

Houston's highway engineers had studied freeway designs around the country. The Dan Ryan Expressway in Chicago, opened in 1962, was influential in the design of large freeways, and Houston's engineers paid particular attention to California. Houston had equaled California standards with the inner loop section of the Katy Freeway, which began construction in 1965. But the South Freeway would exceed anything California could offer and would propel Houston to the top in terms of freeway design. The South Freeway would be not just one freeway, but two freeways in one—a "dual freeway" with a regular freeway on the outside and a wide median for a future express freeway on the inside. The initial phase of the freeway would include only the outer section of the dual freeway. Nevertheless, this would be a highly impressive facility. The wide freeway right-of-way corridor required for the facility would make the South Freeway one of the most distinctive in the nation.[44]

But just as the South Freeway represented the vision of the freeway of the future, it would also be intertwined with perhaps the most dramatic story in the history of race relations in Houston. It's a story of integration, white flight, and urban transformation. And it's a story where the South Freeway would have the final word, at least in terms of ground zero for the events that would unfold over a 15-year period.

South Freeway	
Designated as freeway	1953
First freeway section open	1980
Freeway complete	1984 (expressway south of Loop 610)
Reconstruction	none
Max traffic volume, 2001	161,000 vehicles per day
Future construction	Freeway upgrades south of Beltway 8



Neighborhoods, Integration, and the Freeway

The Riverside Terrace neighborhood was initially developed in 1924 and included a selection of housing for the mid-range and affluent markets. Just to the south of Riverside Terrace on the south side of Brays Bayou was Riverside, an exclusive community including many estate homes that rivaled Houston's elite River Oaks neighborhood. Jews had been denied housing in River Oaks in that era, and many of Houston's wealthy and prominent Jewish families resided in Riverside. Riverside Terrace and Riverside were the heart of the Jewish community in Houston.

The year was 1952. Successful black cattleman Jack

Caesar was looking for a nice home to match his success, but found that his options were limited because blacks were restricted to black neighborhoods. He set his sights on a nice brick home on the south side of Houston in the Riverside Terrace neighborhood, but there was one problem—it was in a white area. Caesar arranged to have his white male secretary purchase the home. The home title was then transferred to Caesar. He and his family moved into the home in the middle of the night in 1952.

After Caesar moved into Riverside Terrace, there was unease among the white residents. However, Caesar and his family maintained a low profile, so the neighborhood residents generally adopted a "wait and see" attitude. That all changed in the early morning hours of April 17, 1953. A bomb consisting of four sticks of dynamite was exploded on Caesar's porch. The bomb blew out the windows and destroyed the porch area, but there were no injuries. The bomb seemed to be intended to frighten rather than to kill.

If the bomber had intended to frighten Caesar, it had exactly the opposite effect. Caesar would stay, and nervous whites began selling their homes. There was talk among white residents of formulating an agreement not to sell to blacks, but neighborhood transformation had begun and "white flight" was underway. As whites moved out, many of the homes on larger lots were torn down and replaced with low-quality apartments, many without air-conditioning. The predominantly black, low-income residents of the apartments were forced onto the street at all hours of the day and night in Houston's warm, humid climate. Homes along the main streets in the neighborhood were converted to businesses. The character of the neighborhood changed, accelerating white flight and sending the neighborhood into a downward spiral.

While this process was in progress, local planners were reexamining the alignment of the South Freeway. The original alignment along Almeda Road was shifted eastward in late 1959, sending it through the eastern end of Riverside Terrace. Jack Caesar's house would be in the path of the freeway.

Riverside Terrace would become nearly entirely black by the early 1960s. Residents of the exclusive Riverside neighborhood adjacent to Riverside Terrace felt that the bayou separating the two neighborhoods would be a barrier to further southward black migration, but by the mid-1960s white flight was in full progress in Riverside. Unscrupulous real estate agents fueled the fire by playing on the fears of white residents and actively soliciting sellers. Many of the white residents banded together to state their commitment to the community and their openness to an integrated neighborhood. These residents posted signs in their yards stating, "This is our home, it is not for sale," openly defying the real estate agents promoting white flight. It was a nice morale booster, but the transformation of the neighborhood continued. Black professionals, many of them professors at nearby Texas Southern University, took advantage of the collapsing real estate prices to move into the beautiful neighborhood. By the early 1970s the posh old homes along Brays Bayou were occupied almost entirely by blacks, with only "one or two" whites remaining, according to a real estate agent interviewed for a 1971 *Houston Chronicle* report. Riverside became to the black community what it formerly was to the Jewish community: the center and focus of the community's leaders and prominent citizens.[45]

Moved by the freeway: When Jack Caesar first moved into Riverside Terrace, he did it quietly in the middle of the night. His arrival launched the transformation of the neighborhood. But in the end, the South Freeway would have the final word. The home Caesar moved into, as well as many others, was displaced to make way for the freeway. (Photo: *Houston Chronicle*)

In the late 1960s right-of-clearance for the wide South Freeway corridor was underway. Jack Caesar's house was relocated to south Houston and occupied by another owner. For Houston it was perhaps a fitting end for the home that unleashed the storm—the freeway had the final word.

Origins

The South Freeway was part of Houston's original freeway plan formulated in the early 1950s and was included in the plan presented to the Texas Transportation Commission in July 1953. On September 23, 1953, TxDOT entered into an agreement with the city of Houston and Harris County to further the development of three proposed freeways, including SH 288 from downtown Houston southward to the Fort Bend County line—the South Freeway. In the agreement, TxDOT would define the freeway routes and pay for construction, while the city and the county were responsible for right-of-way

(Opposite page) **The freeway and ground zero:** This view shows the South Freeway corridor in June 1972, looking north. Right-of-way clearance had begun in the late 1960s and was nearly complete at the time of this photo. The location of Jack Caesar's house at the southeast corner of Wichita and Hutchins is indicated in red, and is now approximately in the center of the freeway. Caesar's house became a flash point for racial integration in Houston in 1952 when Caesar and his family became the first blacks to move into the all-white, heavily Jewish Riverside Terrace neighborhood. In April 1953, a bomb exploded on Caesar's front porch. The bomb caused only minor property damage and no injuries, but it launched full-scale white flight from the Riverside Terrace neighborhood. (Photo: The Positive Image)

acquisition. The South Freeway first appeared on the city of Houston's *Major Thoroughfare and Freeway Plan* in 1955. The original alignment showed the freeway following Almeda Road southward out of downtown, veering west of Almeda Road just north of Loop 610, and then rejoining Almeda Road near Beltway 8.[46]

In the 1950s planning efforts were focused on Houston's more rapidly growing areas and the freeways serving those areas, especially the Southwest Freeway and the West Loop. The South Freeway corridor was largely rural and devoid of any significant population, so it took lower priority. Little—if any—work had been done on the South Freeway when in March 1959 City Planning Director Ralph Ellifrit proposed an eastward realignment of the freeway. The main reason for the re-alignment was to shift the freeway closer to the Gulf Freeway to relieve some of its traffic. The new alignment would also avoid an oil field, prevent the need to displace either a hospital or a biscuit factory on Almeda Road, traverse less-developed land, and be situated closer to development in southeast Houston. Ellifrit's alignment still used Almeda Road for most of the route inside Loop 610. Near Old Spanish Trail it veered east from Almeda Road rather than west.[47]

On May 22, 1959, TxDOT authorized a full restudy of the South Freeway alignment. In late 1959, the South Freeway relocation study was complete and recommended a new alignment entirely to the east of Almeda Road. This would become the final freeway alignment with only slight modifications. On August 14, 1963, TxDOT held the first public meeting for the freeway alignment. The *Houston Post* reported that "protests were negligible," with most comments coming from landowners in the south part of the corridor. The newspaper report mentioned only one homeowner who spoke up at the meeting, and apparently the subject of impacts on the Riverside Terrace neighborhood never arose. The public also got its first glimpse of the big plans for the freeway at the 1963 meeting. The schematics on display showed the eight-lane freeway and its wide center median. A second meeting was held on July 21, 1965.[48]

The full details of the proposed freeway design were presented at a public hearing on January 27, 1966. The head of the TxDOT Houston Urban Project Office, A. C. Kyser, provided a summary of the design from downtown to south of Loop 610. The freeway would be a dual freeway, which meant that TxDOT would be putting "two freeways on one right-of-way." On the outside would be a regular 8-lane freeway with entrance and exit ramps. A

Alignment shift: This view from the city of Houston's 1959 *Major Thoroughfare and Freeway Plan* shows the original alignment of the South Freeway, highlighted in yellow. The original alignment was along and west of Almeda Road. The revised alignment, shown in red, was defined in a special study completed in late 1959. The South Freeway is Houston's only freeway to sustain a major realignment. (Map: HMRC)

Freeway construction in slow motion: This September 1976 photo shows the cleared right-of-way corridor north of Brays Bayou. Right-of-way clearance began in the late 1960s and was complete by 1972, but the corridor sat vacant for more than five years due to funding shortfalls at TxDOT. The existence of such a wide corridor of clear land so close to the central business district for most of the 1970s was a remarkable novelty and is something that will probably never again be seen in any city in the United States in the context of freeway construction. (Photo: Chuck Fuhs)

new feature of this freeway would be the numerous "criss-cross" entry and entrance ramps, where one ramp would be constructed over the other, a design which is now called a braided ramp. On the inside would be a 6-lane express freeway with no entrance or exit ramps between Loop 610 and downtown. The entire freeway, inside and outside, would be depressed below grade for nearly its entire 4.7-mile (7.5 km) length inside Loop 610. The initial phase would construct the 8-lane outer freeway, leaving a wide median for the future inner freeway. But with the space reserved for the inner freeway, the design would accommodate a freeway with 14 main lanes. "This freeway is being designed, as far as ultimate capacity, [to] probably exceed the capacity of any freeway I know of, anywhere," said Kyser.[49]

"This freeway is being designed, as far as ultimate capacity, [to] probably exceed the capacity of any freeway I know of, anywhere."

TxDOT Houston Urban Project Office head A. C. Kyser, at the public meeting for the design of the South Freeway, January 27, 1966

Building the Freeway

If there was one thing an observer would notice about the plans for this freeway, it was its width. The right-of-way corridor would be approximately 500 feet (152 m) wide. At the January 1966 public meeting Kyser stated that the right-of-way cost for the freeway was estimated at $12 million, and the cost of actual construction for the large freeway was estimated at $10 million. Purchasing and clearing the right-of-way for the freeway was expected to cost more than the freeway construction itself. Kyser reported that right-of-way had already been acquired for the southern section. The real challenge in terms of right-of-way would be the northern half, which traversed through the Riverside Terrace neighborhood.

A key event in the construction of the freeway was the passage of a Harris County bond referendum on January 29, 1966. The bond issue provided funds for the county's 50% portion of the right-of-way acquisition cost. Without passage of the proposition, the project would not have been able to move forward, and any delay may have had unknown consequences for the future of the freeway. The window of opportunity for building large freeways through inner-city neighborhoods was rapidly closing, not just in Houston but nationwide. New policies would soon take effect and the political environment would soon

Construction finally gets underway: After a delay that lasted for much of the 1970s, construction of the South Freeway was finally making progress by the late 1970s, as shown by this May 1978 photo. (Photo: TxDOT)

change to be much less favorable to this type of freeway. A two-thirds majority was needed to approve the bonds, and voters passed the proposition with 72% of the vote. The South Freeway project would proceed.

The right-of-way clearance for the north section of the South Freeway and adjacent section of US 59 was one of the largest right-of-way clearance events in the history of Houston's freeways. It took place over approximately five years from the late 1960s to the early 1970s. The final environmental impact statement (EIS) for the South Freeway, completed in 1974, reported that 295 families were displaced for the South Freeway. But the EIS also reported that "a large majority [of those displaced] agreed that they now have equal or better facilities than they had before displacement." The transition from neighborhood to freeway is not always an orderly process, especially when the process plays out over many years, as was the case for the South Freeway corridor. The scene can take on a surreal look, with some houses still standing among vacant lots, houses in various states of demolition, and piles of rubble scattered about. The South Freeway right-of-way clearance spawned small industries in salvage, demolition, and relocation as it reached its peak around 1970. Scavengers sifted through the remains of buildings looking for valuable materials or collectibles. Transients occupied abandoned buildings. The scene generated a unique ecology as the forces of displacement played out.[50]

By 1972 the right-of-way for the South Freeway was clear from downtown to Brays Bayou. In the past, right-of-way clearance was promptly followed by freeway construction, but in the budget-constrained 1970s work would proceed much more slowly. For several years the wide right-of-way stood vacant, a remarkable novelty in a close-in urban area and a scene that will likely never again be seen in a major urban area in the context of freeway construction. A well-known example of a similar situation took place on the corridor for the Century Freeway (IH 105) in Los Angeles, which is about 7 miles (11 km) south of downtown Los Angeles. The 18-mile (29 km) Century Freeway corridor stood vacant for years as the California

Complete: The final section of the South Freeway was formally opened on September 5, 1984, with a ribbon cutting ceremony. Holding the ceremonial scissors is Bob Lanier, who was chairman of the Texas Transportation Commission at the time and would later serve as mayor of Houston from 1992 to 1998. Also participating in the ribbon cutting are representatives from the Houston Citizens Chamber of Commerce. From left to right are Al Calloway, president; Lanier; Lorene Lancelin; and Ernest Clauser. Clauser is holding a certificate conferring the "Road Hand Award" to him. The Road Hand Award recognizes individuals whose efforts promote Houston-area road projects. (Photo: HMRC RGD6).

Department of Transportation dealt with financial problems and litigation. In 1975 the *Los Angeles Times* described the right-of-way strip as "largely a wasteland." The Century Freeway would not be completed until 1993. Right-of-way corridors cleared for freeways that were never built still exist in a few places around the United States, but in terms of its sheer width and closeness to the urban center, the South Freeway corridor was perhaps the most distinctive.[51]

Finally, on September 22, 1975, a ground breaking ceremony was held for the first actual construction on the South Freeway—the frontage roads at Brays Bayou. The first section of main lanes, a short segment just south of the US 59 interchange, opened in November 1980. The four-lane divided highway south of Loop 610 opened on April 20, 1981. Inside Loop 610 work proceeded slowly on small segments. A section of freeway immediately north of Loop 610 was completed in June 1981, and the previously completed interchange at Loop 610 was fully opened to traffic. On July 11, 1983, a section of freeway from Brays Bayou to Yellowstone, just south of Old Spanish Trail, was opened, providing a continuous facility from downtown southward. However, traffic still had to use the

Key dates in the history of the South Freeway

1953	The South Freeway is proposed as part of Houston's freeway master plan.
1959	The South Freeway is realigned.
1963	Plans are unveiled for the dual freeway design.
1968-1972	Right-of-way is cleared through Riverside Terrace.
1975	Construction begins.
1984	The freeway is completed, but is only an expressway south of Loop 610.
1980s, 1990s	Expressway sections south of Loop 610 are upgraded to full freeway status.

June 2005 Update: The future plan for improvement of SH 288 was announced in November 2004. Four "managed lanes" for high occupancy vehicles and toll-paying single occupant vehicles will be built in the freeway median from downtown to the Grand Parkway. Three general-purpose freeway lanes in each direction will be provided from Beltway 8 to SH 6. Existing freeway lane counts will be retained elsewhere.

Room for the interior freeway: This view shows the South Freeway as it passes through the Riverside Terrace area. The South Freeway is depressed below grade for nearly its entire length inside Loop 610. The wide median is reserved for future express freeway lanes which are part of the "dual freeway" design developed for the freeway in the early 1960s. It remains to be seen if the interior freeway lanes will ever be constructed. As of 2003, there appeared to be no need for the interior freeway based on long-range demand estimates. The downtown freeway interchange complex may not be capable of handling the additional vehicles that the interior freeway would deliver. (Photo: James Lyle, TTI, June 2001)

frontage roads for a one-mile (1.6 km) section north of Brays Bayou. The closure of this last gap took place on September 5, 1984, and the freeway was complete. The expressway south of Loop 610 was upgraded to freeway standards in the 1980s and 1990s.

On its completion, the South Freeway appeared to be the last, all-new inner-city freeway to be constructed in Houston. It was an impressive facility. Even though only the eight-lane outer freeway was constructed, the wide center median reserved for the future inner freeway and high design standards distinguished the South Freeway as one of the best in the nation. In 2000, plans were formulated to extend the Hardy Toll Road inside Loop 610 as a toll-free facility with an estimated completion date of 2007, adding one final new freeway inside Loop 610.

Expansions of the North Freeway and the Eastex Freeway in the 1990s increased the corridor widths of those freeways to the range of 350–400 feet (107–122 m). The planned expansion of the Katy Freeway will have a corridor width averaging 475 feet (145 m) between Loop 610 and Beltway 8. With its right-of-way typically 500 feet (152 m) wide, the South Freeway will still reign as the widest freeway corridor in Houston and will probably never be dethroned.

Perhaps the most interesting question to ponder is the future of the wide freeway median. Will the inner freeway ever be built? As of 2003, TxDOT had no plans—not even long term—to construct the inner freeway. Although the South Freeway corridor has been slow to urbanize, development has accelerated in recent years, prompting TxDOT to initiate a corridor feasibility study in 2003 to determine future improvements to meet the transportation needs of the corridor. The South Freeway inner freeway is also included on a list of potential toll corridors to be considered by the Harris County Toll Road Authority. Only time will tell if the freeway demand will support the extra capacity of an inner freeway or tollway. If and when the need ever arises, Kyser's dual freeway design will have the potential to "exceed the capacity of any freeway, anywhere."

No frontage roads: The South Freeway is the only freeway in Houston constructed without frontage roads for most of its length. (Photo: September 2002)

Lake 288: This view shows the South Freeway after Tropical Storm Allison in June 2001. In its early years the South Freeway was susceptible to flooding caused by water from Brays Bayou backing up into the freeway drainage system. Modifications to the drainage system and more powerful pumps alleviated most flooding but were not enough to prevent flooding during Allison. (Photo: Jonathan Miller)

The freeway beginning: This view shows the start of the South Freeway at its interchange with US 59 just south of downtown. The South Freeway branches to the left, and the Southwest Freeway branches to the right. This interchange normally has a backup of vehicles trying to get on the Southwest Freeway, as this photo shows, but motorists typically face no delays as they enter the South Freeway. This interchange was completed on November 20, 1980. The Southwest Freeway through this location opened in 1974. (Photo: May 2003)

La Porte Freeway, SH 225

The La Porte Freeway has earned itself a unique distinction among Houston's freeways. It is the only freeway in the region that has sustained a permanent cancellation within the city of Houston. The most notable feature of the La Porte Freeway is its abrupt end just inside Loop 610, where the freeway was truncated. The dramatic freeway end serves as a fitting monument to the cancelled freeway. It is also a monument to one man who relentlessly fought the freeway and ultimately succeeded in doing what no one else had done before in Houston—and no one else has done since.

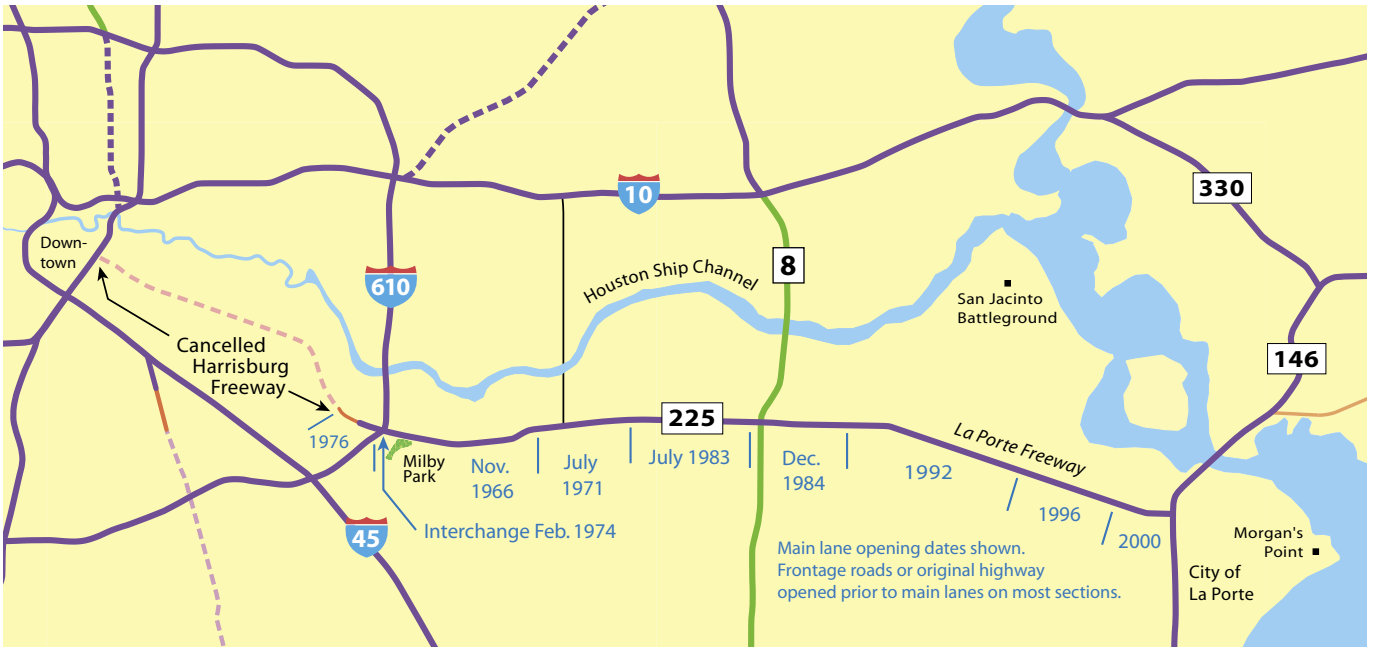
The story of the La Porte Freeway has deep roots, with its origins going back to the 19th century. In 2000, more than 100 years after the La Porte Freeway corridor was first used for transportation, construction on the freeway was finally completed. Unlike other Houston freeways, the La Porte Freeway is largely devoid of strip shopping centers or any kind of commercial development. Instead, the freeway is lined with petrochemical plants and refineries, providing an impressive industrial landscape of catalytic crackers, distillation towers, and tank farms.

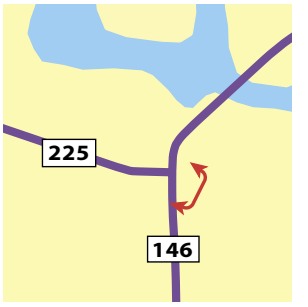
La Porte Freeway	
Designated as freeway	1953
First freeway section open	1966
Freeway complete	2000
Reconstruction	none
Max traffic volume, 2001	141,000 vehicles per day
Future construction	None planned

The La Porte Freeway

The development of the La Porte Freeway has been a slow evolution over a century. The route started out as a dirt road that generally followed the railroad corridor from La Porte to Houston, which opened in 1894. By 1907 the route was paved with crushed rock from Houston to approximately today's Beltway 8. Sylvan Beach Park on Galveston Bay in La Porte was a popular destination for Houstonians, and there was increasing interest in extending the paved section all the way to La Porte to provide reliable automobile access to the park. In 1910 paving to La Porte was completed with a shell surface. The road followed the alignment of the present-day freeway to about one mile (1.6 km) west of today's SH 146, where it veered south.[52]

On November 5, 1927, a concrete road on much of today's freeway alignment was dedicated and designated as the La Porte-Houston Highway. The new concrete road was extended eastward where the previous shell road veered south, so the 1927 roadway defined today's freeway alignment for the full length of the corridor all the way to SH 146. It was probably no coincidence that Ross Sterling's mansion was completed the same year at Morgan's Point, which is just east of the eastern terminus of the highway. Ross Sterling was one of Houston's wealthiest and most politically influential citizens. In 1909 he founded Humble Oil, the predecessor to ExxonMobil, the world's largest corporation in 2001 and second largest in 2002. He sold his interests in Humble Oil and purchased the *Houston Post* newspaper in 1925. In 1926 he purchased the *Houston Dispatch* newspaper and then merged it with the *Houston Post*. Sterling was appointed chairman of the Texas Transportation Commission in February 1927 and served in that position until he became





The first three-level interchange in Texas: The interchange at the eastern terminus of the La Porte Freeway at SH 146 was the first three-level traffic separation on the Texas state highway system when it was completed in 1953. TxDOT officials in Austin were initially hesitant to approve the three-level design because they felt that traffic volumes did not justify the "elaborate installation" and that it was being urged for its novelty. But it was approved, and within a few years three- and four-level interchanges would become common. Texas still had some catching up to do in 1953: that same year, California completed the four-level stack interchange at the intersection of the Harbor-Pasadena and Hollywood Freeways.[53] (Photo: TxDOT)

governor of Texas in 1930. For many years the highway was known as the Ross Sterling Highway.[54]

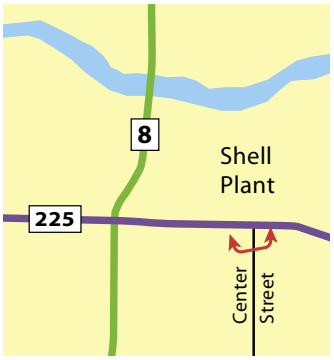
The freeway era for the La Porte Highway began in May 1945 when the first section of freeway immediately east of the Gulf Freeway was authorized by the Texas Transportation Commission. The section of freeway was called the La Porte cutoff and connected the existing La Porte Highway to the Gulf Freeway. It opened in 1952 and would later be absorbed into the south Loop 610. Today's La Porte Freeway from the east Loop 610 to SH 146 was authorized by the Texas Transportation Commission on September 18, 1953, as part of the proposed freeway system that Houston officials had presented to the commission in July 1953.[55]

The first major construction on the present-day La Porte Freeway occurred in conjunction with the Baytown Tunnel on SH 146, which opened on September 22, 1953. SH 225 intersected SH 146 just south of the tunnel, and an interchange was completed in late 1953 to provide access to the tunnel. The interchange featured the first three-level traffic separation on the state highway system in Texas. Texas still had some catching up to do in terms of multi-level interchange design, since Los Angeles completed its first four-level stack interchange at the intersection of the Harbor-Pasadena and Hollywood Freeways in the same year.[56]

As authorities worked to define the exact alignment of the freeway in the late 1950s, they ran into a problem. At the time, the biggest risk to the alignment of freeways was parkland. In particular, many of Houston's large parks, including Memorial, Hermann, and Macgregor, had been donated to the city of Houston, and the terms of donation often included "reverter clauses," which stated that the land would revert to the original owner if it was not used as parkland. The La Porte Freeway would need to cut through the 74-acre Milby Park, which had been donated to the city of Houston by Charles W. Milby in 1937. Included in the terms of the parkland donation was a stipulation that no facilities for anything except specific park purposes could ever be constructed or used on the park site, or the park site itself would revert to the donor

An impressive industrial landscape: The La Porte Freeway passes through one of the densest concentrations of refineries and petrochemical plants in the United States. Approximately 13.2% of the nation's refining capacity and nearly 50% of the nation's base petrochemical manufacturing capacity is located in the Houston area. This view shows the La Porte Freeway crossing through a tank farm just east of Loop 610. Completed in 1966, this was the first section of the freeway opened to traffic. (Photo: September 2002)

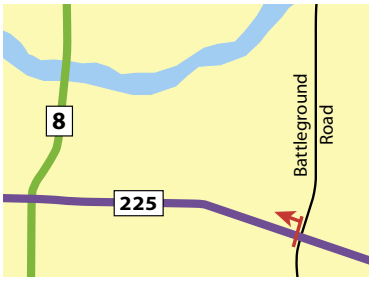
(Opposite page) **Pre-freeway and modern SH 225:** The upper photograph from 1951 shows SH 225 at the Shell petrochemical plant, which is just east of Beltway 8. The freeway would later be built on the strip of land between the industrial plant and the two-lane highway, as shown in the lower photo. The freeway main lanes were completed in 1992. Work on the Shell refinery in Deer Park began in 1928 when the first team of engineers arrived from Illinois and set up offices in an abandoned schoolhouse on SH 225. In August 1929 the Shell refinery was operational. The above photo shows the Shell chemical plant, which produced its first product in September 1941, just in time to fill World War II demand for high-octane aviation fuel, toluene, and synthetic rubber. (Photos: upper, Shell Oil; lower, September 2002)



or his heirs.[57]

Original plans for the La Porte Freeway showed its alignment severing the park, using 6.5 acres for the freeway and isolating another 10 acres north of the freeway. In 1958, the city of Houston reviewed the legal implications of right-of-way acquisition through the park and determined that it could not sell or transfer the right-of-way. In order to minimize the impact on the park, the alignment of the La Porte Freeway was shifted northward along the edge of the park, reducing the impact to only 8 acres. Because the city would not sell the property, TxDOT obtained it through condemnation proceedings in 1960, clearing the way for the freeway. The daughter of the park donor then sued the city of Houston, arguing that the parkland should be returned to the estate of the donor since the terms of the original agreement had been violated. In August 1961, a court ruled that the Milby estate was not entitled to reclaim the remainder of the park.[58]

Another difficulty in the construction of the La Porte Freeway through Pasadena was the relocation of the railroad that was situated along the western half of the corridor. Harris County and the Port of Houston entered into an agreement to relocate the tracks in October 1958, and the Texas Transportation Commission authorized TxDOT financial participation in the relocation in November 1959. From just east of Loop 610 to just east of Beltway 8, a 7.5-mile (12 km) section of railroad was relocated about 0.5 mile (0.8 km) north. The actual track relocation



Finishing the freeway: The final push to complete the La Porte Freeway occurred in the 1990s. This view looks west from the Battleground Road overpass. This section was completed in 1992. The full La Porte Freeway was completed in 2000. (Photo: July 2002)

proceeded with no difficulty, but litigation ensued and was not cleared up until 1967.[59]

By 1964 construction on the freeway could begin. In November 1966 the first 2.5-mile (4 km) freeway section opened from Loop 610 eastward. Other sections subsequently opened, pushing the freeway eastward through the central part of Pasadena to east of Red Bluff Road by July 1971. Then the freeway went into hibernation due to the 1970s highway funding crisis. Work resumed in the early 1980s, pushing the freeway east of Beltway 8 by 1984. The freeway then went into hibernation once again. In the early 1990s the final push began to complete the freeway. Three sections opened during the 1990s, culminating with a new interchange at SH 146 in 2000 that completed the freeway. Forty-seven years after the official freeway designation in 1953, the La Porte Freeway was finished. The next phase of improvements for the La Porte Freeway will be defined in a corridor study scheduled to begin in 2003.

The La Porte Freeway traverses through an impressive industrial landscape of petrochemical plants and refineries. Call it ugly or call it beautiful, it is certainly a distinctive stretch of freeway. The La Porte Freeway is generally free of traffic congestion, a rare distinction in Houston. But the freeway has a more dubious distinction—the part that wasn't built.

Key dates in the history of the La Porte Freeway

1894	Railroad tracks are constructed on the La Porte Freeway corridor.
1927	The La Porte-Houston highway, most of which became the La Porte Freeway, was paved with concrete.
1952	The La Porte cutoff on the Gulf Freeway is completed. It later becomes part of Loop 610.
1953	The La Porte Freeway is proposed as part of Houston's freeway master plan and officially designated as a freeway by TxDOT.
1966	The first section of freeway opens.
2000	The freeway is completed.

Harrisburg Freeway

The Harrisburg Freeway had its origins in the 1960 traffic and transportation study for the Houston area. The study recommended the addition of two new freeways, the extension of the La Porte Freeway from Loop 610 to downtown and the southward extension of the West Loop. In August 1961, the Houston City Planning Commission officially delivered its recommendation for the new freeways in a report called *Freeway Phase*. The recommendation explained that the traffic study found "a demand on the Gulf Freeway far beyond its reasonable capacity

The planned alignment: This November 1971 map from the *Houston-Harris County Transportation Plan, Volume 3* (1971) shows the planned alignment of the Harrisburg Freeway. The unbuilt section is indicated with the pink highlight. This alignment is identical to the originally proposed 1964 alignment and the final alignment recommended in January 1973.

due to the large area it must serve and the tributary nature of the La Porte Freeway." In a December 1963 letter to TxDOT, city of Houston department heads wrote, "It is our opinion that the most effective measure for the immediate relief of the traffic overload in the southeast corridor would require the extension of the La Porte Freeway westerly, in the vicinity of Harrisburg Boulevard, to the Central Business District Loop (US 59)." The La Porte Freeway extension would become known as the Harrisburg Freeway since it generally followed the alignment of Harrisburg Boulevard.[60]

The local officials then needed to persuade TxDOT to add the new freeway section to the state highway system. In January 1962 TxDOT agreed to provide interchanges at the intersections of the Harrisburg Freeway with US 59 downtown and Loop 610. On March 31, 1964, Houston Mayor Louie Welch led a Houston delegation that made a presentation to the Texas Transportation Commission in Austin to request the inclusion of the freeway segment into the state highway system. The Texas Transportation Commission did not grant Houston's request. In November 1964, A. C. Kyser, head of the TxDOT Houston Urban Project Office, reported that the Harrisburg Freeway was "just a line on a map and a report" and said the Texas Transportation Commission had not yet reviewed the project. An effort had been made to include the route in the federal Interstate Highway System, but that request had been rejected by the U.S. Bureau of Public Roads. The project was at least six to eight years in the future because TxDOT was overcommitted for work on the state highway network.[61]

Saying No to the Freeway

Richard Holgin was born just north of downtown Houston in the area then known as the Fifth Ward. He moved to the Magnolia neighborhood east of downtown near Harrisburg Road as a child and attended the local public schools. Nearly all of his extended family, which included about 100 cousins, aunts, and uncles, lived in the east side neighborhoods along the proposed freeway path. He purchased his home in 1958 on Rusk Street, two blocks south of Harrisburg Boulevard, and started a family.

One day in the early 1960s, Holgin first heard rumors that a new freeway was planned for the Harrisburg corridor. Holgin immediately became concerned. Just around that time, the right-of-way clearance for IH 10 was cutting

Ramp to a dead end: This view along Loop 610 at the SH 225 interchange shows the exit and high-level connection ramp to SH 225 west, the planned Harrisburg Freeway. The freeway comes to a dead end just after the ramp returns back to ground level. (Photo: May 2002)

a path through the predominantly Hispanic neighborhoods just north of downtown, near the neighborhood where he was born. Would the east end neighborhoods, a developing Hispanic area, be destined for the same fate? Holgin set out to find some answers. He started by contacting the city of Houston, but soon found that the city was just one player in Houston's freeway construction machine, and the city couldn't or wouldn't answer his questions. So he tried contacting TxDOT, and then Harris County. Still, he couldn't get the information he wanted. The freeway was a "done deal," he was told, and it was best that he get out of the way. It seemed there was no place to focus a coordinated effort to stop the freeway. Holgin and the neighborhood were forced into an apprehensive wait-and-see situation for the rest of the 1960s.[62]

But luck would be on Holgin's side. In spite of the efforts of the city of Houston and Harris County, the Harrisburg Freeway had not been adopted into the state highway system by TxDOT. The city of Houston, Harris County, and TxDOT were all overwhelmed by the huge task of acquiring right-of-way and building the approved freeways in the 1960s, so the Harrisburg Freeway was put on the back burner and remained just a line on the map.

By 1969, when the 1960s freeway construction binge was winding down, TxDOT was in a better position to add new freeways to the state highway system. The Texas Transportation Commission formally accepted the Harrisburg Freeway on April 2, 1969, just in time, it seemed, for the harsh new freeway climate that was developing. On January 1, 1970, President Nixon signed the National Environmental Policy Act of 1969 (NEPA) into law. NEPA and provisions of the 1968 and 1970 Federal-Aid Highway Acts had dramatically changed the way freeways were planned. TxDOT would now have to prepare an environmental impact statement and provide a comprehensive public hearing process. The Harrisburg Freeway would be the first in Houston to go through the new planning process.[63]

The freeway was coming back to life, and Richard Holgin was ready for it. He was determined to do everything he could to stop the freeway, and he was now empowered by NEPA and other new regulations that gave communities a large voice in the process. With his bachelor's degree in business administration from the University of Houston, Holgin was one of the few college-educated Hispanics in the mostly blue-collar area. He was the ideal person to bridge the divide between the Spanish-speaking community and the freeway construction establishment. Leading the opposition effort provided Holgin with an opportunity to work at the grassroots level, improve his visibility, and build name recognition in the community. It was a perfect opportunity for a political launch pad. His opposition to the freeway and political aspirations turned out to be a perfect match. Whatever his greater motivation was, he brought dedication and passion to the anti-freeway effort.

Holgin knew very little about freeway construction and the newly adopted freeway planning processes required by NEPA. He found an ally and consultant in Alfred Davey, a private planning consultant who knew the ins

A monument to the cancelled freeway: This view shows the dramatic end of the La Porte Freeway just inside Loop 610. The main lanes come to an abrupt halt, and the frontage roads continue a little further until they dead-end at Lawndale Avenue. If the La Porte Freeway extension had been constructed, it would have continued to downtown Houston in the distance. The project was in serious trouble by 1973, and by 1976 the highway funding crisis effectively put the nails in the coffin of the freeway. (Photo: May 2002)

and outs of the planning process. With advice and counsel from Davey, Holgin gained the knowledge to work in the system and deal with city and state officials. Holgin and the five or six community members who actively opposed the freeway designated themselves as the La Porte Freeway Extension Information Committee.

The first public meeting for the Harrisburg Freeway was held in March 1970. There was considerable support for the freeway, especially among the local business establishment. Most residents were more interested in knowing if and when they needed to move, rather than opposing the freeway. But Holgin felt certain that there was opposition to the freeway, especially in the Hispanic community. He needed to inform the neighborhood that the world had changed. It was now possible to stop a freeway.[64]

After that first public meeting, Holgin and Davey met one day with their cameras in hand to take a tour of the neighborhood. They followed the proposed freeway corridor and took photographs of homes and businesses that would be displaced. Holgin then arranged a community meeting for May 1970, which was held at a neighborhood community center called the Ripley House. The TxDOT representatives used their allotted 15 minutes to give a brief overview of the project. Then, for the next hour

Anti-freeway crusader: Richard Holgin stands along Harrisburg Boulevard in May 2002. If the project had moved forward, the 400-foot-wide (122 m) freeway corridor would have been constructed in the area behind him. Today, the neighborhoods along the corridor are mostly low-income. The neighborhood has not been revitalized like many close-in urban areas in Houston, but retains its modest houses and scattering of businesses that serve a predominantly Hispanic and immigrant population.

and 45 minutes, Holgin's supporters presented the anti-freeway case. To start their program, Holgin and Davey presented the audience with a slide show of the properties along the freeway path. Barbara Streisand's "People" ("people who need people") was used as background music. As one slide after another was shown, the impact of the freeway registered with the audience. It became more poignantly clear that their homes, friends, and neighbors would be displaced. It was an emotional appeal, and it worked. Holgin was unlocking the latent opposition that he knew existed. Also at the meeting, Davey presented a plan he had developed for an alternative freeway alignment along the Houston Ship Channel which did not impact the neighborhood. If TxDOT wasn't yet aware that this freeway controversy would be different from ones in the past, then Holgin's first meeting—which became known as the "Ripley House meeting"—was certainly an eye-opener.[65]

In July 1970 TxDOT launched its official study with a multidisciplinary team. This was something entirely new for TxDOT. Previously, plans and alignments for Houston's freeways had been determined by engineers and local political authorities who generally took the most direct or least expensive routes. But now, with the National Environmental Policy Act in force, selecting an alignment for the freeway would be a much more complex process. The multidisciplinary team was appointed in July 1970 to study the route and recommend an alignment, taking into consideration the social, economic, environmental, and physical implications of the project. The team included an urban sociologist, an economist, a landscape architect, an urban planner, a public information specialist, and the usual staff of designers and engineers. A team member noted that they had "never been involved in anything like this" and the length of the study was uncertain because there was "no history of this type of undertaking."[66]

Included in the multidisciplinary team was TxDOT project engineer Dexter Jones. Like Holgin, Jones had deep roots in the Harrisburg community, having been born there and having several immediate family members, including his grandmother, still living in the area. More than anyone else on the study team, Jones had a personal passion about getting the freeway built. Jones believed that the only way to reverse the decline that was afflicting the Harrisburg area was to build the freeway. The narrow streets and general inaccessibility of the area had choked off investment. The freeway, he believed, wasn't just about moving cars. It was about saving the community he knew so well by making it more attractive to businesses and homeowners. Jones and Holgin both shared a common goal of revitalizing the Harrisburg area, but were at opposite ends of the spectrum about how to achieve the goal. The stage was set for a battle that would play out over the next three years.[67]

Six months later in January 1971, everything seemed to be going well for TxDOT. The study's progress report stated, "With the exception of the La Porte Freeway Extension Information Committee, all of the civic groups and virtually all of the private citizens who have contacted the team have expressed a pressing need for a freeway to serve the Harrisburg area." During this period Holgin contacted the Federal Highway Administration in Washington, D.C., and discovered that the person monitoring the Harrisburg Freeway study held the belief that there was no opposition to the freeway. Holgin still had work to do.[68]

In early 1971 events began to work in Holgin's favor.

In February Houston Mayor Louie Welch proposed to make the freeway a tollway in order to get it constructed more quickly. The proposal was dismissed almost immediately by everyone involved in the process, and it invigorated opposition to the freeway. Many in the blue-collar neighborhoods along the freeway were already ambivalent about having a freeway in their backyards, but they became incensed about the possibility of being forced to pay to use it. At a February 1971 public information meeting, Holgin found that his organization was no longer alone in its battle against the freeway. An organization called Response in City Hall, or RICH, turned out a large contingent of people to oppose the alignment through the neighborhood and support an alignment along the Houston Ship Channel and Buffalo Bayou. RICH had collected thousands of signatures on a petition opposing the toll road proposal. The president of RICH, Jerry McGee, was skeptical of TxDOT's study and stated that TxDOT was "coming into my community not to consult, but to brainwash." Regarding TxDOT's statement that the bayou route was being considered, Holgin shared McGee's skepticism, stating, "I think they're saying that to pacify people." Another organization, the Urban Bunch, a group of architects and planners, was expressing concerns about bringing more traffic into the center of the city.[69]

Dexter Jones was still confident of the ultimate success of the freeway project. At the meeting he stated, "The freeway is necessary and it will be built." He then paused while the statement was translated into Spanish. "We don't know how, where, or when, but it will be built."[70]

Holgin had renamed his organization the East End Preservation and Development Association, a name which better conveyed Holgin's broader goals for the area. In April 1971 he organized a meeting featuring United States Congress Representative Bob Eckhardt, a Democrat who favored environmental and neighborhood causes. Holgin and his group vented their frustrations to Eckhardt, stating their belief that they were not being heard by the TxDOT study team. Following the meeting, Eckhardt stated, "I feel the freeway should go [along the ship channel], and not through a residential area."[71]

In 1972 Holgin made a run for political office. His effort to seek the office of state representative fell short, as he lost to Ben Reyes, who would go on to larger prominence in Houston politics. Reyes was convicted of bribery, conspiracy and mail fraud in 1998 and was sentenced to nine years in prison. Holgin's political run was unsuccessful, but the freeway fight would go on.

By the summer of 1972 the list of potential alignments had been reduced to two options: the Harrisburg Boulevard route and the ship channel route. In January 1973 the recommended alignment was announced. The freeway would take the Harrisburg route. And in the end, the study team recommended what it knew best—a state-of-the-art freeway facility with a 400-foot-wide (122 m) right-of-way and main lanes depressed below grade to minimize impacts to the surrounding area.[72]

The environmental impact statement (EIS) reported that 1,244 residential units, including 617 single family residences, would be displaced, affecting approximately 4,000 people. In addition, 47 industrial buildings, 40 commercial buildings, 2 churches, 2 Masonic lodges and 2 fire stations were in the path of the freeway. The EIS reported, "The project as recommended will avoid any disruption or division of established communities." The team's rationale for making that statement was that the freeway followed a corridor that "constituted a long-established boundary between two communities that have distinctly different characteristics." This boundary had been recognized by other agencies, including the city of Houston and its Model Cities Department. To Holgin, that statement was nonsense. He felt the freeway would destroy the neighborhood, and he continued his efforts to stop or delay the freeway. He appeared at the meeting of the Houston-Galveston Area Council, the regional planning organization that approved all transportation plans, and appealed to the council to delay approval, saying that the freeway would "destroy a developing Mexican-American community." Looking back on that meeting, Holgin knew that the outcome of the council vote was never in doubt. "It was a matter of rubber stamping the process. It was a good old buddy system." The council approved the freeway alignment.[73]

Holgin had, however, received some encouraging news in this period. His sources at TxDOT were telling him about TxDOT's developing financial crisis, which became substantially worse with the loss of revenue resulting from the 1973 Arab oil embargo. Even if the freeway's EIS received approval, there was a good chance there would be no money to build it. Then on September 1, 1973, word came of a huge victory for Holgin. The Environmental Protection Agency had rejected the Envi-

Key dates in the history of the Harrisburg Freeway

1961	The Harrisburg Freeway is recommended by a regional transportation study.
1962-1968	Local officials attempt to gain TxDOT approval of the freeway.
1969	TxDOT accepts the route into the state highway system and official designates it as a freeway.
1970	The Harrisburg Freeway becomes the first Houston freeway planned under new federal regulations and the National Environmental Policy Act. Opposition to the freeway develops.
1973	The Harrisburg Boulevard alignment is recommended for the freeway after three years of study. The EPA rejects the draft environmental impact statement for the freeway.
1974	A full interchange is completed at Loop 610.
1974-1976	The highway funding crisis forces many freeway cancellations and postponements. By 1976 the Harrisburg Freeway is dead due to public opposition and lack of funding.
1992	The Harrisburg Freeway is deleted from Houston's *Major Thoroughfare and Freeway Plan*.

ronmental Impact Statement for the Harrisburg Freeway and labeled it inadequate. The EPA said the EIS did not contain sufficient information to adequately assess two aspects of the impact of the freeway. The first item was the impact of the displacement of persons and buildings, not on the Harrisburg corridor itself, but on the areas where displaced residents would move to. The second item was the impact on current and future air, noise, and water pollution in the corridor. Finally a governmental agency had put itself on Holgin's side. The *Houston Chronicle* quoted Holgin, "The EPA ruling on the draft report is a victory for the people in the Harrisburg community. It shows that somebody is looking out for us." The head of Houston's urban highway program, Bill Ward, was confident the problem could be overcome, saying, "We will do everything we can to answer the EPA's objections." [74]

The EPA ruling turned the tide in favor of the opposition, but it was not a final decision and both Holgin and TxDOT continued their efforts. Holgin appeared before Houston City Council on May 22, 1974, to ask the council what action it planned to take on the freeway. The city of Houston reiterated its support for the freeway.[75]

The Death of a Freeway

But the freeway was doomed. TxDOT's budget shortfall was developing into a full-blown crisis, and TxDOT was forced to put the Harrisburg Freeway and other projects on hold. In September 1976 Bill Ward stated in a project status letter, "It is assumed that further development of the Harrisburg Freeway is suspended until the funding situation is cleared up." Looking back on the period, Ward remembered, "There was no point to pursue a project that had opposition since there were no funds to build the freeway." With political support for the highway program at an all-time low, it didn't make sense to continue to generate negative publicity.[76]

The freeway still had widespread public support in April 1975, however. A study by the Texas Transportation Institute found that 70% of a sample of residents in the freeway corridor supported the freeway. Sixty-six percent of Hispanic residents, who comprised 61% of the survey participants, favored the freeway. The Harrisburg Freeway Study Team issued a final route report in August 1976, stating its final case for the freeway.[77]

Holgin closely monitored any new developments regarding the freeway, but there would be none. The freeway was dead. The freeway didn't burn out, but it faded away, a victim of declining financial support for the highway system and public opposition. TxDOT moved on. Dexter Jones moved on, focusing on highway safety research. Holgin moved out of the area in 1986.

In the final analysis, it can be concluded that insufficient highway construction funding was the principal cause of the demise of the Harrisburg Freeway. But when the freeway's future became tenuous due to the funding situation, Richard Holgin's opposition probably was the decisive factor in the ultimate decision to abandon the freeway. Had there been no opposition or if there had been visible community support, the Harrisburg Freeway probably would have moved forward, slowly but surely.

The Harrisburg Freeway remained on official planning maps until 1992, when it was finally deleted from the city of Houston's *Major Thoroughfare and Freeway Plan*. Left behind at the eastern end of the proposed Harrisburg Freeway is a dramatic reminder of the cancelled freeway. Just to the west of a four-level interchange completed in 1974, the freeway grinds to an abrupt halt and traffic exits to the frontage roads. The frontage roads proceed for another half-mile (0.8 km), with the land once designated for the freeway main lanes now vacant.

Is Houston a better place without the Harrisburg Freeway? Is the Harrisburg community a better place because the freeway was not built? To Richard Holgin, the answer is yes.

To others, the answer is no. Frank Mancuso, Houston City Council member during the period, looked back in 1999 and stated about the freeway, "I still think there's a need, more than ever." While other neighborhoods close to downtown experienced a renaissance during the 1990s, particularly the Heights area near the Katy Freeway, the Harrisburg corridor was largely left behind. Perhaps the area remained just as Richard Holgin wanted it, serving its low-income and immigrant residents with modest homes and a scattering of small businesses. The decline and stagnation of the Harrisburg area was a particularly bitter pill for Dexter Jones to swallow. In a career that included many successful safety improvements to the highway system, including Houston's leading highway lighting program, the demise of the Harrisburg Freeway stood out as the greatest single disappointment. For him, it was an opportunity lost—an opportunity to revitalize a neighborhood to which he had a personal connection.[78]

June 2005 Update: The lawsuit against the Katy Freeway project was dismissed by a federal court on April 9, 2004, allowing the project to move forward. The final major construction contract was awarded in March 2005.

Katy Freeway, Interstate 10 West

All great freeway cities need a great freeway. Chicago has the Dan Ryan Expressway. New York City has the New Jersey Turnpike. Los Angeles has the El Toro Y. Toronto has the 401 Freeway. If Houston is to join the ranks of the world's great freeway cities, it needs a big, monumental freeway. And if the Katy Freeway expansion moves forward as planned in mid-2003, Houston will get its mega-freeway to propel it into the ranks of the freeway elite.

Residents of west Houston have suffered for decades on the small, antiquated, six-lane Katy Freeway. As expansion and reconstruction proceeded on nearly all other Houston freeways, the Katy Freeway has remained in its 1960s time warp, hopelessly incapable of meeting modern-day demand. However, sometimes being last in line can have its advantages. In the case of the Katy Freeway, which will be Houston's last 1960s-era freeway to undergo comprehensive rehabilitation, the best was saved for last. The Katy Freeway reconstruction will be the largest freeway expansion to occur in Houston and will transform the corridor into one of the nation's most impressive. Houston's freeway embarrassment will become its showcase…if 2003 plans move forward to construction, that is.

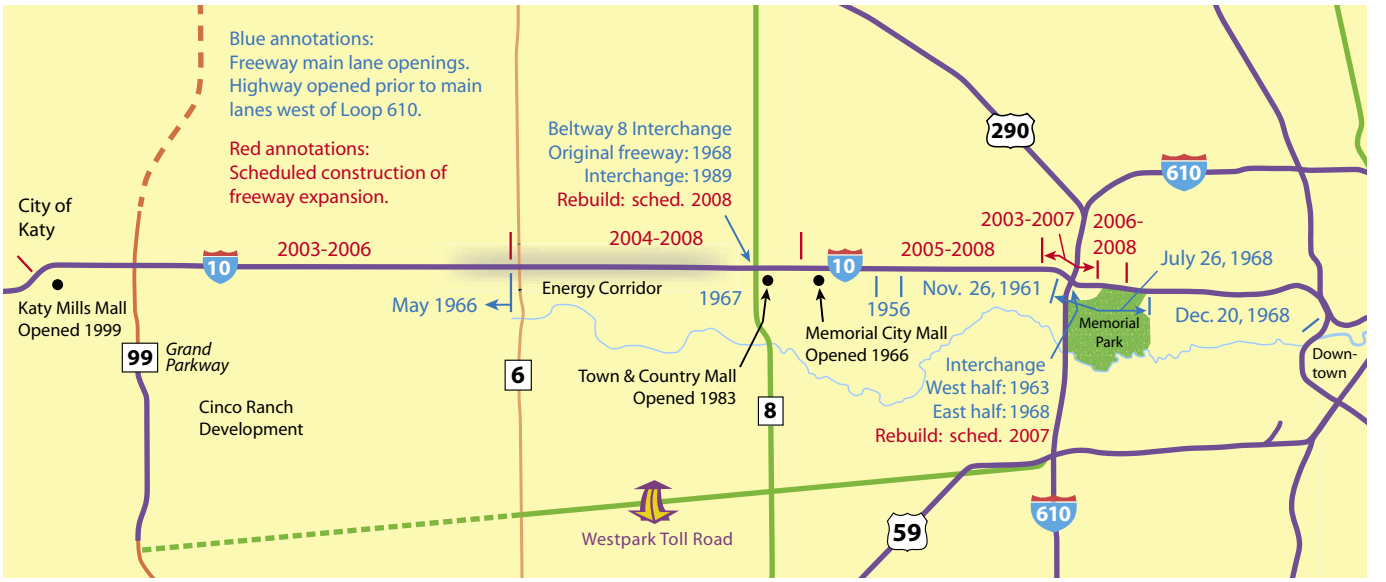
The Katy Freeway in 2003 isn't all bad. The 10-lane section inside Loop 610, opened in December 1968, is still modern and impressive by today's standards. The congested section outside Beltway 8 has earned itself a more positive distinction as Houston's "Energy Corridor" due to the large number of oil, gas, and petrochemical firms with large offices along the freeway. The freeway also serves many of Houston's most affluent neighborhoods, which are located between the Katy Freeway and Westheimer, 3.5 miles (5.6 km) to the south.

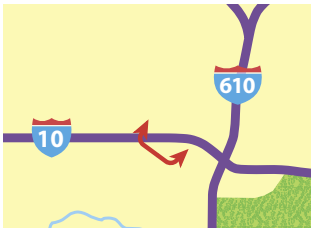
Katy Freeway	
Previous designations	SH 73 US 90 West Freeway (1956–65)
Designated as freeway	1946 (inside Loop 610) 1953 (outside Loop 610)
First freeway section open	1956
Freeway complete	1968
Reconstruction	Pavement replacement only
Max traffic volume, 2001	219,000 vehicles per day
Future construction	Major expansion and tollway construction beginning in 2003

Origins

The Katy Freeway had its origins in SH 73, which was designated as the "new" San Antonio Highway in 1939 and was generally located along the route of today's IH 10. In 1940 there was discussion of a Memorial Park entrance for SH 73, but by August 1940 TxDOT had dropped the plan. The city of Houston then acquired land north of Memorial Park near Washington Street for a new interchange with US 290, but those plans were later changed because TxDOT purchased that land for a new district headquarters. In 1941 the route of SH 73 in west Houston was redesignated as US 90.[79]

The original freeway plans for SH 73 west of Post Oak Road were formulated in 1940. The plans called for a 175-foot-wide (53 m) right-of-way for the freeway with six main lanes and a frontage road on the south side of the freeway only, due to the railroad track on the north side of the corridor. The Katy Freeway's narrow right-of-way





The original US 90: This 1954 view shows the original US 90 four-lane divided highway just west of today's Loop 610. Houston's freeway system carries its heaviest traffic volumes just outside Loop 610. After the completion of the IH 10 expansion, this location will likely become the busiest point in Houston's freeway system. (Photo: TxDOT)

had its roots in the early plans. The 175-foot width was widened along most of the corridor when the facility was later upgraded to a full freeway, but the extremely narrow right-of-way persisted on one key section and is one of the reasons the Katy Freeway was never expanded or improved.[80]

The need for an east-west freeway across Houston was one of the earliest freeway needs identified. In June 1942, the Texas Transportation Commission formally approved the north section of the city's planned Defense Loop, which was intended as a bypass for US 90 and designated as the "Loop on US 90." In October 1946, the Texas Highway Commission authorized US 90 as a full freeway within the city limits of Houston, which at the time extended approximately to the location of Loop 610. In June 1953, the Texas Transportation Commission authorized US 90 as a full freeway westward to the city of Katy. The route was officially designated as IH 10 in 1959.[81]

In the early days of the Katy Freeway's development outside Loop 610, there was a dispute between the two highest-ranking TxDOT managers in the Houston district about the required corridor width for the freeway. Wiley Carmichael, who managed projects outside of Loop 610, wanted to construct IH 10 within the available US 90 right-of-way, while A. C. Kyser, who managed the Houston Urban Project Office and was responsible for projects inside Loop 610, recommended a wider corridor. The project was under the jurisdiction of Carmichael and he got his way, but the use of the narrow corridor proved to be very costly to Houston in the long run, necessitating a large and costly right-of-way clearance for the planned expansion and delaying the project about 25 years after it was needed.

The first work to upgrade US 90 to a full freeway began in 1954. The Campbell and Blalock Road overpasses were completed in 1956. The section from Campbell Road to Post Oak was officially dedicated on November 13, 1962. The freeway pushed westward over the following years and, by April 1968, the freeway was completed to the city of Katy, west of Houston.

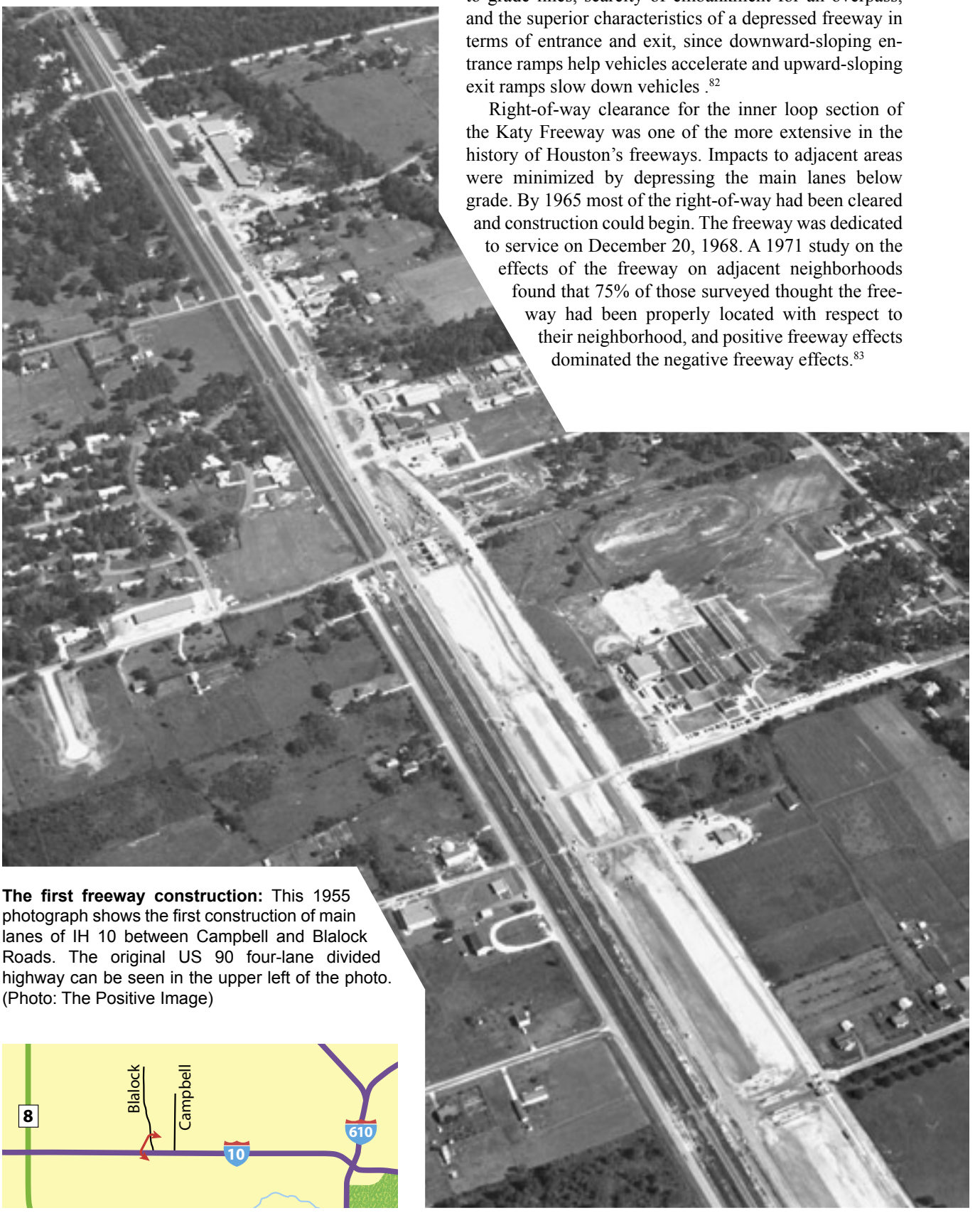
The Beltway 8 frontage roads first connected to the Katy Freeway in 1968. However, construction of modern frontage roads and the main lanes of the Sam Houston Tollway did not get underway until the late 1980s. The Beltway 8-Katy Freeway interchange was Houston's first five-level freeway-to-freeway interchange. It was partially opened in 1988 and fully opened in 1989.

The Inner Loop Section

While Wiley Carmichael was building the minimal 6-lane freeway with 2-lane frontage roads through west Houston, A. C. Kyser was developing big plans for the section inside Loop 610. More than any other freeway in Houston, it would be similar in design to a Los Angeles freeway. In fact, the plans were probably influenced by California freeway design, since Kyser had visited California to study its freeways. The freeway would be big,

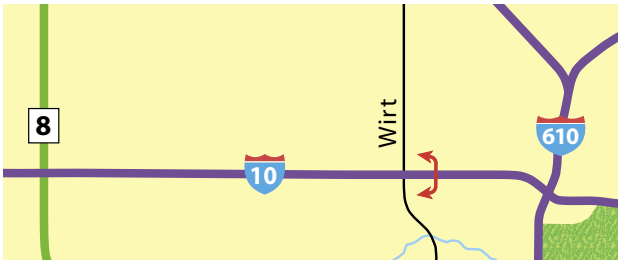
with a minimum of 10 general purpose lanes. A 1.7 mile (2.7 km) section of the 4.7-mile (7.5 km) length would be depressed below grade. The freeway would have superior geometrics with gentle curves and grades. The design even featured an unusual, wide deck across the freeway to allow the crossing of a railroad which intersected the freeway with only a 27-degree angle from the freeway centerline. The freeway was built underneath the railroad due to grade lines, scarcity of embankment for an overpass, and the superior characteristics of a depressed freeway in terms of entrance and exit, since downward-sloping entrance ramps help vehicles accelerate and upward-sloping exit ramps slow down vehicles .[82]

Right-of-way clearance for the inner loop section of the Katy Freeway was one of the more extensive in the history of Houston's freeways. Impacts to adjacent areas were minimized by depressing the main lanes below grade. By 1965 most of the right-of-way had been cleared and construction could begin. The freeway was dedicated to service on December 20, 1968. A 1971 study on the effects of the freeway on adjacent neighborhoods found that 75% of those surveyed thought the freeway had been properly located with respect to their neighborhood, and positive freeway effects dominated the negative freeway effects.[83]



The first freeway construction: This 1955 photograph shows the first construction of main lanes of IH 10 between Campbell and Blalock Roads. The original US 90 four-lane divided highway can be seen in the upper left of the photo. (Photo: The Positive Image)

1961 construction: This view shows construction of the Katy Freeway in 1961, looking west with the Wirt Road overpass at center and Bingle/Voss near the top. (Photo: The Positive Image)



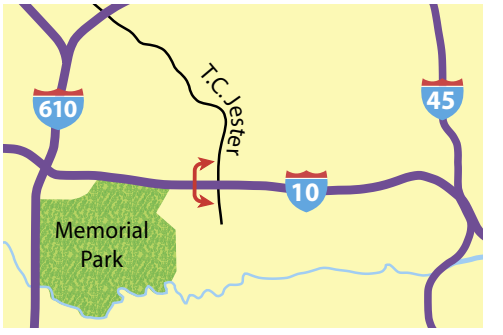
The Pain and Misery of the Katy Freeway

While A. C. Kyser's 10-lane inner loop section of the Katy Freeway was well-designed to take care of traffic needs far into the future, Wiley Carmichael's underdesigned section outside Loop 610 soon became overwhelmed with traffic and eventually degenerated into Houston's worst traffic nightmare. Houston's other congested freeways had been expanded and improved through the 1980s and 1990s, but the Katy Freeway outside Loop 610 remained in its originally constructed configuration with 6 general purpose main lanes and 2 frontage road lanes in each direction. The freeway reached a traffic volume of 179,000 vehicles per day in 1981, and in 1988 it first broke the 200,000-vehicle-per-day barrier, reaching 214,000 vehicles per day. Traffic volumes would not increase much further, however, in spite of substantial growth and development in the Katy Freeway corridor. It simply was not possible to squeeze more cars through the narrow freeway. The only relief for the Katy Freeway came in September 1984, when the interior shoulders were converted into a reversible transit lane during a pavement rehabilitation project. The Katy transitway became Houston's most heavily used transitway, serving 10,398 vehicles and 30,241 passenger trips daily in the third quarter of 2002. The only good news for area dependent on the Katy Freeway was that it remained a vibrant corridor for real estate development. Starting in the 1970s, major energy firms began locating offices along the Katy Freeway. This trend continued through the 1980s and 1990s, and the section between Beltway 8 and SH 6 became known as the "Energy Corridor." The Grand Parkway, Houston's third outer loop, connected to the Katy Freeway in August 1994. New housing development continued near the city of Katy, including the 7,000-acre master-planned Cinco Ranch community.[84]

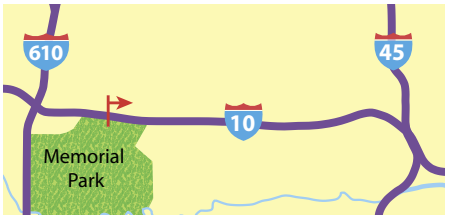
(Opposite page) **Halfway there:** These 1964 photos show the newly completed first phase of the interchange at the Katy Freeway and West Loop. Just west of the interchange, the Katy Freeway eastbound traffic is diverted off the freeway to Old Katy Road via a temporary roadway. The full interchange and the eastward extension of the Katy Freeway were completed in 1968. (Photos: TxDOT)


NORTH
610
SOUTH
610
EXIT
40
M.P.H.

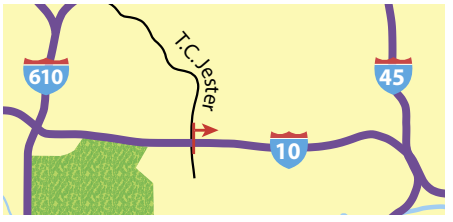
Right-of-way clearance: This 1965 view looking east toward downtown shows the right-of-way clearance required for the inner loop section of the Katy Freeway. This section of the Katy Freeway required one of the larger clearances in the history of Houston's freeway system. The low density of the area minimized the number of displacements, and the freeway was built below grade level to reduce impacts to the surrounding area. The freeway was opened to traffic on December 20, 1968. A 1971 study examining the effect of the freeway on the adjacent neighborhoods found that 75% of the area residents felt the freeway had been properly located and the majority of residents felt the neighborhood had been "made better off" by the freeway. (Photo: The Positive Image)



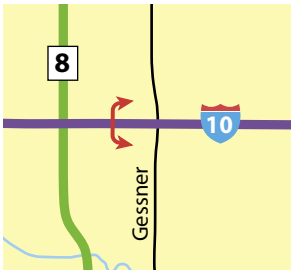
Slip-form comes to Houston: This view shows paving of IH 10 north of Memorial Park in December 1967. This paving project is believed to be the first use of slip-form paving in Houston. In slip-form paving, there are no molds to hold the concrete in place. A stiff concrete mixture is used and the paving machine forms the mold as it "slips" along the section of highway being paved. Slip-form paving became standard for concrete paving of highways. (Photo: TxDOT)



Houston's first sustained 10-lane freeway: This view looks east along the inner loop section of the Katy Freeway. When this section of freeway opened in December 1968, it was the first Houston freeway to have 10 main freeway lanes for a sustained distance. The Southwest Freeway, opened in 1961, had 10 lanes for a short distance. (Photo: May 2003)



A traffic nightmare: The Katy Freeway outside Loop 610 is the most congested freeway in Houston. The freeway is still in its original minimal configuration with six general-purpose traffic lanes for most of its length. The central reversible transitway, added in 1984, has been the only improvement to the freeway since its construction in the 1950s and 1960s. Heavy commercial and residential development has occurred since the original construction, overwhelming the freeway. (Photo: September 2002)



Fixing the Problem

By the mid-1980s studies were underway to determine how best to expand the freeway. The West Houston Association, a group representing real estate and business interests in west Houston, sponsored a study in 1985 which recommended the addition of elevated lanes for a 17-mile (27 km) section west of Loop 610. The idea was well received by local political leaders. Shortly thereafter in 1986, TxDOT launched its own study which proposed three options for the freeway expansion. The first option involved widening the freeway at ground level to 10 general-purpose lanes and 6 express lanes. The cost for construction (excluding right-of-way acquisition costs) was estimated at $500 million, approximately 750 million in 2003 dollars. The second and third options both added 6 express lanes on elevated structures in slightly different configurations. The cost was estimated to be $1.1 to 1.3 billion, approximately 1.65 to 1.95 billion in 2003 dollars. The high price tag and impacts of either the at-grade or elevated options made quick action unlikely. At a public meeting TxDOT Houston District head Omer Poorman said, "I'm not promising anybody anything" regarding when improvements could actually take place. It's a good thing he didn't make promises, because it would be a long road to the beginning of actual construction to improve the freeway.[85]

In 1992 a key event took place. In late December, after three years of "very hard negotiations," TxDOT and Union Pacific Railroad reached an agreement on the price for the purchase of the railroad tracks on the north side of the Katy Freeway. TxDOT paid $78 million to buy 28 miles (45 km) of track and agreed to pay an additional $25 million for "environmental remediation and substitute transportation costs." The railroad right-of-way was 100 feet (30 m) wide for most of the corridor length. The land purchase eliminated the need for elevated structures in the freeway expansion. By the end of 1992, TxDOT had formulated a preliminary conceptual plan for the freeway expansion with 10 general-purpose lanes and 6 express lanes.[86]

However, study of the Katy Freeway corridor had only just begun in 1992. In 1991 Congress passed the Intermodal Surface Transportation Efficiency Act, or ISTEA, which changed the way major new projects were developed. Now, a "major investment study" would be re-

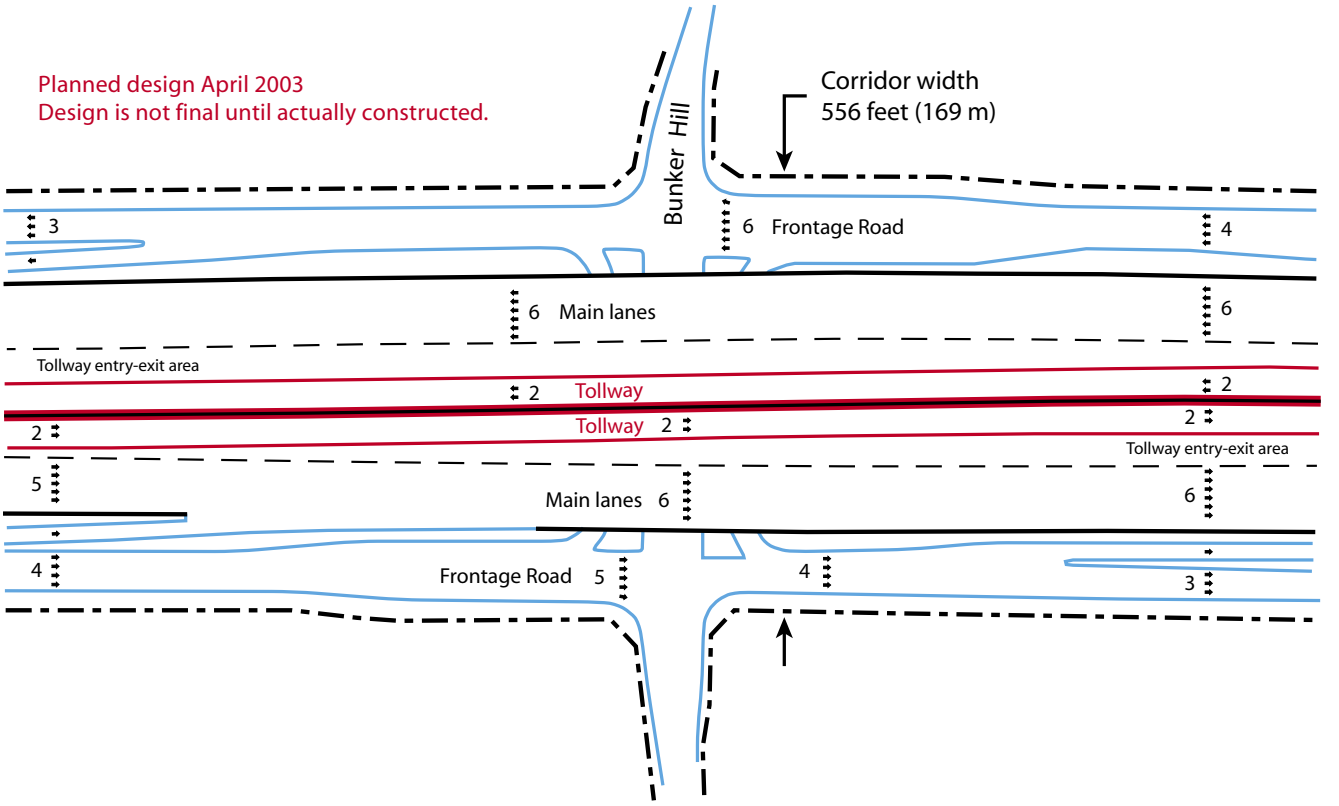
Katy Freeway-West Loop interchange, 1968-2004: In a project that began in summer 2003, this four-level interchange completed in 1968 will be demolished and replaced with a new interchange having geometrics and ramp capacities to accommodate the expanded Katy and West Loop Freeways. This will be the second replacement of a four-level interchange in Texas, following the replacement of the downtown Mixmaster in Fort Worth, a project completed in 2001. (Photo: November 2002)

quired. A major investment study is a comprehensive corridor study that considers a range of options and all modes of transportation. TxDOT launched the study in 1995, and a series of large public meetings were held along the corridor. By late 1995 it appeared that public opinion was in favor of a major expansion of the freeway. In 1997 TxDOT announced the locally preferred option, which included a minimum of 8 general-purpose lanes and 4 special-use lanes. When auxiliary lanes were included, the proposed freeway had at least 10 continuous general purpose lanes for most of the key section between Loop 610 and SH 6. The planned freeway corridor width averaged about 475 feet (145 m) from Loop 610 to Highway 6. Even with the railroad right-of-way and the Old Katy Road right-of-way north of the railroad tracks, the expansion would require substantial right-of-way clearance, mainly affecting businesses along the north side of the corridor. Moving the freeway expansion forward to construction became the number one priority of several area politicians.[87]

But the proposed design was far from complete. The design continued to evolve as TxDOT worked to accommodate public input. Two additional non-barrier-separated lanes for high occupancy vehicles were added to address public concerns that the four express lanes would be inaccessible to most motorists. The design appeared to be complete on March 27, 2001, when TxDOT held

Key dates in the history of the Katy Freeway

1939	SH 73 along the present-day freeway alignment is constructed.
1946	Official freeway designation inside Loop 610.
1953	Official freeway designation outside Loop 610.
1956	The first freeway section opens.
1968	Freeway completed.
1984	The Katy Freeway transitway opens. It becomes Houston's busiest transitway.
1985	The first formal study for improving the Katy Freeway is conducted. TxDOT performs an initial study in 1986.
1989	Houston's first five-level interchange is completed at the Beltway 8 intersection.
1992	TxDOT purchases the railroad right-of-way north of the freeway.
1997	A major investment study of the freeway corridor recommends expansion.
2002	Plans for a tollway in the center of the freeway are finalized.
2003	The first construction contracts are awarded.
2008	Scheduled completion of the Katy Freeway expansion.



Widest right-of-way: This view shows the planned Katy Freeway at the Bunker Hill intersection about 1.5 miles (2.4 km) inside Beltway 8, where the right-of-way for the expansion reaches its widest point: 556 feet (169 m). Between Loop 610 and SH 6, the corridor is typically 475 feet (145 m) wide, with five continuous freeway lanes and two continuous toll lanes in each direction. The Bunker Hill interchange and adjacent sections of freeway are scheduled to be awarded for construction in February 2005. However, a legal challenge must be resolved before construction can begin. (Source: diagram adapted from TxDOT schematic of the planned design, dated March 10, 2003.)

Biggest Freeways in North America

Freeway	Location	Complete in present or planned configuration	Comments
Dan Ryan Expressway Interstate 90/94	Chicago, Illinois	December 15, 1962	The first super-size freeway in the United States.
New Jersey Turnpike Interstate 95	New Brunswick, New Jersey	Circa 1967 for opening of first dual-dual section; major expansions or extensions of dual-dual roadway circa 1973, 1990, and 1996.	Sustained length of widest section is approximately 12 miles (19 km); dual-dual roadway is approximately 35 miles (56 km).
401 Freeway	Toronto, Canada	Circa 1967 for opening of first dual-dual section; ongoing extension of dual-dual section with major extensions in 1985 and 1990s.	Dual-dual section is approximately 34 miles (55 km) in 2003, with further extensions planned.
El Toro Y Interstate 5/405 merge	Irvine, California (near Los Angeles)	March 1997	Freeway width is reduced quickly south of interchange.
Interstate 5/805 merge	San Diego, California	Scheduled 2007	Wide section is about 3 miles (5 km) long.
Katy Freeway Interstate 10	Houston	Scheduled 2008	Will have continuous frontage roads and a sustained distance of 12 miles (19 km).
Lyndon B. Johnson Freeway Interstate 635	Dallas, Texas	Estimated sometime between 2010 and 2020	Will include twin deep-bored tunnels.

Note: The term “dual-dual” refers to a facility where each traffic direction has separate inner and outer sections. The inner section is intended for express traffic, and the outer section is intended for local traffic.

An unprecedented short life: This view looks west along the Katy Freeway at the Beltway 8 interchange, completed in 1989. Due to minimal available right-of-way, many of the connector ramps are built over the frontage roads. The interchange will be demolished and rebuilt during the Katy Freeway expansion and reconstruction, scheduled for 2003–2008. The strip of land on the north (right) side of the freeway was formerly a railroad and was purchased by TxDOT in 1992 for the Katy Freeway expansion. As this photo shows, the geometrics and pier placement of the interchange will not accommodate the expanded freeway, which will extend across the available right-of-way. The life of this interchange will be about 17 years. This appears to be the shortest lifespan of a major interchange in the United States. (Photo: May 2002)

a public meeting to display the "final" schematic. Within days of the meeting, a proposal surfaced to convert the four central express lanes into a toll facility. The financial participation of the Harris County Toll Road Authority (HCTRA) provided the possibility of an expedited construction schedule. A favorable public response to the toll road proposal was reported.[88]

In the construction industry, certain expressions have always brought smiles to everyone. "On time" and "on budget" have always been near the top of that list. But in the modern era of the transportation industry, there is perhaps an expression that trumps all others as a cause for celebration: "record of decision." After the record of decision, everything else is usually anticlimactic. The record of decision, or the "ROD," is the final approval from the Federal Highway Administration, certifying compliance with environmental standards and authorizing local agencies to proceed with a project. For the Katy Freeway, the magic words arrived on January 15, 2002. Two months later, on March 7, 2002, the Federal Highway Administration approved the use of a value pricing pilot program on the Katy Freeway, which cleared the way for a tollway in the center of the freeway. It was reported to be the first approval of the addition of toll lanes on a free interstate highway, although similar projects had been implemented on non-interstate highways, most notably the California 91 Riverside Freeway outside Los Angeles.

A freeway project as large as the Katy Freeway expansion is certain to generate opposition. Opponents were relatively quiet during the study phase but began to organize after the record of decision to mount a last-ditch effort to stop or substantially alter the project. The opposition formed the Katy Corridor Coalition and filed a lawsuit on September 17, 2002, to halt the project and conduct fur-

June 2005 Update: The lawsuit against the Katy Freeway project was dismissed by a federal court on April 9, 2004, allowing the project to move forward. As of March 2005 the estimated cost of the project had risen to $2.67 billion. The project remains on schedule for completion in 2008.

Future frontage road: The westbound frontage road of the reconstructed Katy Freeway will be positioned on the location of the present Bunningham Street. This is the only area where residences will be affected by the Katy Freeway expansion. As of March 2003, most of the homes along Bunningham were cleared. (Photo: March 2003)

ther studies of the environmental impacts of the project. In January 2003, the coalition unveiled its plans for the corridor. The alternative plan used a narrower right-of-way for the freeway, depressed the freeway lanes below grade, included a set-aside for a light rail line, and added tree plantings between the frontage roads and main lanes. A TxDOT analysis of the proposal in April 2003 ruled it infeasible, mainly due to a cost increase estimated at $500 million and an additional three years of construction to implement the depressed freeway design.

In mid-2003 project supporters were confident that the years of study and public meetings would ensure defeat of the opposition lawsuit. Key elected officials were solidly behind the TxDOT/HCTRA plan. Providing relief from the severe traffic congestion of the Katy Freeway remained the top priority of U.S. Congressional Representative John Culberson and Harris County Judge Robert Eckels. But in the world of freeway construction, nothing is final until it is built. Whatever the resolution of the lawsuit, the project outside Beltway 8 should remain unaffected and proceed as planned. On January 30, 2003, the Texas Transportation Commission officially approved a funding agreement with HCTRA whereby HCTRA would contribute up to $500 million to the overall project cost. The first construction contract for a section between SH 6 and the Grand Parkway (SH 99), with a value of $208 million, was awarded in May 2003. An $83 million contract for work near the Grand Parkway and a $262 million contract for the reconstruction of the Loop 610 interchange were awarded in July. Also in July, the first reports of cost overruns and possible delays were reported. The project cost estimate increased from $1.47 billion to $1.71 billion, mainly due to increases in right-of-way acquisition and utility relocation costs. Difficulty acquiring the 426 right-of-way parcels threatened to delay the project completion beyond the originally scheduled date of late 2008.[89]

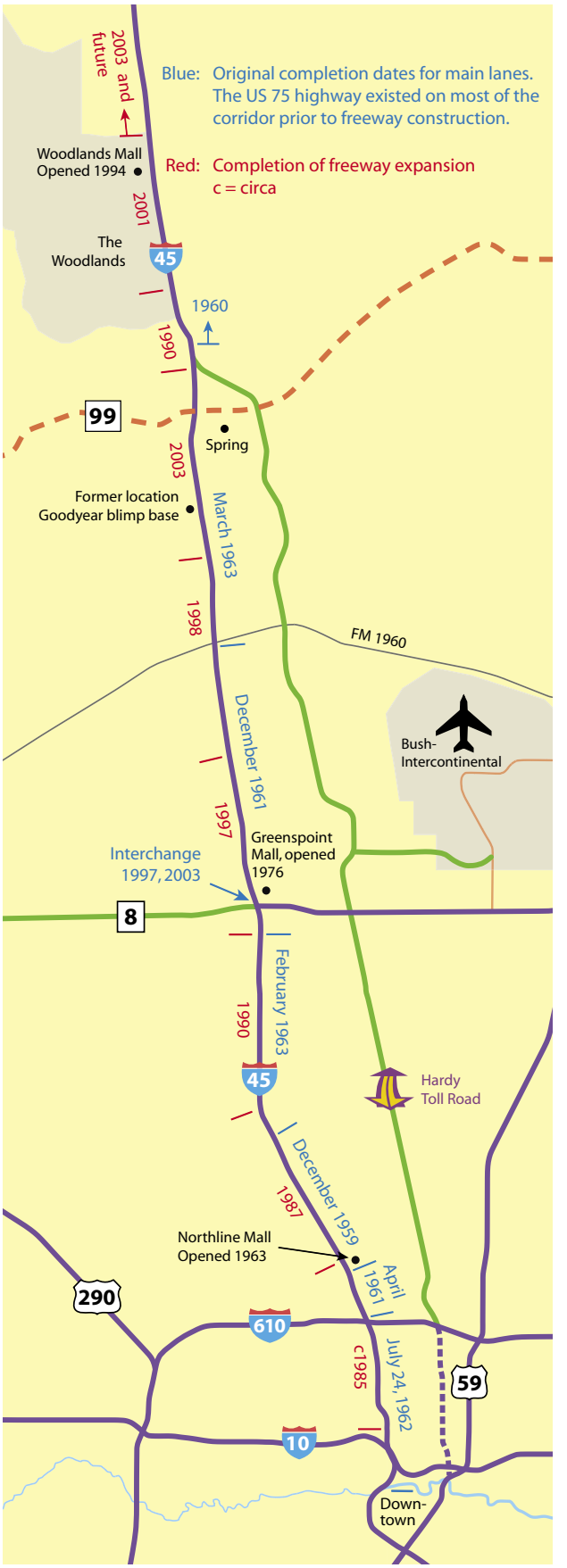
If built in its entirety as planned, the Katy Freeway will become one of the nation's most impressive urban freeway corridors for a sustained distance. It will rank among the world's great freeways and be a distinguishing freeway for Houston. With the Katy Freeway, Houston will undoubtedly be among the world's freeway elite. Residents of west Houston will finally be served by the state-of-the-art freeway for which they have waited so long. As the old proverb says, patience is a virtue.

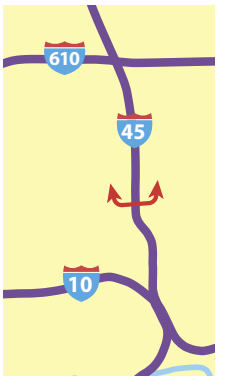
North Freeway, Interstate 45 North

Most Houston freeways have developed a distinguishing characteristic over the years. The West Loop has its impressive and ritzy Uptown Houston skyline. The Katy Freeway is the Energy Corridor. The La Porte Freeway has its industrial complex. When most Houstonians think of a freeway, something comes to mind, whether it is the Astrodome on the South Loop or the perennial construction on the Gulf Freeway. So what do Houstonians think of when the North Freeway is mentioned? In 2003, that honor goes to "Gallery Furniture, 6006 I-45 North between Tidwell and Parker," a retailer with a fast-talking owner who saturates Houston's media with advertisements, always including the North Freeway location in his sales pitches. Aside from Gallery Furniture, Houstonians are apt to think of billboards, commercial clutter, and lower-tier commercial establishments. No one has ever called the North Freeway glamorous or scenic. The most notable structure along the North Freeway, a Goodyear blimp hangar, was dismantled in 1994 and replaced with "big box" retail structures. Perhaps a 1999 *Houston Chronicle* article on the North Freeway found the right word for the freeway, calling it a "workhorse."[90]

But in terms of transportation, the North Freeway has always been one of Houston's most important freeways. It is one of the main routes to Bush Intercontinental Airport and serves as the link to Houston's fast-growing northern suburbs. It connects Houston to its cross-state rival, Dallas. It served as the location for Houston's contraflow lane transit experiment which launched Houston's transitway system. A major reconstruction and expansion of the freeway began in the early 1980s, and the freeway north of Beltway 8 is among the widest and most modern in Houston. The North Freeway also has an asset that motorists on every freeway would love to have: a traffic relief valve running parallel to it. The Hardy Toll Road, completed in 1988, runs parallel to the North Freeway for 21 miles (34 km), helping keep the North Freeway free-flowing and preventing severe traffic congestion. Still, the North Freeway ranks as one of Houston's busiest, with a traffic volume of 281,000 vehicles per day just outside Loop 610 in 2001.

North Freeway	
Previous designation	US 75
Designated as freeway	1945, 1950, 1952
First freeway section open	1959
Freeway complete	1963
Reconstruction	1982–ongoing
Max traffic volume, 2001	281,000 vehicles per day
Future construction	Continued expansion north of Houston; long-term upgrade inside Beltway 8





Pre-freeway: This view looks north along the North Freeway corridor in 1960 with the Loop 610 interchange construction zone in the upper part of the image. The path of the North Freeway is indicated by the dashed lines. Relatively few displacements were required for the freeway since its alignment followed Little White Oak Bayou. (Photo: The Positive Image)

Origins

A short section of the North Freeway was in the first group of Houston freeways to be approved by the Texas Transportation Commission in May 1945. The approved section of the North Freeway was a segment from downtown northward to the present-day intersection with North Main Street. At the time, the route was designated as US 75. In October 1946, the commission authorized route determination from North Main to the north city limit, which at the time was about two miles (3.2 km) north of the present-day Loop 610. That section was authorized for full freeway status in March 1950. From the north city limit to the Harris County line, route determination and right-of-way maps were authorized in February 1949. In June 1952, the commission designated all of US 75 between Houston and Dallas as a full freeway.[91]

The entire North Freeway was built in a remarkably short time—faster than any other freeway in Houston. The first 2.8-mile (4.5 km) section of freeway opened in December 1959, and the entire freeway to Spring in far north Harris County was complete by February 1963.

In its early years the North Freeway corridor remained largely devoid of any major commercial developments or landmarks. Up until the early 1970s it served a mostly lower- and middle-income area of northside Houston, and Northline Mall, opened in 1963, was the only notable commercial development. The Greenspoint office and retail complex began to take shape in the mid-1970s at the intersection with Beltway 8, but the office structures were not immediately adjacent to the North Freeway and seemed to be more closely associated with the Beltway.

The 1970s brought the oil boom to Houston, and the forests along the North Freeway became very active with residential development. As the FM 1960 corridor was urbanized and other large developments such as the Woodlands got underway, the North Freeway became overwhelmed by traffic. By the mid-1970s the North Freeway had succumbed to severe traffic congestion, setting the stage for the unique experiment that would heavily influence the future of Houston's freeways and transit.

The Contraflow Lane

As Houston descended into its traffic crisis in the 1970s, political leaders were under pressure to do something. But there was a problem. No money was available,

Loop 610 interchange construction: This view looks north at the three-level interchange with the North Loop in May 1961. The North Freeway north of Loop 610 had opened a month earlier, and the interchange was partially open to traffic. The North Freeway and the full interchange were opened in July 1962. (Photo: TxDOT)

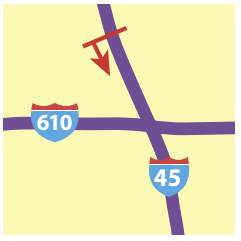
and the prospects for increased highway funding in the future were slim. Officials knew that transit needed to play a role in any solution, but the defeat of the Houston Area Rapid Transit Authority in 1973 by Houston voters eliminated the possibility of any big programs.

Something fast and cheap was needed, and the contraflow lane met both those requirements. It took away the inside traffic lane from the non-peak traffic direction, using it for buses and vanpools travelling in the peak direction. The contraflow lane was separated from oncoming traffic only by pylons spaced at 40-foot (12 m) intervals. There was no barrier.

In November 1974 Houston Mayor Fred Hofheinz asked the Houston office of TxDOT to evaluate the feasibility of a contraflow lane on the North Freeway. The project looked feasible, and authorities worked as quickly as possible within the regulatory environment to move it forward. With approvals required from the Urban Mass Transit Administration, Federal Highway Administration, and TxDOT headquarters in Austin, pulling the project together was no small task. Finally in November 1977, after three years of effort, bids were received for the $2.1 million project. Construction began in February 1978 and the 9.6-mile (15 km) contraflow lane from downtown to Shepherd Drive was officially opened on August 28, 1979. Two park-and-ride lots were also included in the project, bringing the total project cost to $6.8 million, roughly 15.6 million in 2003 dollars.[92]

Contraflow operation was successful, and usage began to increase after a modest 1,458 passenger-trips, 27 bus trips, and 96 vanpool trips the first day. After one year, daily usage had increased to 8,724 passenger-trips, 125 bus trips, and 412 vanpool trips. The facility overcame concerns that it would be unsafe, in spite of a collision that occurred on April 25, 1980, when an automobile lost control, slid into the contraflow lane, and was broadsided by a van. The automobile driver was killed. Three years after its opening, the contraflow lane was serving 15,600

June 2005 Update: In 2004 TxDOT presented preliminary plans for the freeway improvements from downtown to Beltway 8, calling for the addition of four managed lanes for high-occupancy vehicles and toll-paying single occupant vehicles. By early 2005 organized opposition had developed in the neighborhoods along the freeway inside Loop 610. No final recommendation has been made as of June 2005.



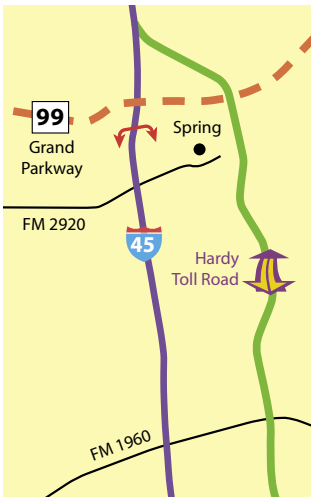
The North Freeway contraflow lane: One lane from the off-peak direction was marked off with pylons and opened to buses and vanpools travelling in the peak direction. This view looks south, just north of Loop 610. The contraflow lane operated from 1979 to 1984, when it was replaced by a barrier-separated transitway in the center of the freeway. The success of the contraflow lane accelerated the implementation of transitway lanes on most of Houston's radial freeways. (Photo: Metropolitan Transit Authority)

passenger-trips per day. The contraflow lane ended its five-year run on November 23, 1984, when traffic was shifted to a central barrier-separated lane. By that time, planning was well underway for an extensive transitway system on Houston's freeways—a system that was inspired and influenced by the success of the North Freeway contraflow lane.[93]

Rebuilding the Freeway

As one of Houston's early freeways, the North Freeway was built to 1950s standards and was soon hopelessly inadequate to meet the needs of the rapidly expanding suburbs north of Houston. Between 1970 and 1980 the population in the North Freeway corridor north of Beltway 8 and within Harris County increased by 302%. The freeway had only 6 main traffic lanes between Loop 610 and FM 1960, and only 4 main lanes in its northern section near Spring and the Woodlands. Frontage roads typically had only 2 lanes in each direction. In the early 1980s freeway reconstruction began, increasing lane capacity to 8 and 10 general purpose lanes with 1 central barrier-separated transitway lane. Whereas the original construction of the freeway occurred within a very short time period, the reconstruction would play out over more than 20 years as funding became available. Work began just north of downtown Houston in 1982 and proceeded northward, segment by segment. By 1990 the expansion had been completed to Beltway 8. The freeway expansion between downtown and Beltway 8 did not involve any substantial right-of-way acquisition, and the freeway section between Loop 610 and Shepherd Drive remained on an unusually narrow right-of-way. That section still does not meet the standards of modern 1980s freeway design due to the constraints imposed by the narrow right-of-way.[94]

In 1986 TxDOT finalized plans for the expansion north of Beltway 8. After considering elevated express lanes, an at-grade plan was recommended. The plan called for expanding the main lanes from 6 to 10 from Beltway 8 to FM 1960; from 4 to 8 from FM 1960 to the Hardy Toll Road; from 4 to 10 from the Hardy Toll Road to the Woodlands Parkway; and from 4 to 8 from the Woodlands Parkway to the south edge of Conroe. The entire length would have a central barrier-separated transitway lane and 3 continuous frontage road lanes in each direction. The



Houston still far away: This 1967 view looks south along the North Freeway at the community of Spring, north of Houston. This view shows that FM 1960, in the upper part of the photo, was still truly a farm-to-market road. Suburbanization of this part of north Harris County began in the 1970s. Expansion of the foreground section of freeway was completed in 2003. (Photo: The Positive Image)

existing freeway corridor ranged from 256 to 276 feet (78-84 m) wide. The expanded freeway right-of-way would be increased to 377 feet (115 m) for the 10-lane sections and 353 feet (108 m) for the 8-lane sections. Since most of the land along the freeway was undeveloped, only 102 businesses and 9 residences were displaced.[95]

Work north of Beltway 8 began in 1993 and will continue through approximately 2005 to reach the south end of Conroe. With the completion of the freeway expansion from Beltway 8 to FM 1960 in 1998, north Houston finally had its first section of the long-awaited wide, modern freeway. The first phase of the stack interchange at Beltway 8 was finished in 1997, and the interchange was fully completed in early 2003. Initial work at the interchange, consisting of two connector ramps, was completed in 1970 to serve traffic going to Houston Intercontinental Airport, which opened in June 1969. In 2003 a study was in progress to determine future improvements from downtown to the Woodlands. Preliminary options emphasized transit and using all available capacity of the Hardy Toll Road. The study is expected to recommend freeway expansion to accommodate future demand that cannot be served by transit or the Hardy Toll Road.

The Ultimate Freeway Suburb?

In 1972, architect Robert Heineman began to sketch out a plan for a large new community directly adjacent to the North Freeway on 27,000 acres of forest in far north Houston. The community he designed would be way ahead of its time. It would incorporate design features that would later be promoted as essential to sustainable development and the goal of better urban design and "livable" communities. Harmony with the natural environment. The concept of putting shops, services, and jobs close together in one community. Shared and efficient infrastructure. In today's terminology, it would be called smart growth.[96]

Originally opened in 1974, the Woodlands received numerous national and international awards for its responsible and innovative design. Suburban home buyers have made the Woodlands Houston's perennial leader in new home starts through most of the 1980s and 1990s, and continuing through 2003. The Hardy Toll Road was

Typical view: This view looks north along the freeway at Richey Road. Expansion of this section of the freeway was completed in 1998. (Photo: November 2002)

completed in 1988 and ended practically at the doorstep of the Woodlands, providing quick transportation access to Houston and further accelerating development.

When the major expansion of the North Freeway adjacent to the Woodlands was completed in 2001, the Woodlands had reached a sufficient population base to support the fully integrated community that Heineman envisioned 29 years earlier. Approximately 17,600 acres of the 27,000 acres had been developed, and 24,055 new homes had been built. The area's 1,000 businesses employed 27,000 people, and the population reached 70,000. Completion of the Woodlands is projected to occur around 2012.[97]

When the freeway era arrived in the 1950s, the concept of freeway suburbia came along with it. Developer Frank Sharp launched his Sharpstown community on the Southwest Freeway in 1955, bringing large, freeway-driven

The North Freeway at the Woodlands: Expansion of this section of freeway was completed in 2001 and features a direct connector ramp to the Woodlands Parkway. The Anadarko Petroleum building, completed in 2002, towers over the Woodlands Town Center and nearby Woodlands Mall. The 27,000-acre Woodlands master-planned community was started in 1974 and was about 65% developed in 2002. (Photo: May 2002)

suburban development to Houston. A succession of bigger and better communities followed. But the Woodlands will almost surely go down in Houston's history as the largest and most successful suburb, and one of the more notable suburban developments in the United States. And it took a freeway to make it all happen.

Key dates in the history of the North Freeway

1945	First designation as a freeway. Other sections are designated in 1950 and 1952.
1959	First freeway section opens.
1963	Freeway complete.
1974	The Woodlands real estate development is launched.
1979	Contraflow lane operation begins and continues until 1984.
1982	Reconstruction and expansion begins.
1988	The Hardy Toll Road is completed from Loop 610 to near the Woodlands.
2003	The interchange at Beltway 8 is completed.
Future	Expansion north of Houston, upgrades inside Beltway 8.

Airship base: The Goodyear Blimp hangar was a fixture on the North Freeway for 25 years from 1969 to 1994. When this photo was taken in September 1991, commercial development and strip shopping centers were encroaching on the blimp base. The base was closed in April 1992 when the airship *America* was relocated to Akron, Ohio. In March 1994 the hangar was dismantled and relocated to San Diego, California. Two large retail establishments, a Home Depot and Lowe's Home Improvement Center, were subsequently constructed on the blimp base land.[98] (Photo: The Positive Image)

No slouch for construction: Although IH 45 South, the Gulf Freeway, has the reputation for being Houston's most construction-affected freeway, the North Freeway has had its share of construction. Since 1982 there has been construction in progress nearly continuously. This view looks north from the Louetta Road overpass in March 2003, with construction on the freeway expansion nearing completion. Construction continues further north on IH 45. (Photo: March 2003)

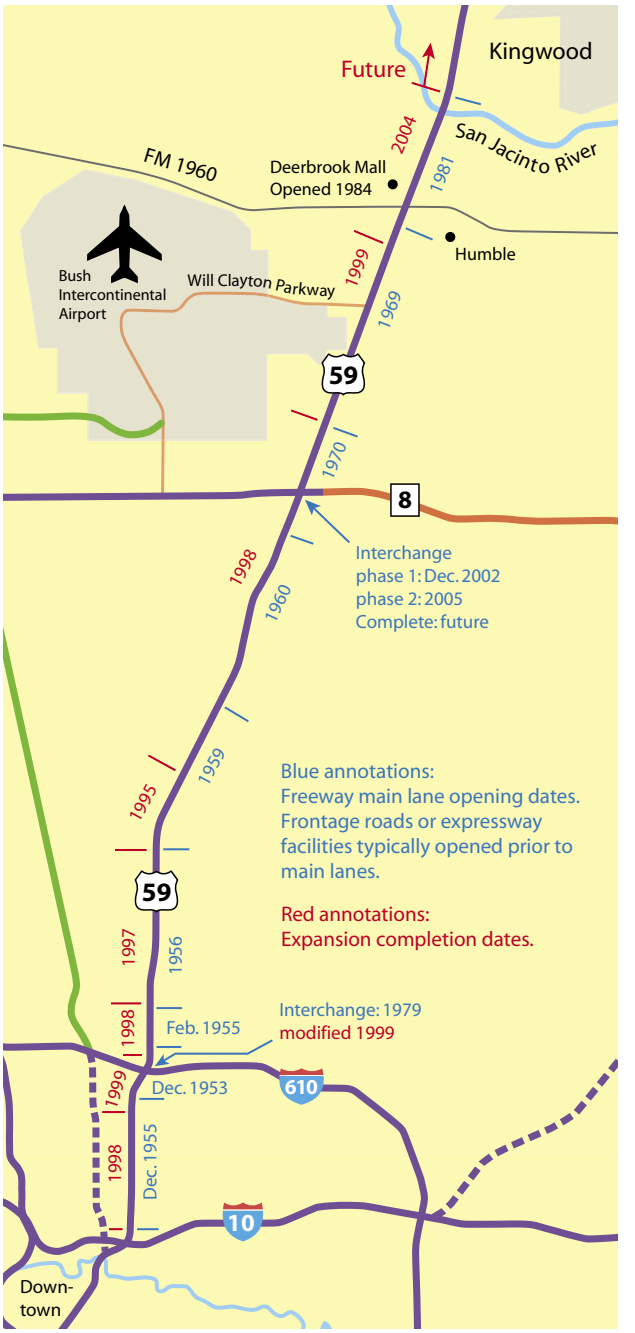
Dallas Freeway? No way! In 1965 there was an effort to rename several Houston freeways to eliminate compass-point names. The North Freeway was proposed to be renamed the Dallas Freeway. A *Houston Chronicle* editorial came out against the change, saying, “Why advertise Dallas, for goodness sake?” The North Freeway name change was rejected, as well as all the other proposed changes except a renaming of the West Freeway to become the Katy Freeway. This view is on the northbound lanes just north of Beltway 8, with the Rankin Road overpass just ahead.[99] (Photo: November 2002)

North Belt interchange: This view looks north along the North Freeway at the North Belt interchange, which was completed in early 2003. (Photo: September 2002)

Eastex Freeway, US 59 North

Clearing out the old and bringing in the new is a regular event on Houston's freeways, but sometimes the transformation is especially satisfying. In the case of the Eastex Freeway, the "old" was the original, antiquated 1950s-era design, Houston's last vestige of a first generation freeway. The "new" is a state-of-the-art freeway, among the best in Houston. Getting from old to new was a particularly long and painful process due to the seemingly interminable delays during construction, but by the late 1990s Eastex Freeway motorists were finally driving on their new freeway. After the transformation was complete, there was surely no doubt: new *is* better.

Eastex Freeway	
Designated as freeway	1945, 1953
First freeway section open	1953
Freeway complete	1970 (to Bush Intercontinental Airport)
Reconstruction	1991–ongoing
Max traffic volume, 2001	192,000 vehicles per day
Future construction	Expansion north of Houston; complete interchange at Beltway 8

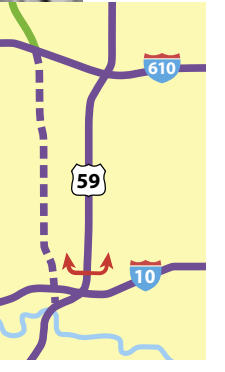


Origins

The Eastex Freeway was Houston's second freeway to be constructed, after the Gulf Freeway. The section from downtown to Loop 137, just north of present-day Loop 610, was authorized by the Texas Transportation Commission in May 1945 when the commission approved a small group of freeways that would form the basis for Houston's early freeway plan. By November 1948 city and state officials had determined that the US 59 freeway would be routed just east of Jensen Drive, leading to the informal designation of the route as the Jensen Drive Freeway. The freeway was also informally called the Humble Expressway. Early plans showed the Eastex Freeway terminating at the planned east-west freeway (now IH 10) with connections being made into downtown via ramps from the east-west freeway. In 1948 officials were already contemplating the idea of bringing the freeway into downtown on its own structure. By early 1952 an alignment along Chartres Street east of downtown was identified, and by April 1953 the continuation of US 59 into downtown had been officially approved into Houston's freeway plan. In October 1953 the Texas Transportation Commission officially authorized US 59 as a full freeway from Houston to the Liberty County line, 40 miles (64 km) north.[100]

Building the Freeway

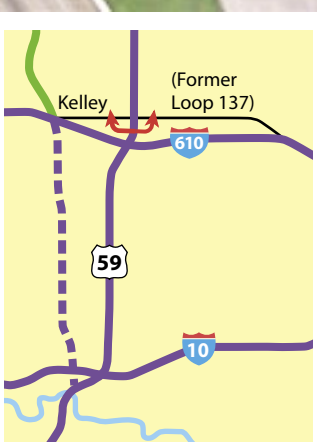
In the early 1950s, the city of Houston was responsible for acquiring all right-of-way for new freeways within the city. Since the Eastex Freeway was being built through an urbanized area, clearing the corridor was a costly and time-consuming task. The city of Houston sold $1.3 million in bonds around 1950 to pay for the right-of-way acquisition, and a team of 10 people worked "day and night" to complete all necessary transactions to clear the corridor for freeway construction. The first construction contract was awarded in December 1951 for the frontage roads on a 1.9-mile (3 km) segment just south of the present-day Loop 610 and a short segment of main lanes at Loop 610. An official dedication was held on December 22, 1953, and Houston Mayor Roy Hofheinz announced the winning name in a contest to name the freeway. From

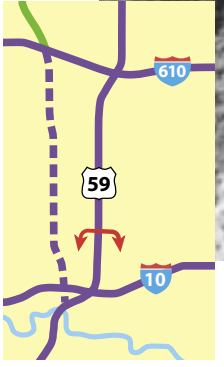


The beginnings of the Eastex Freeway: This view shows the cleared corridor for the Eastex Freeway just north of downtown in January 1954. The frontage road section in the upper part of the photograph and a short section of main lanes at the top of the photo were officially dedicated on December 22, 1953. On the opening day, the winning entry in a contest to name the freeway was announced. (Photo: *Houston Chronicle*, January 11, 1954)


CLEVELAND
59
LIBERTY
JENSEN DR.
LOOP 137
90
LOOP 137

The motorized merry-go-round: These views look north along the Eastex Freeway at Kelley Road. The upper view on the opposite page shows construction on August 3, 1954. At the time Kelley Road was Loop 137, the predecessor to Loop 610. A traffic circle was used for this interchange. It was a good thing that traffic circles were rare in Houston, because Houston motorists and traffic circles don't mix well. From 1964 to 1966 the intersection was the most dangerous in Houston, with 121 accidents in 1965 and 136 accidents in 1966. In 1969 the *Houston Post* reported, "Few other intersections can begin to compete with the more than 100 annual smash-ups on this motorized merry-go-round." The signage along the Eastex Freeway shown in the lower photo attempted to help motorists navigate the intersection. The completion of the North Loop in 1975 finally diverted traffic from the traffic circle, allowing TxDOT to remove it and replace it with a standard bridge, shown in the photo above. The Eastex Freeway was built to its present configuration in 1998.[101] (Photos: opposite page upper, Squire Haskins Photography, Dallas; opposite page lower, TxDOT; above, September 2002)





Freeway construction: This August 3, 1954, view looks south along the original construction of US 59 just north of IH 10. Expansion of this section of freeway was completed in 1998. (Photo: Squire Haskins Photography, Dallas)

that day on, the freeway would be known as the Eastex Freeway. Houston's first two freeways, the Gulf and the Eastex, would be the only Houston freeways to be named by contests.[102]

By the end of 1953 work was underway both to the north and south of the completed section. Freeway openings became a regular occurrence during the rest of the 1950s, pushing the freeway northward toward Beltway 8. North of Houston, the Eastex Freeway was initially constructed as an expressway and later upgraded to full freeway standards. By March 1970, the Eastex Freeway was a full freeway from downtown to the Will Clayton Parkway entrance of Bush Intercontinental Airport. At the time, Will Clayton Parkway was called Jetero Boulevard.

A Quiet Corridor

As one of Houston's earliest freeways, the Eastex Freeway suffered from the low standards of first generation freeway design. The freeway was narrow, overpasses lacked shoulders, and ramps had poor geometrics. There were only six freeway lanes from downtown to just north of Loop 610, and only four freeway lanes north of Loop 610. The low capacity of the freeway did not immediately become a problem because the Eastex Freeway corridor remained quiet in terms of real estate development. The Eastex Freeway became one of the two main access routes to Houston Intercontinental Airport (now Bush Intercontinental Airport) when the airport opened in June 1969, but the airport opening spawned almost no commercial development along the Eastex Freeway. In 1971 Friendswood Development (then a division of the Exxon Corporation) launched the 14,000-acre Kingwood master-planned community in far north Houston just east of the Eastex Freeway. The community became highly successful. The Eastex Freeway would remain devoid of major commercial development until the opening of Deerbrook Mall in 1984 in Humble near Kingwood.[103]

By the 1980s the Eastex Freeway frontage roads had become lined with junkyards, used car lots, and other low-grade commercial establishments. The vintage 1950s-era freeway design and unsightly clutter had become an embarrassment to Houston, especially since it was one of the main routes to Houston's principal airport. The reconstruction of the Eastex Freeway became one of the top priorities of local leaders in the early 1980s when plans for the next generation of improvements to Houston's freeways were being formulated. When Houstonian Bob Lanier became chairman of the Texas Transportation Commission in 1983, he made the reconstruction of the Eastex Freeway one of his priorities, moving the project forward in the line for state funding.

The Expansion

The Eastex Freeway expansion required the largest right-of-way clearance in Houston since the early 1970s. The freeway corridor right-of-way width, which was typically 256 to 300 feet (78 to 91 m), would need to be widened to 400 feet (122 m) for the 10-lane sections of freeway and 376 feet (115 m) for the 8-lane sections. Nine churches, 196 businesses, 194 single-family homes, and 240 units of multifamily housing were to be displaced. Even with the depressed real estate prices following Houston's oil bust in the mid-1980s and the generally low property values in that section of Houston, the cost of the right-of-way acquisition and relocation was estimated to be $205 million in 1985—308 million in 2003 dollars. There was some protest among businesses and the usual complaints from inner-city interests that the freeway would primarily benefit suburban communities like Kingwood, but the project had strong political support and moved forward without difficulty. The expansion had the big benefit of cleaning up much of the decay and clutter alongside the freeway, drastically improving its appearance.[104]

> "The Eastex Freeway widening has been a theater of the glacial."
>
> *Houston Chronicle*, April 26, 1998

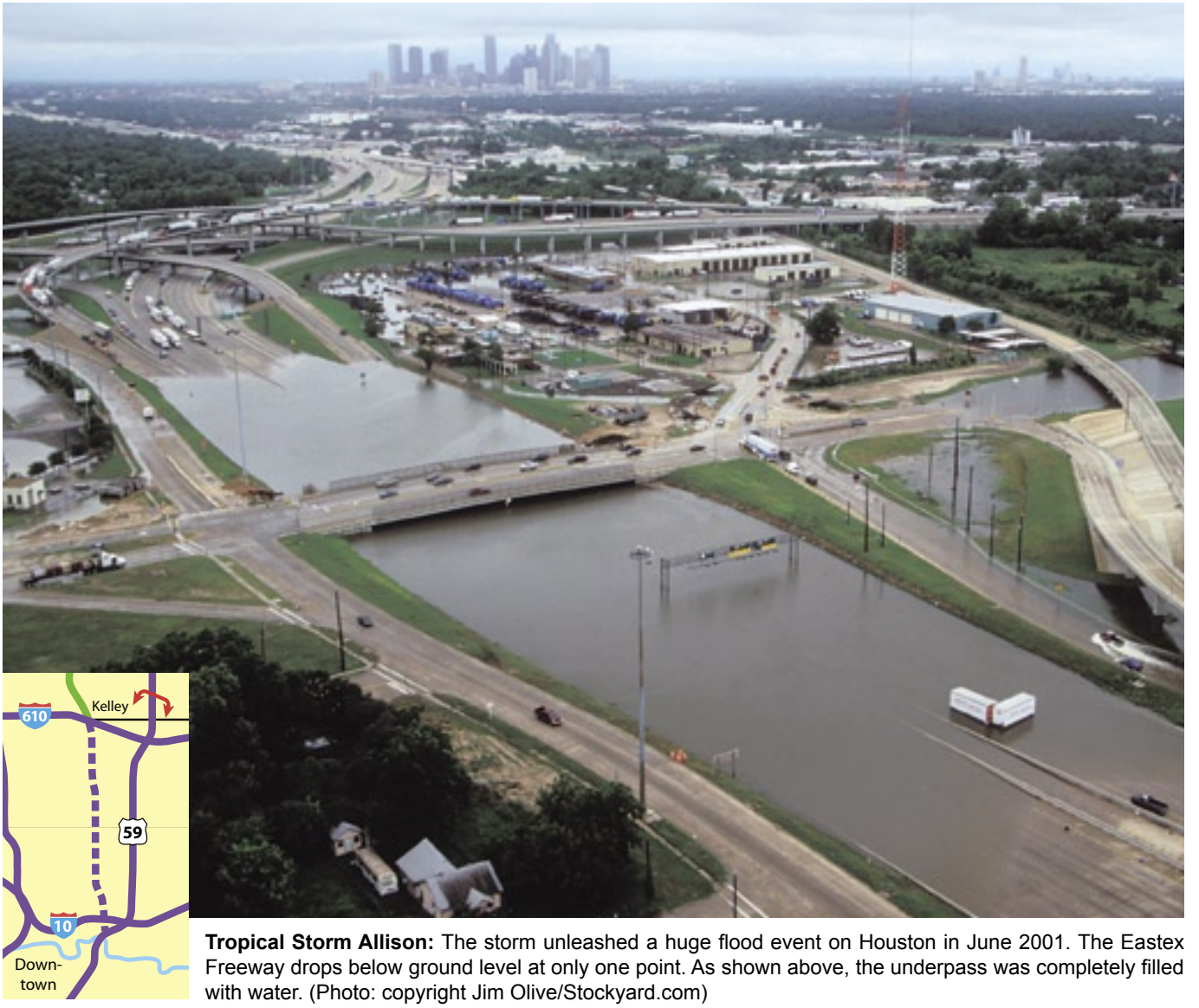
The first construction contract for the Eastex Freeway expansion was awarded in 1991. The project turned out to be a long-running, drawn-out affair, with construction between downtown and Beltway 8 taking nearly all of the 1990s. The project was divided into numerous contracts with the usual three- to four-year construction period. The contractor on most of the construction contracts, Williams Brothers Construction, generally took six to seven years to complete the work on each of its contracts. A comprehensive report by the *Houston Chronicle* in 1998 cited numerous reasons for the delay, including utility relocations, unexpected environmental cleanup, TxDOT's project sequencing, and design changes after work began. But those factors couldn't account for a three-year delay, the report stated. The report speculated that the very low penalties for late completion of the contracts provided little incentive for the contractor to complete the projects on time, and actually made it advantageous for the contractor to divert resources to other, more profitable jobs. Whatever the reason, work proceeded at a glacial pace. The Eastex Freeway reconstruction project prompted TxDOT to use higher penalties for late completion on its future contracts, and Williams Brothers would go on to demonstrate an exemplary record for timely completion of projects in the following years.[105]

Key dates in the history of the Eastex Freeway

1945	First official designation as a freeway. Full length designated as a freeway in 1953.
1953	First section opens and freeway named in a contest.
1979	Interchange at Loop 610 is completed.
1991	Reconstruction and expansion begins.
Future	Expansion north of Houston, complete interchange at Beltway 8.

Old and new: The photo at left looks north along the Eastex Freeway from the Greens Road overpass in 1978. The lower image shows the exact same location in 2002 after completion of the expansion. The Greens Road overpass was removed and the Eastex Freeway main lanes now go over Greens Road. The reconstructed Eastex Freeway has 10 general-purpose main lanes, a central transitway, and frontage roads. (Photos: left, TTI; lower, December 2002)

Before, during, and after: These views show the East-ex Freeway-North Loop interchange in 1973, September 1977, and 2002. Completed in September 1979, this interchange was the last of Houston's first generation of four-level stack interchanges. It was, however, the first Houston interchange to include a frontage road—the East-ex Freeway northbound frontage road. All subsequent interchanges in Houston would include the frontage roads of both intersecting freeways. (Photos: upper, TxDOT; middle, Chuck Fuhs; lower, November 2002)



Tropical Storm Allison: The storm unleashed a huge flood event on Houston in June 2001. The Eastex Freeway drops below ground level at only one point. As shown above, the underpass was completely filled with water. (Photo: copyright Jim Olive/Stockyard.com)

Original Eastex: This view dated August 1981 shows the original four-lane freeway just north of Aldine Mail Road. Expansion of this section was completed in 1998. (Photo: Texas Transportation Institute)

Finally in 1998 sections under contract to Williams Brothers were being completed. By 1999, work had been completed from IH 10 downtown to the Will Clayton Parkway entrance of Bush Intercontinental Airport. The end result was worth the wait. The freeway features 10 continuous general purpose lanes for most of its length to the airport, with 8 on the remainder. It includes a fully integrated transitway facility and continuous frontage roads built to high standards. What was Houston's last vestige of a first generation freeway in 1990 had been transformed into one of Houston's most impressive freeway corridors. In 2003 work continued on expansion near the Kingwood community. Houston's newest five-level stack interchange was also under construction at Beltway 8, with half of the planned eight connectors being built in the current phase. Future plans will extend the freeway expansion further northward and complete the stack interchange at Beltway 8.

The Rest of the Spokes

East Freeway, Interstate 10 East

Origins

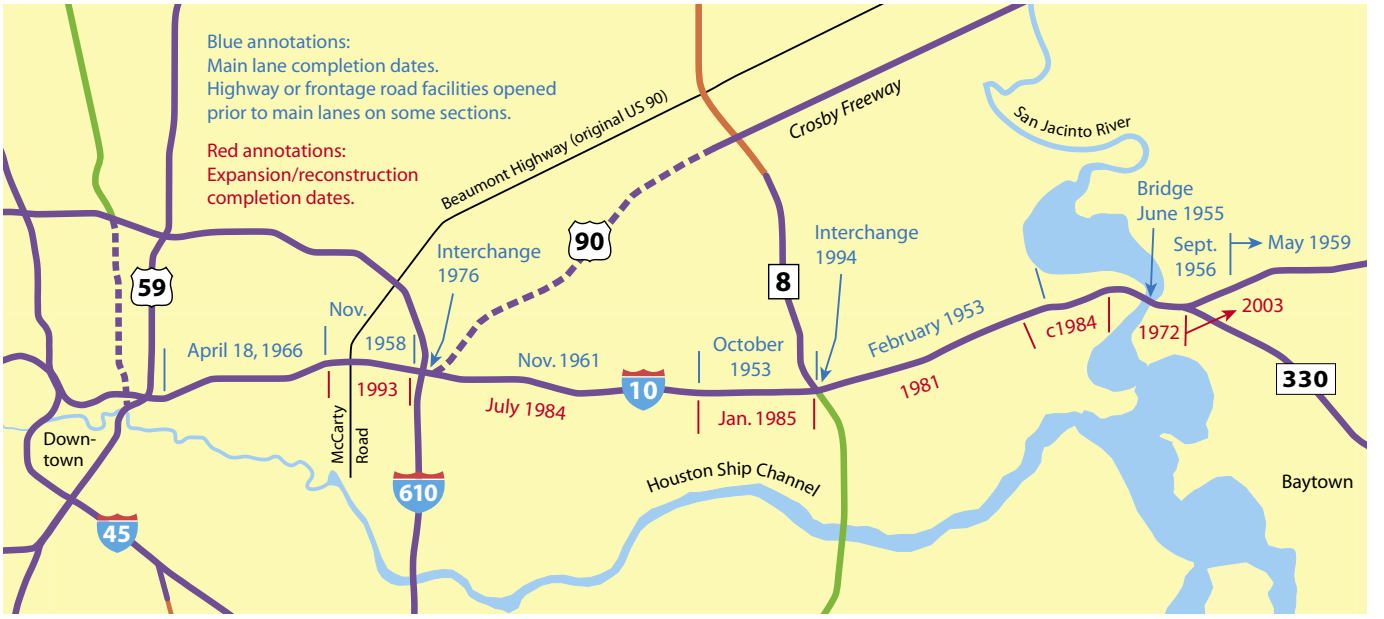
The early planning for the East Freeway* was a combination of work done for SH 73 and US 90. In October 1946, the Texas Transportation Commission authorized US 90 as a full freeway within the city limits of Houston, launching plans for an east-west freeway across Houston. At the time the eastern Houston city limit was located approximately at the present-day east Loop 610. However, US 90 veered northeastward at McCarty Road, just inside Loop 610. SH 73 provided a route that left Houston in an eastward direction. IH 10 absorbed the US 90 alignment west of McCarty Road and the SH 73 alignment east of McCarty Road.[106]

SH 73 was originally planned as a direct route to Port Arthur and was designated as the Port Arthur Short Line, or simply the Port Arthur Freeway. The first right-of-way for the Port Arthur Freeway in Harris County was purchased in 1946, and the first construction contract was awarded in 1948. In October 1953 the Texas Transportation Commission authorized SH 73, which began just inside Loop 610, as a full freeway eastward from Houston. Also in 1953, the first freeway section opened near today's Beltway 8. Inside Beltway 8 the route was initially constructed as a four-lane divided highway, not to freeway standards. In 1956 a new freeway-quality bridge over the San Jacinto River was opened. By early 1958, the route was substantially complete as a divided highway or freeway from just inside Loop 610 to a point 38 miles (61 km) east of Houston near Anahuac. In 1961 the SH 73 designation was officially dropped on its section that was absorbed into IH 10.[107]

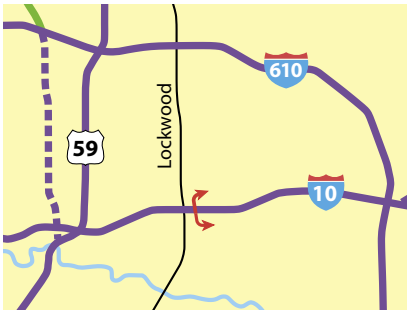
East Freeway	
Previous designations	US 90 (west of McCarty) SH 73 (east of McCarty)
Other names	Baytown-East Freeway
Designated as freeway	1946 (US 90) 1953 (SH 73)
First freeway section open	1953
Freeway complete	April 18, 1966
Reconstruction	Late 1970s–ongoing
Max traffic volume, 2001	206,000 vehicles per day
Future construction	Widening east of Houston, completion of interchange at IH 610 and US 90

Bringing the Freeway into Downtown Houston

Constructing SH 73 east of Loop 610 presented no particular challenges since it traversed a nonurbanized area. The SH 73 freeway itself was built to early 1950s standards with four main lanes and frontage roads. Bringing the freeway into downtown Houston would be much more challenging, however, since it cut through a heavily urbanized area. Freeways inside Loop 610 were under the jurisdiction of the Houston Urban Project Office, which was headed by A. C. Kyser. Kyser's freeways incorpo-



* The East Freeway is also called the Baytown-East Freeway. The designation "East Freeway" is used here.



Freeway coming through: This view looks east over the Denver Harbor area in 1958, just before right-of-way clearance for the East Freeway began. In the distance a completed section of the freeway can be seen. The section indicated by the dashed lines was opened to traffic on April 18, 1966. (Photo: The Positive Image)

rated the latest design and safety features, typically equaling the quality of the best freeways in the United States, including those in Los Angeles. The inner loop section of IH 10 would be no exception. By 1963 right-of-way had been cleared and construction was underway. On April 18, 1966, a 3.5-mile (5.6 km) segment of eight-lane freeway east of downtown was opened from US 59 to the previously completed freeway at Wayside Drive. The chairman of the Texas Transportation Commission, Herbert Petry, remarked that the freeway is "of the most modern design." The freeway featured a long section depressed below grade and a long section elevated on embankment, eliminating the frequent overpass humps found on many Houston freeways. The freeway incorporated the latest safety features, including breakaway signs, reflective lane markers, raised markers on emergency shoulders to alert straying vehicles, and illumination fixtures integrated into the median barrier.[108]

Modernizing the Antiquated Freeway

With the April 1966 opening of the inner loop section, the East Freeway was complete. However, the older sections of the freeway were built to low standards and by 1970 reconstruction and expansion were needed. The 1970s transportation funding crisis and new federal regulations delayed the start of major reconstruction work until 1976. The freeway would be expanded to eight main lanes from Loop 610 to Beltway 8 and to six main lanes from Beltway 8 to the San Jacinto River Bridge. Gaps in the frontage roads would be closed. Work on the expansion proceeded very slowly, leaving the East Freeway in a seemingly perpetual state of a construction war zone. This was the first comprehensive major reconstruction of

Construction: This view looks east near Waco Street on December 3, 1964. (Photo: TxDOT)

Downtown approach: This view looks west with the Waco Street overpass just ahead. (Photo: July 2002)

Beltway 8 interchange: This view looks southeast with the East Freeway crossing from lower right to upper left. This interchange was completed in 1994. (Photo: September 2002)

a Houston freeway, and traffic management techniques for reconstruction were inadequate or nonexistent. Local officials complained about poorly marked detours, dangerous ramps, large potholes in the pavement, and 10-foot (3 m) drop-offs inches away from traffic lanes. The complaints prompted an official inquiry into the project by the Texas Legislature in 1980. Construction would drag on until 1985.[109]

In the 1990s work focused on the interchanges with Loop 610 and Beltway 8. In 1993 improvements in the vicinity of the Loop 610 interchange were completed. The interchange at Beltway 8 was completed in 1994. Unlike the other Beltway 8 stack interchanges, the stack at the East Freeway is a four-level design rather than a five-level design, but still a very impressive structure. In 1998 the East Freeway received validation as a major traffic artery by breaking the 200,000-vehicle-per-day barrier at a point just outside Loop 610. Future work on the East Freeway will complete the interchange at Loop 610 and the Crosby Freeway, adding the fifth leg (the Crosby Freeway) to the interchange. East of Houston, sections of freeway with only four main lanes will be upgraded to six main lanes. The entire corridor is slated for a comprehensive study to determine long-term improvements. The study is expected to be underway by 2004.

Northwest Freeway, US 290

If any Houston freeway is deserving of a big yawn, it's the Northwest Freeway. There is nothing particularly interesting about its history, its associated urban development, or the freeway itself. In spite of being relatively new, it is one of Houston's smallest freeways. The only notable feature of the Northwest Freeway corridor is the huge stack interchange at Beltway 8. In 1999 a *Houston Chronicle* report on the freeway stated, "The Northwest Freeway is, in some senses, the anonymous freeway. Unlike others in Houston, it doesn't extend all the way downtown. It isn't part of a major national corridor like an interstate. It was built and opened in small chunks in four different decades and simply carries huge numbers of commuters from the northwest suburbs to their jobs." [110]

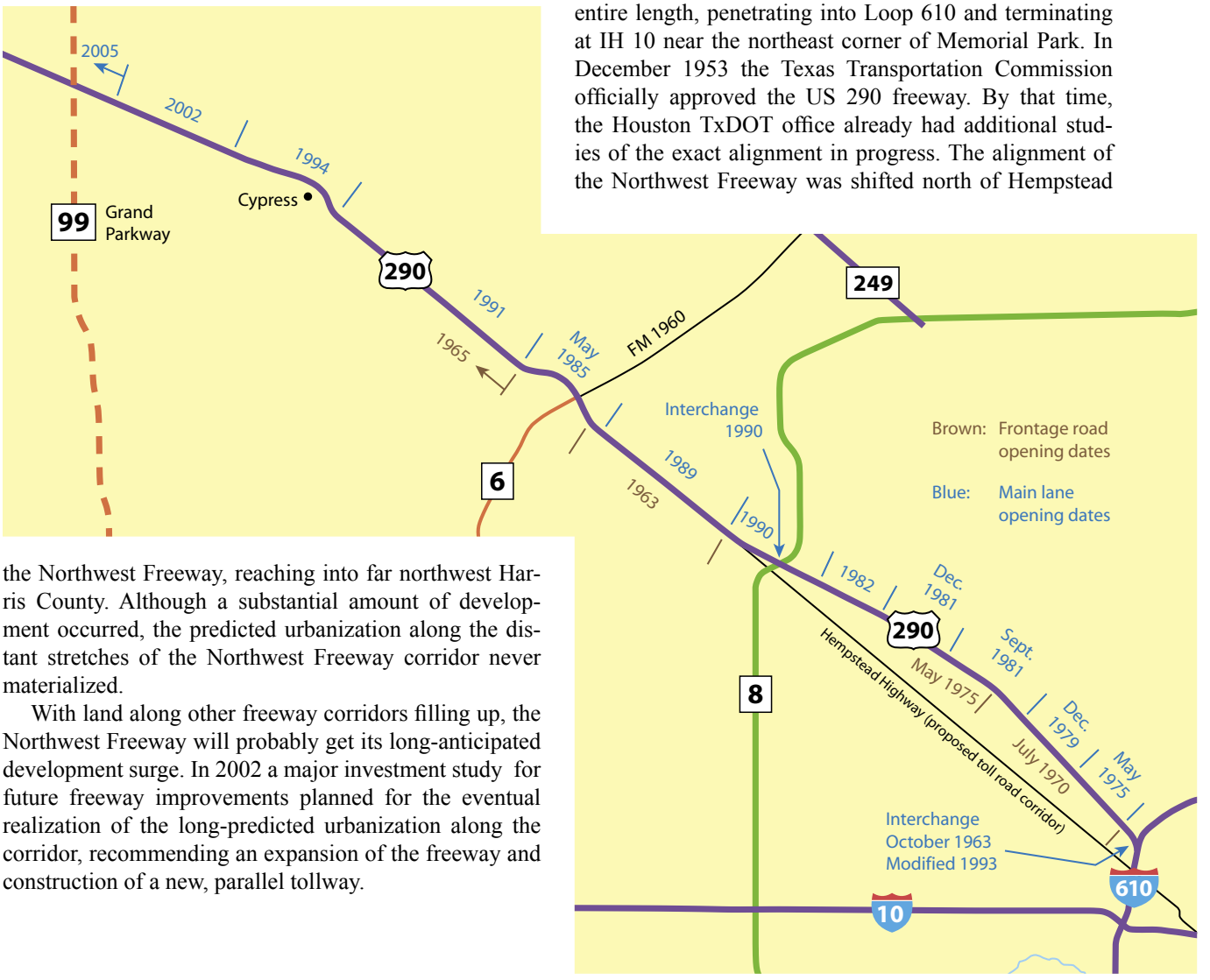
The potential for even more commuters, however, may just propel the Northwest Freeway to become a prominent freeway someday. City of Houston planning maps dating back to the 1960s suggested that urban sprawl in Houston would spread most quickly towards the northwest along the Northwest Freeway, reaching into far northwest Harris County. Although a substantial amount of development occurred, the predicted urbanization along the distant stretches of the Northwest Freeway corridor never materialized.

With land along other freeway corridors filling up, the Northwest Freeway will probably get its long-anticipated development surge. In 2002 a major investment study for future freeway improvements planned for the eventual realization of the long-predicted urbanization along the corridor, recommending an expansion of the freeway and construction of a new, parallel tollway.

Northwest Freeway	
Designated as freeway	1953
First freeway section open	1963 (Loop 610 interchange) 1975 (main lanes)
Freeway complete	Scheduled 2005
Reconstruction	none
Max traffic volume, 2001	245,000 vehicles per day
Future construction	Long term widening from Loop 610 to Grand Parkway; potential toll road along Hempstead Highway

Origins

The Northwest Freeway was added to the Houston freeway system during the development of the first comprehensive freeway plan for Houston, which was presented to the Texas Transportation Commission in July 1953. The 1953 plan showed the Northwest Freeway aligned along the present-day Hempstead Highway for its entire length, penetrating into Loop 610 and terminating at IH 10 near the northeast corner of Memorial Park. In December 1953 the Texas Transportation Commission officially approved the US 290 freeway. By that time, the Houston TxDOT office already had additional studies of the exact alignment in progress. The alignment of the Northwest Freeway was shifted north of Hempstead



Freeway beginning: This December 1964 view looks northwest along the freeway at the Loop 610 interchange, where the freeway begins. Of all Houston's freeways, the Northwest Freeway holds the distinction of having the longest running, most drawn-out construction phase. The freeway was completed piece by piece through the 1970s, 1980s, 1990s, and 2000s. In 2003 work is in progress to build the freeway main lanes in far northwest Houston near the planned Grand Parkway. (Photo: TxDOT)

Highway between Loop 610 and Beltway 8. In addition, the revised alignment terminated the Northwest Freeway at Loop 610 without extending it inside the loop. When the near-final version of Houston's freeway plan emerged in 1954, the Northwest Freeway was shown on its present-day alignment.[111]

In March 1959 a public hearing was held for the construction of the Northwest Freeway from Loop 610 to FM 1960-SH 6, but construction was far from imminent. Building the freeway would be a slow-motion affair playing out over a long period of time, with construction of freeway main lanes not even beginning until the 1970s. A very short section of the freeway that was part of the Loop 610 interchange was opened in October 1963. After that, the Northwest Freeway was dormant for many years. The first section of frontage roads, from near Loop 610 to Pinemont, halfway to Beltway 8, was opened in 1970. In 1975 the frontage roads were extended to near Beltway 8. Also in 1975, the first section of freeway main lanes opened, a one-mile (1.6 km) section just west of Loop 610. Construction of the Northwest Freeway would proceed slowly during the 1970s, 1980s, and 1990s, with main lanes completed to Cypress in far northwest Houston in 1994. The only distinguishing feature of the Northwest Freeway, the huge interchange with Beltway 8, was completed in 1990. The Northwest Freeway transitway lane, which was built on the location of the interior shoulders, was opened in two phases in 1988 and 1990. In 2003 work continues to slowly extend the freeway westward and convert the remaining highway section in northwest Harris County to a freeway.[112]

It is somewhat surprising that most of the Northwest Freeway was constructed to relatively poor design standards with only six main freeway lanes. Houston's other freeway planned at about the same time—the South Freeway—is far more advanced in terms of design and has provisions for far more capacity. The Northwest Freeway, it seems, was the last hurrah for early 1960s freeway design and capacity.

In 2002 a major investment study of the Northwest Freeway corridor was completed. The study recommended the expansion of the freeway to 10 main lanes between Loop 610 and Beltway 8, and to 8 main lanes outside Beltway 8 to the Grand Parkway. The study also recommended the construction of a new tollway/managed lane facility along the Hempstead Highway corridor from Loop 610 to the Grand Parkway. The study indicated a need for a 4-lane tollway facility, as well as provisions for future transit facilities. If constructed, the new tollway would make the Northwest Freeway corridor similar to the North Freeway corridor with both a freeway and a separate tollway. Outside Beltway 8, where the Northwest Freeway follows the Hempstead Highway alignment, the combination of the two facilities on adjacent rights-of-way will make the Northwest Freeway a very wide and impressive freeway corridor. So maybe someday, the Northwest Freeway will qualify to be among the best of Houston's freeways.

Too small, but relief on the way (someday): In spite of being relatively new, the Northwest Freeway was constructed to very low design and capacity standards with only 6 main lanes for most of its length. This view looks east along the Northwest Freeway toward downtown and shows the regular afternoon traffic backup on the freeway. In 2002 a study recommended widening this section of the freeway to 10 main lanes and the construction of a parallel tollway. Major construction will likely occur after 2010, although the tollway could be constructed sooner. (Photo: September 2002)

Northwest Freeway-Beltway 8 interchange: Although the Northwest Freeway itself is not impressive, the huge interchange at Beltway 8 is one of Houston's most impressive stack interchanges. The interchange was completed in 1990. This view looks northwest along the Northwest Freeway. The ramp in the center of the freeway (with the van and two vehicles) provides access to the transitway and is not part of the interchange. (Photo: March 2003)

Hardy Toll Road

If any major transportation facility in Houston can be attributed to the efforts of one individual, it is the Hardy Toll Road. Jon Lindsay made this project happen. Not only did then Harris County Judge Lindsay make the Hardy Toll Road happen, but he did it in the face of substantial opposition to the project. Building an all-new, limited-access transportation facility is a big accomplishment in the modern era. Doing it nearly single-handedly is even more impressive.

The product of Jon Lindsay's efforts is a facility that is somewhat unusual in Houston. Unlike the Sam Houston Tollway, the Hardy Toll Road was not part of Houston's original freeway plan, so it exhibits none of the characteristics associated with a Houston freeway. No conventional frontage roads. No commercialization. No billboards. An almost parkway-like feel at the northern end. And except during rush hour, no heavy traffic. For most of its existence since its opening in 1987, the Hardy Toll Road did not pull its weight financially. But by 2002 it had approached or exceeded financial self-sufficiency. The Hardy Toll Road has served the important role of providing a relief for the North Freeway—something that motorists on Houston's other crowded freeways can only dream about. It has

Hardy Toll Road	
Designated as tollway	1983 (voter approval)
First segment open	September 20, 1987
Tollway complete	Scheduled 2007 (downtown extension)
Max traffic volume, 2001	58,000 vehicles per day
Future construction	Downtown extension, reconstruction and widening north of Beltway 8, possible northward extension

provided an express route from central Houston to the far northern suburbs, ending practically at the doorstep of the Woodlands, Houston's perennial leader in new housing construction.

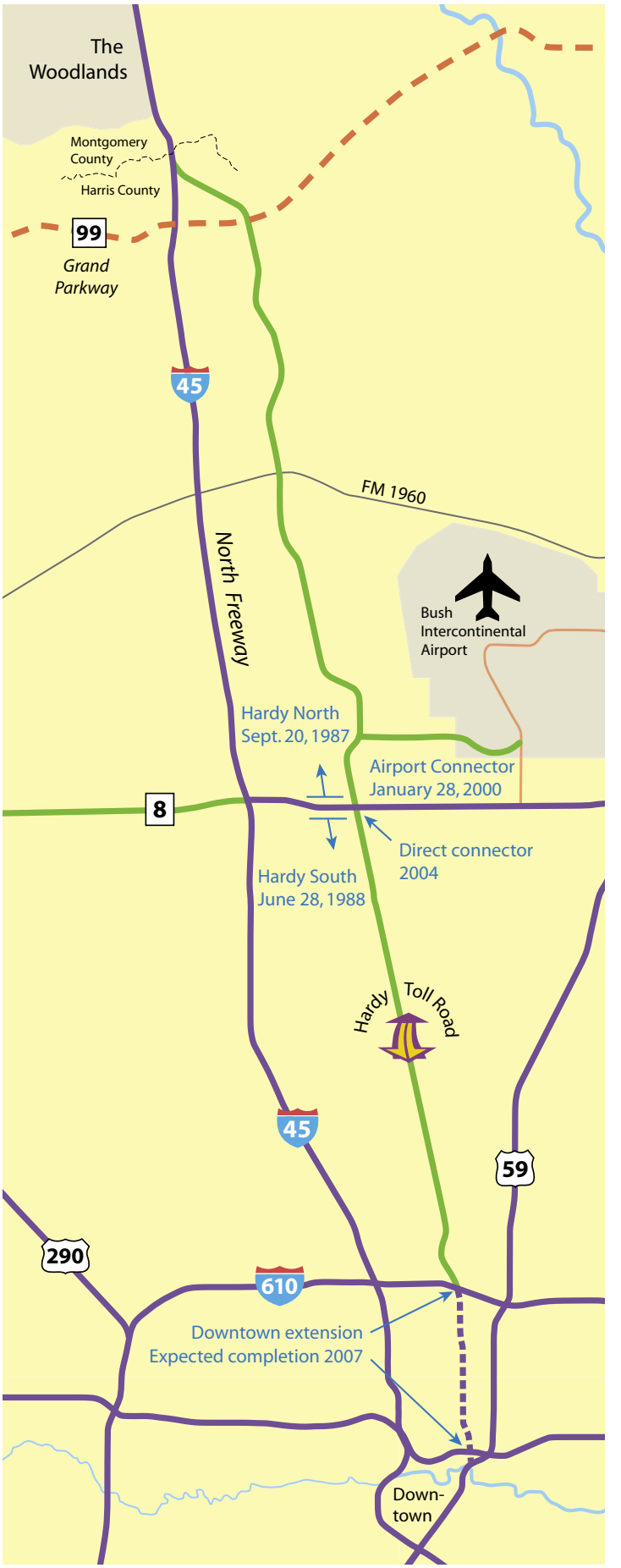
Origins

The Hardy Toll Road was first mentioned as a possible tollway in the 1970 Texas Turnpike Authority (TTA) annual report. However, the project did not move beyond the discussion phase at the time. By the mid-1970s there was a renewed interest in tollways as Houston descended into a traffic crisis and public funding for new freeways was dramatically reduced. In the mid and late 1970s local officials asked the TTA to study several projects in the Houston area, including the Hardy Toll Road. In October 1979 Wilbur Smith and Associates completed an initial feasibility study of three potential toll road projects in Houston: the Hardy Road corridor, the Westpark Drive corridor, and the Harrisburg Boulevard corridor. The Harrisburg corridor was the extension of the SH 225 La Porte Freeway into downtown, a freeway project that had recently been cancelled by TxDOT. The study concluded that the Hardy Road project had the best potential of the three projects and "would appear to warrant further study." The Westpark Drive project was not recommended for further study at the time, and the Harrisburg route was declared to be infeasible as a tollway.[113]

The potential feasibility of the Hardy Toll Road was good news to many. The nearby North Freeway (IH 45) was severely congested, and the Metropolitan Transit Authority (Metro) had recently begun a contraflow lane project in a desperate effort to provide some relief to the corridor. Running parallel to the North Freeway about 1.5 miles (2.4 km) to the east, the Hardy Toll Road would provide an alternate route for commuters on the North Freeway. It was also very attractive to real estate interests in far north Houston.

But the proposed Hardy Toll Road was not attractive to everyone, and by early 1980 substantial opposition was developing. Further complicating the issue were plans by Metro to construct a rail system. The Hardy Road corridor was the leading candidate for a north side rail line. A tollway in the corridor had the potential to preclude rail service, throwing Metro's entire rail project into limbo.* Lining up against the project were United States Congressman Bob Eckhardt, State Representative Gene Green, and Houston City Council members Dale Gorczynski, Ernest McGowen, and Ben Reyes. The Metropolitan Organization, an organization representing inner-city interests, was strongly against the Hardy Toll Road and actively worked against the project.[114]

On July 29, 1980, the TTA entered into an agreement with a consulting firm to perform a preliminary engineering feasibility study for the corridor. After hearing the opposition from the Metropolitan Organization, Harris



* The final design for the toll road included a right-of-way set-aside for a potential future rail line.

Alongside the railroad: The Hardy Toll Road follows the Union Pacific railroad tracks inside Beltway 8. The railroad and adjacent high-voltage right-of-way made the corridor ideal for the tollway, minimizing the displacements required for its construction. Nevertheless, there was a substantial amount of opposition to the tollway in the inner city. (Photo: September 2002)

County Commissioners Court, with Judge Jon Lindsay absent, voted 4-0 to oppose the toll road on August 7. Upon his return, Lindsay introduced a measure in support of further studies which passed on a 3-2 vote on August 25.[115]

During 1981 and 1982 positions hardened on both sides of the issue. The classic battle that had played out all across the nation during the 1970s took shape once again. Low-income inner-city interests opposed the facility and the displacements it would cause, instead favoring mass transit solutions. The inner-city interests perceived the tollway as benefiting affluent, predominantly white suburban areas. A Hispanic editorial columnist for the *Houston Post* summarized the feelings of many when he wrote, "There is perhaps nothing more galling in covering minority community affairs than to watch as county and city officials use their positions to benefit the well-to-do affluent suburbs rather than improve conditions in barrios like the northside." Lining up in favor of the tollway were politicians and civic groups representing suburban areas, the Houston Chamber of Commerce, and the project's staunchest supporter, Jon Lindsay.[116]

With all the controversy raging, Lindsay pointed out, "It's an ideal corridor. The benefits [of the toll road] are tremendous." Since it followed a railroad corridor that had an adjacent high-voltage easement for much of the route, the displacement of property along the corridor would be minimal. It truly was an ideal corridor for a new transportation facility. For its 21.6-mile (34.6 km) length, the project would displace only 70 residences, 54 businesses, and two churches. Of those 70 residences, 6 were mobile homes and 4 were abandoned houses. Inner-city neighborhoods would get crossings over the busy railroad track, better connecting the neighborhoods separated by the existing corridor.[117]

Unusual for Houston: The northern section of the Hardy Toll Road does not have frontage roads, preventing the proliferation of commercial development. Parts of the tollway are like a parkway as it passes through forests. (Photo: March 2003)

By late 1982 it appeared that the opposition would succeed in killing the project. On November 9, 1982, Houston Mayor Kathy Whitmire publicly stated her opposition to the project, saying that no city funds should be used and resources should instead be channeled toward a rail system: "I oppose building the toll road because it would compete with the rail system and in fact preclude the rail system from being built, and I want to see the rail system built." The TTA's detailed study of the corridor was now complete and concluded that the tollway was feasible, but on November 10, 1982, the *Houston Post* reported that the TTA was planning to drop the project due to lack of support from the city of Houston and Metro. About the same time, Lindsay was publicly stating that if the TTA would not build the project, Harris County would attempt to proceed on its own.[118]

It was time for Jon Lindsay to step up to the plate and get the tollway built. First, however, new legislation would be needed to enable the county to take over the project. That came with Texas Legislature Bill SB970, signed by Governor Mark White in June 1983. In the meantime, the Metropolitan Organization and its supporters continued efforts against the toll road. On April 28 an anti-tollway crowd estimated at 1,200–2,000 attended a meeting featuring Governor Mark White.[119]

Lindsay pushed the Harris County Toll Road Authority forward as fast as he could. A $900 million bond referendum for the creation of the Harris County Toll Road Authority (HCTRA) was placed on the ballot for a special election on September 13, 1983. On August 24 Houston City Council endorsed the Hardy Toll Road on a 13-2 vote. The Houston Board of Realtors sent a letter to its membership in support of the bond issue, stating, "Its passage is vital to the solution of the horrendous traffic situation in our city and county." Most Harris County voters shared the view of the realtors and were influenced by the severe traffic congestion afflicting the area. The $900 million bond issue passed with 69.7% of the 137,161 votes cast. The Hardy Toll Road and the western Beltway 8 tollway would be built.[120]

Building the Tollway

The design of the Hardy Toll Road was based on the December 1982 detailed design report which had been prepared by HNTB consultants for the TTA. The recommended feasible section was a 21.6-mile (34.6 km) segment from Loop 610 to IH 45 near the Harris-Montgomery County line. At the south end the report recommended terminating the tollway at Loop 610 due to the high number of displacements and high cost of extending the facility into downtown, which was estimated at $115 million in 1982, approximately 204 million in 2003 dollars. The report concluded that the existing freeways and streets between downtown and Loop 610 would be adequate to handle the traffic. On the north end an extension into Montgomery County had been considered and mapped out in detail but was ruled infeasible. The tollway would connect with IH 45 just south of the Harris-Montgomery County line, keeping the entire project within Harris County.

A ground breaking ceremony for the Hardy Toll Road was held in September 1984. The north section from Beltway 8 to IH 45 opened on September 20, 1987. The south section from Beltway 8 to Loop 610 opened on June 28, 1988.

Looking for Drivers

It didn't take long before the traffic pattern on the Hardy Toll Road became evident. In the morning there was a surge of traffic going into Houston. In the evening there was a surge of traffic headed for the suburbs. The rest of the time the Hardy Toll Road was nearly empty. In 1990 the head of the Houston TxDOT office observed, "The problem with the Hardy is that in the off-peak hours there is almost nothing there." During off-peak hours motorists preferred to use the toll-free North Freeway. A commuter traffic load would not be enough to pay the bills.[121]

By 1989, just a year after the completion of the Hardy Toll Road and the first segment of Beltway 8, it was unclear if revenue on the Harris County Toll Road system would be sufficient to cover bond payments. Revenue was running more than 50% lower than 1984 estimates. The need for a subsidy from the Harris County general tax fund was a distinct possibility. A financial crisis was averted by a dramatic increase in systemwide toll collections in the 1990s. However, the increase in revenue was driven by the phenomenal success of the western sections of the Sam Houston Tollway. In 1998 the Hardy Toll Road still was not paying for itself, according to a July 1998 analysis of Hardy Toll Road revenue by the *Houston Chronicle*. The report showed annual expenses (bond payments and operating costs) of $30.1 million and toll revenue of $20.4 million, indicating that a 48% increase in toll-paying traffic was needed to close the revenue gap. By 1998 HCTRA had achieved a very strong financial position, so the shortfall was easily covered. Patronage of the Hardy Toll Road increased 50% from 1997 to 2001, and the Hardy Toll Road was at or near financial self-sufficiency by 2002. HCTRA operates its finances on a systemwide basis and does not provide detailed financial information for each facility.[122]

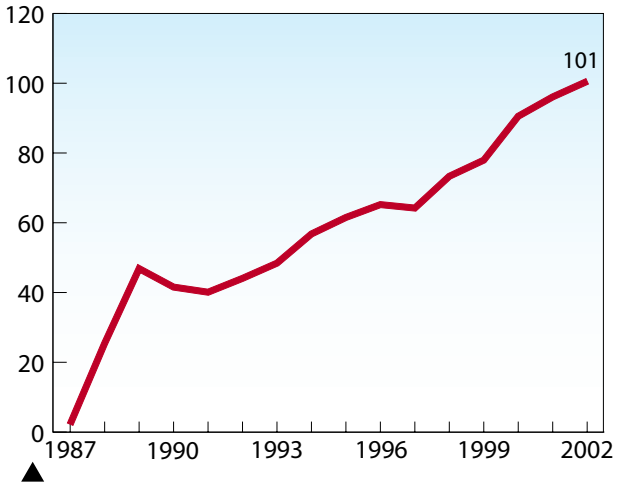
In the late 1990s Harris County was able to move forward with projects to fully integrate the Hardy Toll Road into Houston's transportation system. The airport connector was studied as part of the original 1982 design study but was not included in the original construction of the toll road. For most of the 1990s the project was frequently discussed but did not move forward. Finally on August 25, 1998, Harris County awarded the first construction con-

The unbuilt: The 1982 engineering study for the Hardy Toll Road considered a section of tollway north of the present terminus. The study determined that the north section was financially infeasible. The northern extension remained an item under study in 2003. If constructed, the northern extension is expected to follow a different alignment than the one proposed in the 1982 study. (Source: *Hardy Tollway Preliminary Engineering Feasibility Study.*[123])

tract for the airport connector. The $41.7 million project was opened on January 28, 2000, and features a full interchange with connectors at the intersection with the Hardy Toll Road. Also in the late 1990s work began to expand lane capacity on the Hardy Toll Road north of Beltway 8. Sections experiencing congestion were widened to three lanes in each direction. A direct connector ramp at Beltway 8 is under construction in 2003 and is scheduled for completion in 2004.

In the early 1990s there was an effort to extend the Hardy Toll Road into downtown Houston. The project was declared dead by Lindsay in September 1994 because Metro was not willing to make a substantial financial contribution to the project. The project came back to life in 1999 when HCTRA initiated new engineering studies for the corridor. A preliminary design was complete by October 2000, and in 2001 TxDOT agreed to contribute $17 million to the estimated $101 million project cost. As of 2003, plans were being developed to construct the Hardy Toll Road extension as a toll-free facility. Delays in right-of-way acquisition and railroad relocation have pushed back the expected start of construction to 2005, with completion around 2007. In May 2003 HCTRA launched a new feasibility study of the far north section of the tollway, originally considered in 1982. The potential 10-mile (16 km) extension would start at the present northern terminus and extend north to Conroe.[124]

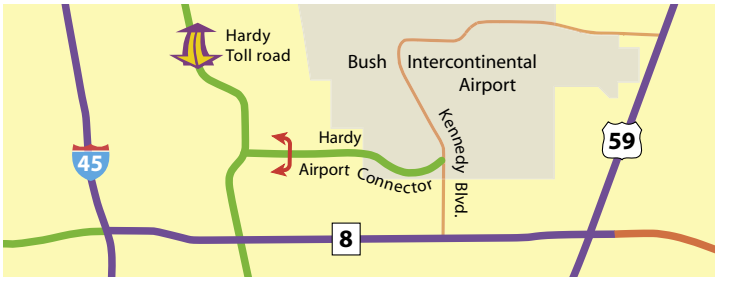
The Hardy Toll Road has certainly required more patience and nurturing than the go-getting Sam Houston Tollway. As HCTRA better integrates it into Houston's freeway system and urbanization north of Houston continues, the Hardy Toll Road will become an increasingly important part of Houston's transportation network.



Hardy Toll Road Average Daily Vehicle Transactions, thousands
Sum of traffic for north and south main toll plazas
Data: Harris County Toll Road Authority

Revenue laggard no more: During its early years the Hardy Toll Road was known for its lack of traffic and toll revenue that didn't meet projections. Patronage steadily increased during the 1990s and by 2002 the tollway had approximately reached financial self-sufficiency.

Airport connector: The Hardy Toll Road airport connector opened in January 2000. This view looks west with Hardy Toll Road interchange in the distance. (Photo: November 2002)



Crosby Freeway, US 90

In 1954 Houston's core freeway network was defined and construction progressed quickly on most of the freeways. But there was one freeway in the original plan that was left behind in the construction spurt of the 1960s: the Northeast Freeway. Nearly 50 years later the Northeast Freeway, which was renamed the Crosby Freeway in 1988, still remains unfinished. The Crosby Freeway may have been left behind, but it was not forgotten. The freeway outside Beltway 8 was completed in 1991, and most of the remaining section is scheduled for construction before 2010, although much of it may have frontage roads only.

The first proposal for Houston's freeway master plan, presented to the Texas Transportation Commission in July 1953, showed the Northeast Freeway following the alignment of McCarty Road and the present-day Beaumont Highway (see map on page 13). The original plan also extended the freeway inside Loop 610 to a terminus on IH 10. The final plan, which was formulated in early 1954, placed the Northeast Freeway in its general present-day alignment, beginning the freeway at the intersection of Loop 610 East and IH 10. The Northeast Freeway went into a state of dormancy after its initial inclusion in the freeway plan. There was very little development in northeast Houston, so there was no pressing need to move forward with construction. In 1961 a TxDOT study recommended the long-term upgrading of US 90 to a controlled-access freeway.[125]

In 1966 planning began for the Northeast Freeway. The Texas Transportation Commission designated it as a controlled-access freeway in March 1966. A public hearing on the alignment of the proposed freeway was held on April 18, 1966, and based on public input, the alignment was adjusted and approved by the Transportation Commission in October 1966. TxDOT and Harris County entered into an agreement in November 1971 in which Harris County would be responsible for right-of-way acquisition and TxDOT would be responsible for construction. By 1972 local interests were pushing for the construction of the Northeast Freeway from Crosby to the present-day Beltway 8 because of the need for a modern crossing at the San Jacinto River. One of the factors that slowed progress of the freeway, lack of development in the region, turned out to be very beneficial for the design. A wide right-of-way corridor was easily acquired.[126]

In 1975 it looked like construction would begin when the Texas Transportation Commission authorized funds for construction of the frontage roads near the freeway's beginning at the interchange with Loop 610 and IH 10. But in March 1975, funds were diverted from the Northeast Freeway to the South Freeway (SH 288). TxDOT was at the peak of its financial crisis in 1975 and a reevaluation of the department's priorities placed the Northeast Freeway near the back of the line for construction funding. The Northeast Freeway once again went into dormancy.[127]

The Northeast Freeway came back to life in the late 1980s. In 1987 funding was finally in place to begin construction from Beltway 8 to the city of Crosby, about nine miles (14 km) east. In late 1987, the Crosby-Huffman Chamber of Commerce began lobbying to change the name of the freeway from the Northeast Freeway to the Crosby Freeway to increase awareness of the community of Crosby and help promote development. Harris County agreed to the request in December 1987. On February 25, 1991, the first section of the Crosby Freeway was opened. The freeway was constructed without frontage roads for most of its length due to the lack of development along the freeway corridor. In 2002 a short extension near Crosby was completed.[128]

The need for the section of freeway inside Beltway 8 was minimized by the completion of the Beltway 8 main lanes between the Crosby Freeway and IH 10

Crosby Freeway	
Previous designation	Northeast Freeway (1956-1987)
Designated as freeway	1966
First segment open	February 25, 1991
Freeway complete	Estimated after 2010
Max traffic volume, 2001	26,000 vehicles per day
Future construction	Frontage roads and main lanes inside Beltway 8; connections at interchange with IH 10 and Loop 610

Crosby Freeway: This view looks east along the semi-rural freeway. (Photo: September 2002)

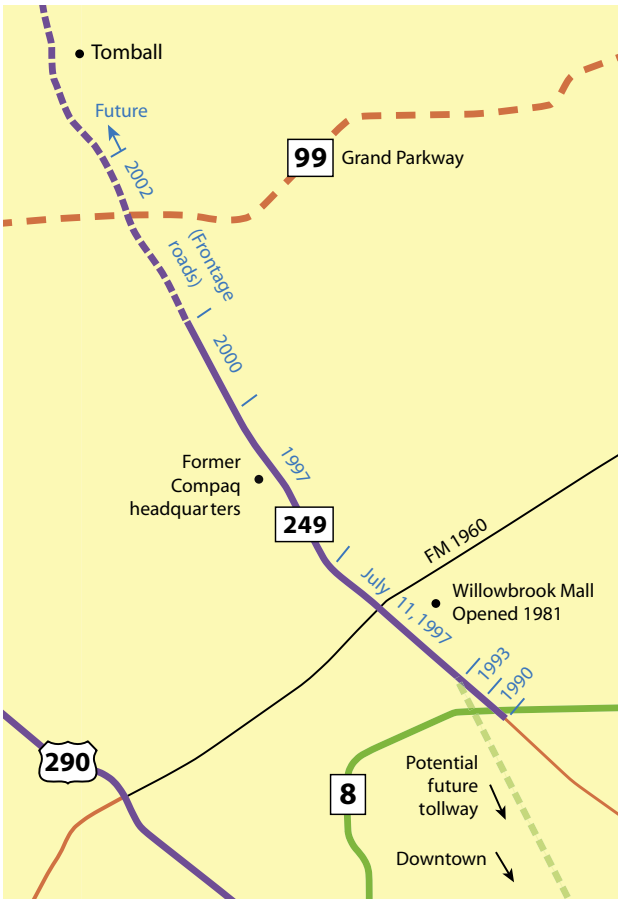
in 1994, which provided an alternate freeway route into Houston. Inside Beltway 8 only a small section of frontage roads exists along a section of the freeway that shares its route with the C. E. King Parkway. The next wave of construction on the Crosby Freeway is scheduled to begin in 2005 and will complete the freeway between Beltway 8 and Loop 610. Initially frontage roads will be constructed. Someday, probably between 2010 and 2020, the main lanes will be constructed and the Crosby Freeway will be completed.

Awaiting the final push: The Crosby Freeway grinds to a halt just inside Beltway 8. This section has stood idle since 1991, and it could be 10 years or more before the main lanes are pushed westward toward Houston. (Photo: June 2003)

June 2005 Update: An effort by TxDOT to toll the entire SH 249 freeway failed in October 2004 due to public opposition. Future northward extensions of the freeway will be tolled, however.

Tomball Parkway, SH 249

Tomball Parkway	
Previous designation	FM 149
Designated as freeway	1988
First segment open	1990
Freeway complete	Estimated after 2010
Max traffic volume, 2001	115,000 vehicles per day
Future construction	Extend freeway north, ultimately to Navasota; possible toll road extension inside BW 8



In May 1988 a group of Houston's key transportation policymakers met secretly in a downtown conference room. One after another, the top officials committed millions of dollars to a new transportation initiative to benefit a key local interest. An hour and a half later, when the dealing was done, $235 million had been put on the table. Included in the bag of goodies was acceleration of a brand-new, $253 million freeway.[129]

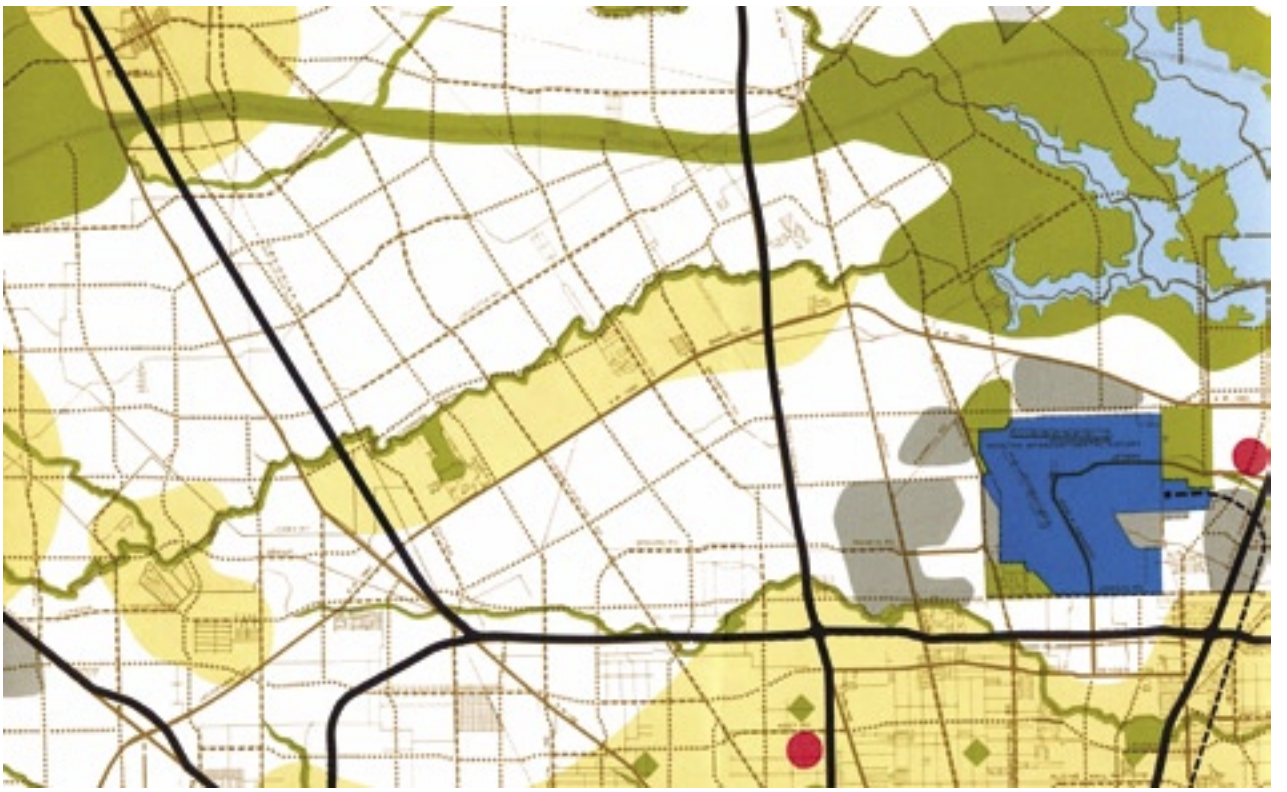
Why the secrecy? Why the big money? To these officials, nothing less than the economic future of Houston was at stake. Houston's economy had been devastated by the collapse of oil prices in the mid-1980s, but there was one shining star on the Houston economic landscape: Compaq Computer. Since its founding in February 1982, Compaq Computer had become one of the fastest-growing startups in the history of American business, generating about 4,000 new jobs in Houston by 1988. Compaq had even bigger plans for expansion, but there was no assurance that the new production would stay in Houston. Transportation was a big issue for Compaq, which was served by inadequate country roads in far northwest Harris County. The new freeway was the crown jewel in a comprehensive incentive package designed to keep Compaq's expansion in Houston. Key local officials kept their efforts secret so as not to tip off competing cities which were also offering packages. On June 1, 1988, top local officials offered their deal to Compaq. Compaq officials were amazed. They would stay in Houston, and Houston would get an all-new freeway.

Origins

The Tomball Parkway corridor had historically been Farm-to-Market Road (FM) 149, a rural road crossing through the pine forests and pastures of northwest Harris County. Approximately halfway between the US 290 Northwest Freeway and IH 45 North Freeway, it seemed to be an ideal location for a freeway. But all the official transportation plans had passed over the FM 149 corridor, never designating it as a freeway. The only document identifying a need for a freeway in the corridor was the city of Houston's *Houston Preliminary General Study Plan for 1990*, an artist's depiction of potential future roads, parks, and land usage published in 1968. The map showed a freeway starting at Beltway 8 and proceeding northward just east of FM 149. The FM 149 freeway was gone from a similar map published in 1972.

During the 1970s, as financial woes forced the cancellation of several planned freeways, there was no chance of adding new freeway routes to the planned system. In February 1982 a key event occurred that would ultimately lead to the construction of the Tomball Parkway freeway: Compaq Computer was founded. Compaq initially focused on portable personal computers which were compatible with the IBM standard. The first bulky portable computers were shipped in January 1983. Over the next few years Compaq delivered record-setting revenue growth and in 1986 joined the Fortune 500 faster than any company in history at the time. The initial phase of the Compaq main campus on FM 149 was completed in 1986.[130]

The explosive growth of Compaq Computer and expanding development in the area were soon putting FM 149 under heavy traffic pressure. By the time officials were preparing the incentive package in 1988, it was clear that a freeway would be needed to meet traffic demand. One of the key participants in the May 1988 meeting where the transportation incentive plan was developed was Houstonian and Texas Transportation Commissioner John Butler. Butler quickly secured official state approval of the 19-mile (30 km), $253 million freeway on June 28,



First signs of the Tomball Parkway: This 1968 map published by the city of Houston titled *Houston Preliminary General Study Plan for 1990* appears to be the first recognition that a freeway would be needed in the corridor. The 1968 map was not an official transportation planning document, but an artist's depiction showing potential future roads, parks, and land use. The freeway in the SH 249 corridor was gone from a similar 1972 map.

1988. The freeway was envisioned as part of a freeway corridor that would ultimately extend all the way to College Station, 100 miles (160 km) northwest of downtown Houston. In conjunction with the official freeway designation, the route number for the freeway was changed to State Highway (SH) 249. The corridor was already known as the Tomball Parkway, and this designation was retained even though the SH 249 freeway would have continuous frontage roads and few, if any, parkway-like qualities.[131]

Construction could not begin immediately, however. As with all projects, it would need to wait in line for available funds. Also, a substantial amount of right-of-way acquisition would be necessary to clear the corridor for the freeway, which generally required a 350-foot-wide (107 m) right-of-way strip. In the vicinity of the FM 1960 intersection, many businesses and strip shopping centers would need to be purchased and cleared.

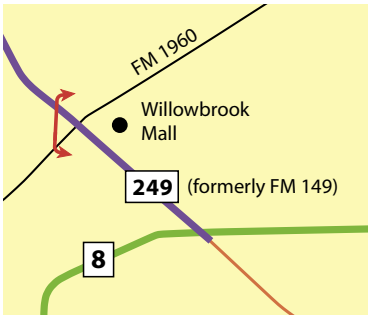
Before the freeway could be built, there was considerable pain for local motorists. Traffic on the Tomball Parkway continued to increase rapidly and by the early 1990s the intersection of the Tomball Parkway and FM 1960 had become the most severely congested in Houston. Freeway construction began in conjunction with the Sam Houston Tollway main lanes in the late 1980s. The main lanes at the Sam Houston Tollway intersection were completed in 1990. A short section of the freeway, an overpass just north of Beltway 8, opened in 1993. Then after four agonizing years of construction, a long section of freeway including the FM 1960 intersection opened on July 11, 1997. The notorious traffic monster at FM 1960 and the Tomball Parkway had been tamed. In its place was a wide, modern freeway and a three-level interchange with FM 1960 passing below ground level.[132]

In the following years the freeway pushed northward one section at a time. As of 2003, about eight miles (13 km) of freeway main lanes and additional two miles (3.2 km) of frontage roads were open to traffic. A study to determine the alignment of the freeway north of Tomball was completed in 2002. Previously in 1999 the alignment of the future freeway to Navasota, approximately 80 miles (128 km) northwest of downtown Houston, had been identified.

In May 2002 the freeway's reason for being—Compaq Computer—ceased to exist as an independent company when it was purchased by Hewlett Packard in a highly controversial corporate takeover. As of 2003, it appeared that the former Compaq operations would remain an important part of Hewlett Packard. Whatever the long-term viability of the former Compaq operations may be, the Tomball Parkway is now the backbone of northwest Harris County and will help the region absorb any corporate downsizing. Construction of three direct connectors at the Beltway 8 interchange began in late 2002. Work on a bypass around Tomball is expected to begin in 2004, with the initial phase consisting of frontage roads only. Long-term plans of the Harris County Toll Road Authority show a potential toll road corridor aligned along a railroad track which would extend the Tomball Parkway inside Beltway 8 to Loop 610.

Reason for being: Compaq's phenomenal success and explosive growth after its founding in 1982 prompted the construction of a large corporate campus in 1986 along FM 149 (campus shown above). The rural FM 149 was soon overwhelmed, and plans for a freeway were approved in 1988. This section of freeway opened in 1997. Compaq computer was purchased by Hewlett Packard in 2002 in a highly controversial corporate takeover, but the Houston campus appeared to remain an important part of Hewlett Packard's operations. (Photo: May 2003)

(Opposite page) **Country crossroads no more:** The upper photo shows the intersection of FM 149, the predecessor to today's SH 249 Tomball Parkway freeway, and FM 1960 in October 1980. The view looks east with FM 149 crossing from lower left to upper right. FM 149 was still a two-lane rural roadway with some minor improvements in place at the FM 1960 intersection. But big changes were on the way. The construction of Willowbrook Mall was in progress, and Compaq Computer was founded in 1982. The success of Compaq Computer fueled a boom in the corridor and by the early 1990s the intersection of FM 149 and FM 1960 was the most congested in Houston. The SH 249 freeway at this location, shown in the lower photo, opened on July 11, 1997. (Photos: upper, Texas State Library and Archives Commission; lower, September 2002)



(Right) This view looks north along SH 249 with the FM 1960 intersection in the foreground. There are two pairs of braided ramps just north of FM 1960. (Photo: May 2003)

June 2005 Update: The Westpark Tollway opened on May 1, 2004, from its eastern terminus to Old Westheimer Road. A second segment from Old Westhiemer road to SH 6 opened in October 2004. Construction continues from SH 6 to the Grand Parkway. Fort Bend County has developed preliminary plans to extend the tollway west of the Grand Parkway.

Westpark Tollway

Near the beginning of Houston freeway time, when the freeway system was being created, planners drew a line on the master plan map all the way along the Westpark corridor to far west Houston. Soon afterwards most of that line was erased when the Southwest Freeway alignment was finalized. Many years later a vision of the Houston of the future showed a freeway in far west Houston, roughly along the Westpark corridor. That line was also soon forgotten. Years after that, the idea came back to life again and was officially studied, but then quickly faded away. But the dream of that west Houston freeway never died. Fifty-one years after that first line was drawn on the master plan map, motorists will take their first drive on the Westpark Tollway.

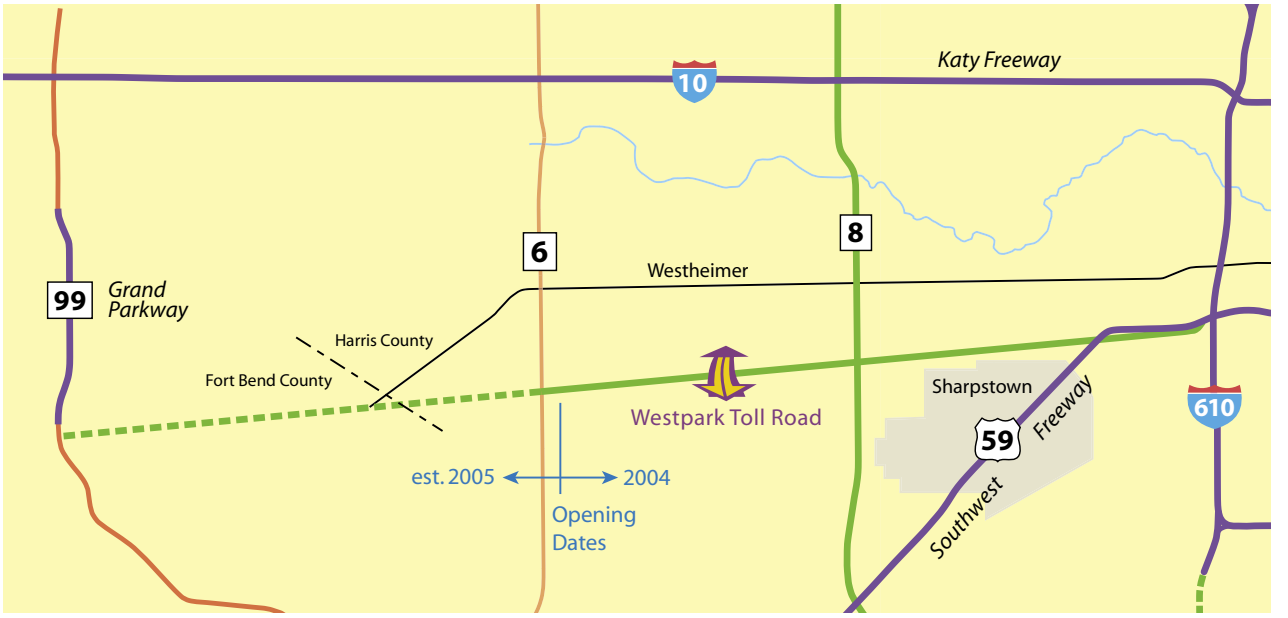
From the early 1950s to the mid-1990s, the idea of a major transportation facility along the Westpark corridor seemed to be a dream that simply couldn't get enough momentum to move beyond the concept stage. Even mass transit options for the corridor failed, including a heavy rail line defeated by voters in 1983 and a proposed monorail line in 1991. But finally in the 1990s, a series of events opened a window of opportunity for building the tollway, and barely—just barely—the tollway managed to seize the opportunity.

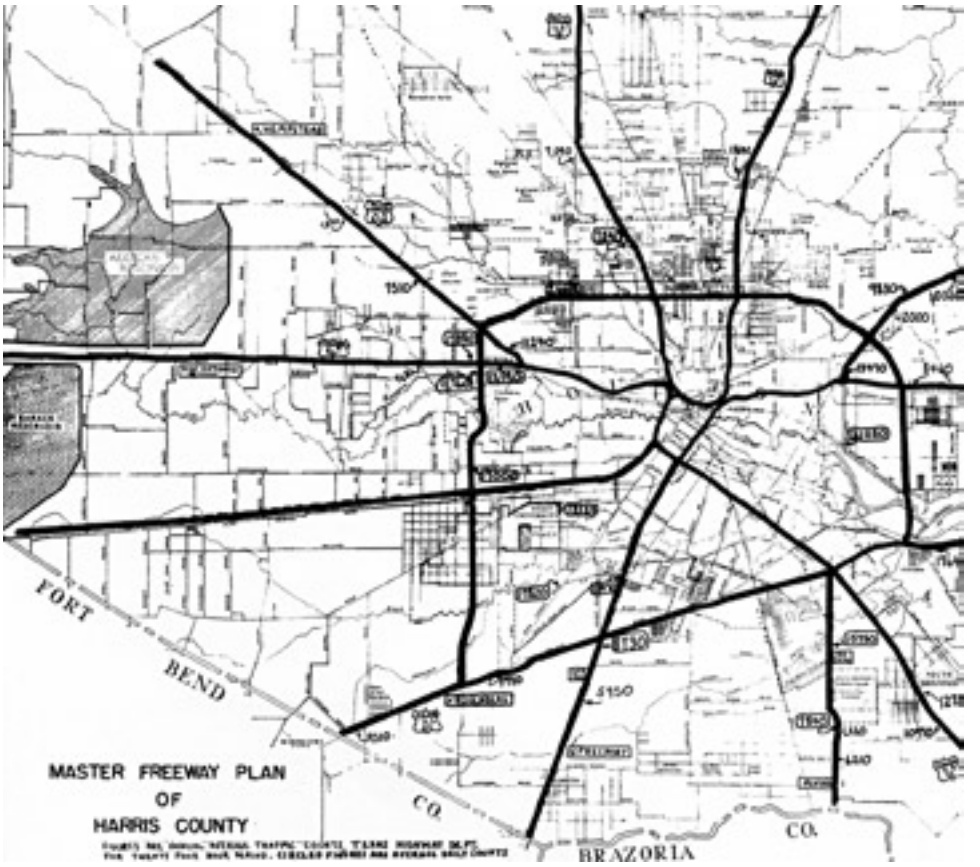
The Westpark Tollway is a very un-Houston-like facility. It is very narrow, with only four lanes for its entire length, and it is squeezed onto the tightest possible right-of-way. It seems more like something that would be built in a high-density urban environment such as New York City. But the Westpark Tollway probably represents the wave of the future for all-new transportation facilities in Houston. Small tollways with no more than six lanes will be squeezed into narrow corridors where there are few, if any, environmental issues. Funding will come from many sources, but toll revenue will be the key source. Size will be kept small to keep costs manageable. But is something small better than nothing? For west Houston interests which fought long and hard to make the tollway a reality, the answer is surely yes.

Origins

When Houston's freeway master plan was being formulated in 1953, the original plan presented to the Texas Transportation Commission that July showed a freeway along today's Westpark corridor all the way to far west Houston, following the San Antonio and Aransas Pass (S.A. & A.P.) Railroad and adjacent Alief Road. By late 1953, however, plans for the Southwest Freeway were being formulated, and by early 1954 the preliminary Southwest Freeway alignment was defined, roughly following the railroad to just west of Loop 610 then veering southward into Sharpstown, a huge real estate development that was about to be launched. The Alief Road freeway to far west Houston was not part of any major intercity highway system, and perhaps more importantly, it did not serve any powerful real estate constituencies that could promote and support it. So the freeway went southwestward to serve the Sharpstown community, and west Houston was left without a freeway.[133]

The next sign of life for a west Houston freeway came in 1968 when the city of Houston published a map titled *Houston Preliminary General Study Plan for 1990*, an artistic depiction of the existing and proposed roads, freeways, transit, parks, lakes, and development around Houston. The map showed the west Houston freeway starting at Beltway 8 just north of the railroad corridor, then proceeding west and southwestward to the Grand Parkway south of the railroad corridor. This freeway appears to have been just a fleeting line on a map, however. The next revision of the map, published in 1972, did not





An early casualty: This 1953 map of the proposed Houston freeway system shows a freeway along the full length of the Westpark corridor. By early 1954, the Westpark Freeway in west Houston had been deleted and replaced with the Southwest Freeway, which veered away from the Westpark corridor just west of Loop 610 and bisected the large Sharpstown real estate development.[134] (Source: Houston Chamber of Commerce/Greater Houston Partnership)

1968 freeway vision: A map published by the City of Houston Planning Department in 1968 titled *Houston Preliminary General Study Plan for 1990* showed a freeway in west Houston extending from Beltway 8 to the Grand Parkway, which is depicted by a linear park strip. The proposed alignment did not follow the present-day Westpark corridor but served the same general area. The blue circle near the western end of the contemplated route is identified as “proposed airport.” The west Houston freeway was gone from a similar map published by the city of Houston in 1972.

Pre-tollway Westpark: The above view looks west along the Westpark Drive corridor from the Southwest Freeway overpass in July 2001, just before tollway construction began. The Harris County Toll Road Authority acquired 50 feet (15 m) of the 100-foot (30 m) railroad corridor, roughly the section between the railroad bed and Westpark Drive on the right. The left views show the corridor before the railroad tracks were removed, with the upper view looking east at Beltway 8 and the lower view looking east at Old Westheimer Road. (Photos: upper, July 2001; left, November 2000)

show the freeway, and no other agency took an interest in the proposed freeway.[135]

The planners in 1953 and 1968 were right about one thing. They anticipated the need for a major transportation facility in west Houston, and their predictions proved to be correct. Heavy residential and commercial development occurred in west Houston starting in the 1970s, and the arterial street network became incapable of handling the traffic load. The need for a freeway-type facility continued to grow, but constrained transportation resources prevented any meaningful plans from being formulated.

In 1979 the idea of a Westpark Tollway was given its first serious consideration. The Texas Turnpike Authority authorized a preliminary study of three corridors in Houston: the Hardy corridor, the Westpark corridor, and the Harrisburg corridor, location of the cancelled Harrisburg Freeway. The study found that the Hardy corridor warranted further study, the Harrisburg corridor was infeasible as a tollway, and the Westpark corridor was a marginal project. For the Westpark corridor, the study envisioned a

The golden shovels go to work: Officials gather on June 21, 2001, for the official ground breaking for the Westpark Tollway. Second from the right is Wesley Freise, who at the time was executive director of the Harris County Toll Road Authority. More than anyone else, Freise was responsible for moving the project forward. Third from the right is Harris County Judge Robert Eckels, who also played a key role in getting the tollway built. (Photo: Harris County Toll Road Authority)

six-lane toll road on a 100-foot-wide (30 m) right-of-way, extending from the US 59 downtown split at Spur 527 to SH 6, a distance of 15.5 miles (25 km). Construction cost was 158 million and total cost was 244 million in 1979 dollars, approximately 335 million and 517 million in 2003 dollars. The study concluded that the Westpark corridor estimated revenues were "below the levels generally considered adequate for successful financing," but the project would be able to meet its financial obligations over its lifetime and there was potential to reduce the cost substantially by using the railroad right-of-way and parts of the Westpark Road right-of-way. The study concluded that the project would warrant further study if the cost could be reduced or if financial assistance could be provided by other agencies. Around the same time, proposals for improving Westpark Road and adding bus lanes were being considered, still keeping it as an arterial street.[136]

The Westpark Tollway went into dormancy during the 1980s, and the focus turned to mass transit for the corridor. In June 1983 Houston's transit agency, the Metropolitan Transit Authority (Metro), placed a $2.35 billion bond issue on the ballot, with the bulk of the money earmarked for an 18.5-mile (30 km) heavy rail line with elevated structures along Westpark and a downtown subway. Voters defeated the bonds with 61% opposing. In the late 1980s Metro began new efforts to build a rail line. This time the agency was promoting a monorail line that would generally follow the Westpark corridor. In March 1991 the Metro board approved the monorail project and began negotiations with engineering and construction firms. The monorail became highly controversial and was a major issue in the 1991 mayoral election. Mayoral candidate Bob Lanier, former chairman of the Texas Transportation Commission and strong highway advocate, actively campaigned against the project. When Lanier won the election, the monorail was dead. Lanier then set the wheels in motion for the events that would ultimately lead to the construction of the Westpark Tollway.[137]

Setting the Wheels in Motion

When he took office on January 2, 1992, Mayor Bob Lanier promptly replaced three of the five city of Houston representatives on the Metro board of directors, breaking the previous pro-rail majority on the board. Metro had accumulated about $650 million in a reserve fund which it intended to use for the $1.2 billion monorail line. Lanier had plans to spend nearly all of the reserve funds on projects that he felt would have more benefit for Houston, including improved police protection and increased spending on roads, seemingly opening the door for a Metro

Beam placement: This view shows construction of the connector ramp from the Westpark Tollway to the Southwest Freeway, July 23, 2002.

contribution to the tollway.[138]

By February 1992 Metro had entered into negotiations with four railroads in the Houston area to buy or lease rights-of-way for a potential commuter rail system. Included in the negotiations was Southern Pacific, owner of the railroad corridor along Westpark. The idea of a Westpark Toll Road once again came to life. The chairman of the Metro board of directors, Billy Burge, was touting the corridor's potential as a toll road. At the end of December 1992, Metro and Southern Pacific approved a deal in which Metro would purchase the railroad corridors along Westpark Road and Hempstead Road in northwest Houston and obtain operating rights on other tracks for a price that could reach $113 million, depending on final details. Metro subsequently purchased the 58 miles (93 km) of track on the Westpark corridor for $45 million but declined to complete the other purchases in the 1992 agreement, leading to lawsuits from both sides in March 1994. The final price for the Westpark corridor land was $72 million when the litigation was finally settled in 1997.[139]

In the meantime, west Houston business interests had proposed a transit-friendly toll road for the corridor in 1993 in an effort to persuade Metro to donate the land for toll road use. Harris County Judge John Lindsay was of the opinion that the Harris County Toll Road Authority (HCTRA) should be the lead agency for any toll road. However, HCTRA was not yet financially strong and was focusing its attention on the purchase of the Beltway 8 ship channel bridge and the completion of the southern section of the Sam Houston Tollway. Metro was developing plans to build a one-lane reversible transitway for buses and high occupancy vehicles on the land and by 1995 was in the process of finalizing the plans. Metro authorized a detailed study of the feasibility of a toll road in 1996. The preliminary results of the study concluded that the toll revenue alone would not be sufficient to fund the project and large contributions from other agencies, most likely Metro, would be needed to make the project work. The study also indicated that the most financially viable option was a conventional toll road, not a toll-transit hybrid that some envisioned. Also complicating the situation were funding agreements with the Federal Transit Administration for the planned dedicated bus transitway. Metro began to solicit bids for the one-lane reversible transitway in late 1997 for a projected contract award in February 1998. Term-limited Mayor Bob Lanier would have to leave office at the end of 1997 and his successor, Lee Brown, was pro-rail. Brown immediately changed the composition of the Metro board of directors when he entered office in 1998, making it much more rail-oriented than it was in the Lanier era. Contributions to the tollway from Metro now seemed unlikely. Although the planned transitway was designed so that it would not preclude the addition of toll lanes in the future, it appeared that the Westpark Tollway was perhaps finally dead.[140]

West Houston business interests mounted a last-ditch, intense effort to stop the transitway construction. They succeeded in obtaining a nine-month delay in early 1998. The make-or-break period for the Westpark Tollway was just ahead. Harris County Judge Robert Eckels provided key support for the project during this critical period, and HCTRA executive director Wesley Freise led negotiations

Westpark Tollway construction: This view looks east toward the Southwest Freeway interchange in March 2003.

between HCTRA and Metro. Eckels was a strong advocate of road and tollway construction, and as chairman of the area's Regional Transportation Council he was the most powerful official in the Houston area on transportation issues. In spite of the modest projections for usage of the tollway, an estimated 26,000 vehicles per day for a projected opening in 2001, Eckels felt that a tollway would not incur any additional cost to Metro but would provide greater benefit to both west Houston and Metro. By 1998 HCTRA had achieved a very strong financial position and was capable of taking on financially marginal projects.[141]

Negotiations between HCTRA and Metro continued into 1999. In September 1999 a deal was reached. Metro would sell a 50-foot (15 m) strip of the Westpark corridor, half of the 100-foot (30 m) corridor width, to HCTRA. HCTRA would pay $14.3 million for 13 miles (21 km) of the 50-foot strip. Metro would retain 50 feet for future transit use, which was envisioned as a light rail line. On November 18, 1999, the Metro board of directors formally approved the land sale. The Westpark Tollway would be built.

Building the Tollway

It was a near-miracle that the Westpark Tollway would be built. Only one other Houston transportation facility, the Fort Bend Parkway Tollway, has had a longer and more tortuous route to construction. In November 2000 voters in Fort Bend County southwest of Houston approved bonds to extend the Westpark Tollway all the way to the Grand Parkway. The 1953 concept for a freeway along the entire Westpark corridor and the 1968 vision for a limited-access facility to the Grand Parkway would be realized.

A ground breaking ceremony for the tollway was held on June 21, 2001. The Westpark Tollway from Loop 610 to the Harris County line had an approximate construction cost of $265 million. By Houston standards, the Westpark Tollway has a very unusual design. It is very small, having no more than four continuous main lanes. It is shoehorned in a narrow strip of land between the existing Westpark Road and the 50-foot (15 m) strip set-aside for future transit, in some places taking right-of-way from Westpark Road in order to fit. Most unusual is the interchange at the Beltway 8-Sam Houston Tollway. Whereas the Sam Houston Tollway features numerous five-level stack interchanges with high-flying ramps, the connector ramps between the Westpark Tollway and the Sam Houston Tollway are all below grade, with one connection even two levels below grade. It is more like a reverse stack, going down instead of up.

But perhaps a little variety in the design of Houston freeways and tollways is not such a bad thing. The Westpark Tollway will be a minimalist facility. But just five miles north of the Westpark Tollway is the Katy Freeway, which is planned to be transformed into one of the nation's widest freeways for a sustained distance—a fully paved corridor averaging 475 feet (145 m) in width.

Southwest Freeway interchange: This view looks southbound along the Southwest Freeway (US 59), showing the connector ramps to the Westpark Tollway. The Westpark Tollway is in a trench at this point and is not visible in this view. (Photo: ©Scott Teven/www.HoustonPhoto.com, May 2003)

June 2005 Update: The first section of the Fort Bend Parkway, from Beltway 8 to SH 6, opened on August 30, 2004. The second section, from Beltway 8 to US 90A (South Main), opened March 15, 2005. As of June 2005 work is still in progress on the connector ramps at US 90A. The section from US 90A to Loop 610 remains under study.

Fort Bend Parkway Tollway, SH 122

Persistence. Determination. Perseverance. Multiple lives. If a freeway could have personality traits, these would be the traits of the Fort Bend Parkway. No other freeway in Houston has overcome as much adversity as the Fort Bend Parkway in its long road to construction. It has been rejected by TxDOT, left for dead by the city of Houston, brought back to life by Fort Bend County, and then put into limbo by increasingly complex environmental regulations and funding shortages. But in November 2000, the time for the Fort Bend Parkway finally arrived with voter approval of bonds to construct the parkway. After 42 years of struggle it would prevail, although it would be a tollway rather than a freeway.

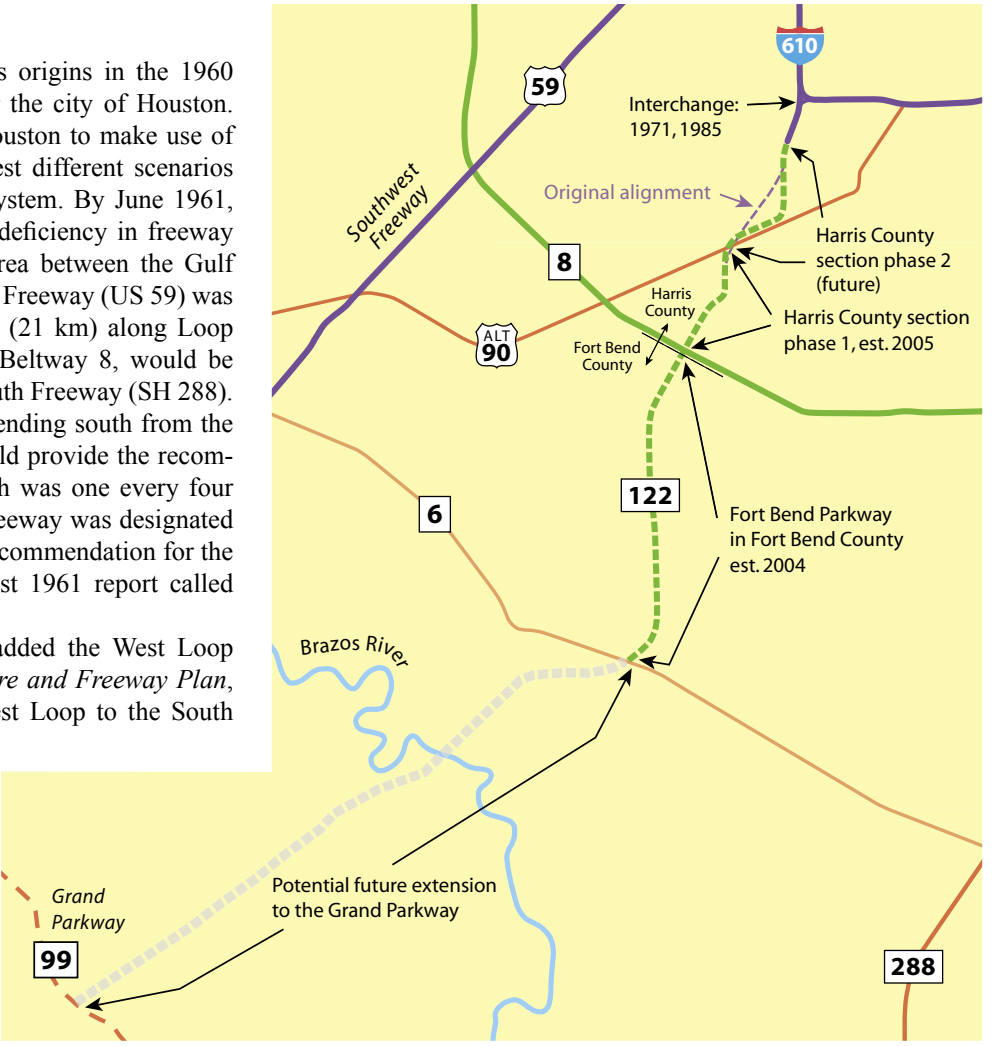
Of course, the personality traits that ultimately pushed the parkway to construction were those of the backers of the project. The relentless efforts of Fort Bend County officials over 15 years and Houston's growing acceptance of tollways finally made the Fort Bend Parkway a reality. The story of the Fort Bend Parkway also illustrates the huge difficulty in getting a new limited-access facility constructed in today's regulatory environment. Even in Houston, it was a long, costly struggle.

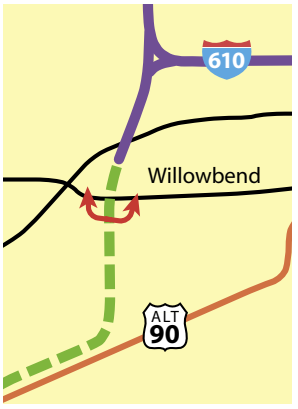
Origins

The Fort Bend Parkway had its origins in the 1960 traffic and transportation study for the city of Houston. The 1960 study was the first in Houston to make use of a computer to compile data and test different scenarios for modifications to the freeway system. By June 1961, the data had been analyzed and a deficiency in freeway service in south Houston in the area between the Gulf Freeway (IH 45) and the Southwest Freeway (US 59) was identified. This wide arc, 13 miles (21 km) along Loop 610 and 22 miles (35 km) along Beltway 8, would be served by only one freeway, the South Freeway (SH 288). The addition of a new freeway extending south from the southwest corner of Loop 610 would provide the recommended density of freeways, which was one every four to six miles (6.4 to 9.6 km). The freeway was designated as the West Loop Extension. The recommendation for the freeway was included in an August 1961 report called *Freeway Phase*.[142]

In 1963, the city of Houston added the West Loop Extension to its *Major Thoroughfare and Freeway Plan*, showing it extending from the West Loop to the South Belt. The city established the corridor right-of-way for the proposed freeway and began the process of acquiring property. In 1964, the city of Houston and Harris County began efforts to get the route adopted into the state highway system and on March 31 a presentation was made to the Texas Transportation Commission. The commission did not grant Houston's request to adopt the facility into the state highway system. On April 5, 1966, the City Planning Commission officially adopted a revision of the *Major Thoroughfare and Freeway Plan*, extending the proposed alignment of the West Loop Extension southwest from the South Belt into Fort Bend County and across the Brazos River toward Bay City. Around this time the freeway began to be called the Bay City Freeway.[143]

The first signs of trouble for the West Loop Extension appeared in 1968. On March 4, city of Houston department heads recommended to the mayor and city council that the right-of-way plans established on the West Loop Extension be repealed. New design standards for freeway construction required a wider, more costly corridor on the urbanized section near Loop 610, and the city of Houston could no longer bear the financial burden of protecting the right-of-way for the proposed freeway. Houston City Council took no action on the recommendation. On June 3, 1969, city of Houston department heads again recommended the repeal of the original right-of-way plan





A long-standing problem: This view looks north along the Fort Bend Parkway corridor near the planned terminus at Loop 610, shown in the distance. The route of the tollway will follow Post Oak Road in this section. Urbanization of this section of the proposed freeway corridor was one of the main reasons for the abandonment of plans to construct the freeway in the mid-1970s. The original right-of-way plans for this section, approved by the city of Houston in 1963, showed a narrow 160-foot (49 m) freeway corridor due to the development that had already occurred. Early concepts for the freeway proposed an elevated structure in this area. In 1968 standards for freeway right-of-way required a wider corridor and the city of Houston did not have the financial resources to acquire the needed property. In 1975 the city of Houston ended its efforts to build the freeway. Plans for the tollway in 2003 squeeze the four toll lanes into the corridor with a minimal amount of right-of-way acquisition. (Photo: November 2002)

defining the freeway corridor and proposed the reestablishment of a new right-of-way plan in the urbanized area from Loop 610 to a point about 1.5 miles (2.4 km) to the south. Houston City Council decided to retain the original right-of-way plan established in 1963 and deferred the matter indefinitely on June 25, 1969. Houston City Council was not yet ready to give up on the freeway.

As the city of Houston struggled to keep the West Loop Extension alive, it became clear that no help would be forthcoming from TxDOT. In April 1969, TxDOT approved the addition of the Harrisburg Freeway (the SH 225 extension into downtown) and Beltway 8 to the state highway system, but once again failed to accept the West Loop Extension. Since diminished funding would start to take its toll on TxDOT's construction plans shortly afterward, 1969 was probably the last good chance for inclusion in the state highway system. The city of Houston continued its efforts for TxDOT adoption in 1970, but to no avail.[144]

By early 1975 TxDOT informed the city of Houston that it had "no plans in the foreseeable future to design or construct the freeway." On January 22, 1975, the city of Houston department heads recommended the removal of building restrictions in the right-of-way corridor for the West Loop Extension. This time the right-of-way plans were officially repealed, effectively ending the city of Houston's efforts to get the freeway built. The West Loop Extension appeared to be dead.[145]

The Second Life

While the city of Houston had given up on the West Loop Extension, Fort Bend County just southwest of Houston was ready to step forward and try to make the project happen. In 1984, an update of the Fort Bend County *Thoroughfare Development Plan* identified the need for a freeway-type facility to serve northeast Fort Bend County and connect the region to Houston. Fort Bend County Commissioners Court officially resurrected the moribund freeway in 1985. A committee was formed and a preliminary corridor analysis was undertaken. In January 1986 the committee presented their findings to the Texas Transportation Commission and the commission authorized a detailed study of the corridor. In August 1987 the study concluded that there was demand for the facility and recommended the Hillcroft Avenue corridor for the freeway alignment. The study also recommended terminating the freeway at Beltway 8 rather than Loop 610 because the West Loop could not accommodate the

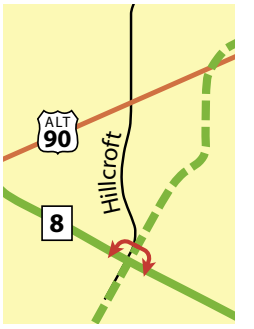
> "Please be advised that this project has been cancelled."
>
> City of Houston Planning Director Roscoe H. Jones in a letter to Gousha/Chek-chart map company, July 3, 1979

additional traffic load that the freeway would bring. In the 1980s any entity requesting a new freeway from TxDOT was expected to perform all preliminary work, including right-of-way acquisition and environmental clearance, on its own, leaving only the construction to TxDOT. Fort Bend County offered to perform all the preliminary work, and in March 1988 the Texas Transportation Commission officially designated the Fort Bend Parkway as part of the state highway system. While this was great news to Fort Bend County officials, they surely didn't realize they were just beginning a long and costly campaign to get the facility built, one that would require millions of dollars in studies and relentless persistence to overcome the anti-freeway mechanisms built into environmental regulations.[146]

In October 1989, Fort Bend County created a special taxing entity called the Fort Bend Parkway Road District No. 1 to pay for the studies and land acquisition. On February 27, 1990, the Texas Transportation Commission formally entered into an agreement with Fort Bend County authorities, designating the highway as State Highway 122 and stipulating that the state would construct the frontage roads when the county had completed its part of the deal. Fort Bend County officials were optimistic that the frontage roads would be open by 1995.[147]

In 1991 a comprehensive new federal transportation bill, the Intermodal Surface Transportation Efficiency Act, or ISTEA, was signed into law by President George H. W. Bush. ISTEA included a range of new regulations that imposed some significant new hurdles to the Fort Bend Parkway. In April 1993, Fort Bend County was informed that the environmental assessment for the project was not sufficient, and a full environmental impact statement (EIS) would be required. Authorities then began work to extend the environmental assessment into an EIS. Imposing a greater obstacle for the project was a new set of regulations issued by the Federal Highway Regional Administration in July 1993 relating to single-occupant vehicle justification analysis. Now Fort Bend County would have to justify its new lanes for single-occupant vehicles, and at the time methods and techniques for performing the analysis were still being formulated and developed.

ISTEA also required a Major Investment Study (MIS) of the project, so the project consultants went back to work to combine the MIS with the EIS. And then came the noise analysis and more study of alternatives to the freeway. There was also more work to ensure that the regulatory standards applied to the freeway were consistent with standards that had been applied to the Grand Parkway, another proposed facility that was under study and intersected the Fort Bend Parkway.



Tollway corridor: This view looks south along the Fort Bend Parkway corridor with Beltway 8 in the foreground. Right-of-way in this section was acquired before the cancellation of the freeway in 1975. As this photo shows, the freeway corridor is a low-density area and the tollway south of Beltway 8 will cause very little disruption. (Photo: November 2002)

In December 1996 Fort Bend County interests began to feel that trying to obtain environmental approval was a futile battle due to the constantly changing regulatory environment. But supporters of the project still believed that with enough persistence, eventually the environmental and compliance issues would be overcome. However, there was a bigger issue lurking: funding. TxDOT had placed a low priority on the project, ensuring a long wait for funds if the project could secure approval. It became apparent that the only way to get the facility built in any reasonable time frame would be as a tollway. As an added bonus, if the project could be done without federal funds, many of the onerous federal regulations would no longer apply.[148]

Moving into the Tollway Era

Whereas the 1980s was the decade of helping the state build new freeways through private transportation corporations, the 1990s was the decade in which the toll

> "It's a history of frustration. It's a history of the finish line constantly being moved a little further away."
>
> Bob Randolph, attorney representing the Fort Bend Parkway interests, in May 1998

road moved to the forefront of Houston transportation planning. The Fort Bend County Toll Road Authority was formed in 1997, and it launched a preliminary feasibility study for a toll road. The results were not good. The consultant concluded that tolls alone could not pay for the cost of the project. However, Fort Bend County officials felt the assumptions used in the study were overly conservative, so a second review was initiated. In 1998 a revision of the study using data more specific to the area that would be served by the tollway provided a favorable result. An engineering study and comprehensive traffic and revenue study were completed in 1999. The tollway south of Beltway 8 was found to be feasible. Around the time of the completion of the studies, the Harris County Toll Road Authority (HCTRA) seriously began to consider building the section of the Fort Bend Parkway within Harris County between Beltway 8 and Loop 610.[149]

Now all that was needed was money. In 2000 Fort Bend County placed a $140 million toll road bond issue on the November ballot. The bonds would be split approximately evenly between the Fort Bend Parkway and the extension of the Westpark Tollway. This vote was perhaps the make-or-break event for the Fort Bend Parkway. After nearly 40 years of effort to get the facility built, it was up to Fort Bend County voters. They approved the bonds with an overwhelming 79% of the vote. Now it appeared that nothing would stand in the way of the Fort Bend Parkway. With the momentum in place, Harris County took steps to move forward with the northern section of the Parkway, authorizing a formal study in November 2000. On April 30, 2002, Harris County Commissioners Court formally approved the plans for the Fort Bend Parkway Tollway section within Harris County. The approved alignment north of US 90A was new, differing from the alignment that had been on planning maps since the 1960s. With HCTRA's agreement to build the northern section, the original plans for the West Loop Extension had been fully restored to Houston's freeway system.

On May 14, 2003, a ground breaking ceremony was held for the construction of the Fort Bend Parkway. It was the culmination of more than 40 years of effort. The persistence, determination, and perseverance had paid off.

42 years in the making: A ground breaking ceremony was held on May 14, 2003, to launch the Fort Bend Parkway Toll Road. It was the culmination of 42 years of effort by Houston-area authorities—the longest struggle for any Houston freeway. And ultimately, the only way it could prevail is as a tollway. In the photo from left to right: Charles Rencher, director, Fort Bend County Toll Road Authority (FBCTRA); Mike Stone, vice chairman, FBCTRA; Bobbie Tallas, secretary, FBCTRA; Jim Condrey, treasurer, FBCTRA; Norm Mason, chairman, FBCTRA; Robert Hebert, Fort Bend County Judge; Mayor Allen Owen, Missouri City; James Thurmond, city manager, Missouri City; Andy Meyers, Fort Bend County Commissioner Precinct 3; Tom Stavinoha, Fort Bend County Commissioner Precinct 1; Grady Prestage, Fort Bend County Commissioner Precinct 2; James Patterson, Fort Bend County Commissioner Precinct 4.

Alvin Freeway, SH 35

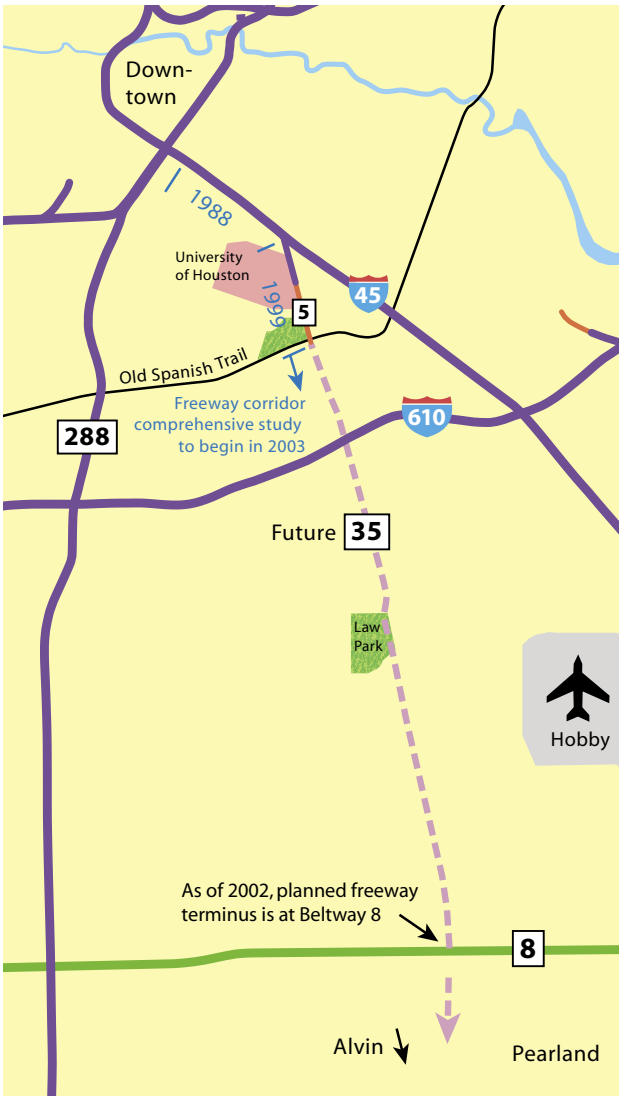
The Alvin Freeway is perhaps Houston's only freeway that could be called a survivor. It persisted on Houston's freeway master plan in spite of community protest in the early 1970s, the highway funding crisis of the mid-1970s, and the failure of development and demand to materialize in its corridor. It didn't survive entirely intact, since its freeway status south of Beltway 8 was cancelled. But the Alvin Freeway never died, and in 1999 the first short section opened, 32 years after adoption into the state highway system. It remains somewhat uncertain if or when the full Alvin Freeway will be constructed. However, in the 1990s outlying areas in the Alvin Freeway corridor finally began to see the long-anticipated development that had been predicted in the 1965 study recommending the freeway. The transportation demand resulting from the new suburbanization will probably ensure the survival and ultimate construction of the freeway.

Origins

The Texas Transportation Commission first authorized a study of the SH 35 corridor in May 1964. In July 1965 the study was complete and recommended a new 21-mile (34 km) freeway from central Houston to the city of Alvin. The study cited the impact of the Manned Spacecraft Center (now the Johnson Space Center) and new industrial and residential development in the corridor as key factors in the freeway recommendation. The Alvin Freeway would also provide relief to the chronically congested Gulf Freeway. In November 1967, the Texas Transportation Commission officially adopted the Alvin Freeway into the state highway system and authorized detailed studies and public hearings. This was perhaps somewhat of a surprise, since local officials had unsuccessfully lobbied in previous years to get two other proposed new freeways, the La Porte Freeway Extension and West Loop Extension, adopted into the state highway system.[150]

For the section inside Loop 610, the first public meeting was held on December 5, 1967. There was no controversy over this section, and the route location was approved in 1969.

For the section between Loop 610 and Beltway 8, controversy erupted over plans for the Alvin Freeway to pass through Law Park, a largely undeveloped tract of parkland. Local groups and sympathetic state legislators attempted to pass legislation to force a new alignment study in 1973, but the efforts stalled in the state legislature. The 1974 environmental impact statement reported that the proposed alignment was reviewed by the United States Secretary of Transportation, who "concurred that there were no prudent or feasible alternatives to the proposed location, and that the highway proposed included all possible planning to minimize harm resulting from such use of the future park site." The plans included depressing the freeway below grade through the park and the addition of noise abatement. The alignment for the Alvin



Freeway was approved. Law Park was not developed as it was planned in the early 1970s, and the parkland near the proposed Alvin Freeway was later used for a large police station.[151]

South of Beltway 8, the Alvin Freeway was initially aligned on the east side of the city of Pearland. Controversy over the eastern alignment first arose at a public hearing on December 7, 1967. In 1968 and 1969, Brazoria County and the city of Pearland passed resolutions endorsing an alignment to the west of Pearland. In 1970 the Texas Transportation Commission agreed to a western alignment, but also authorized additional public hearings before an official determination was made. The final environmental impact statement, completed in 1976, recommended an alignment west of Pearland. However, the alignment controversy would become academic as the freeway south of Beltway 8 would later be cancelled.[152]

While the Alvin Freeway had successfully worked its way through the regulatory process, it did not fare so well during the 1970s highway funding crisis. A reevaluation of

Stubby freeway: This view looks south along the Alvin Freeway corridor with the Gulf Freeway (IH 45) in the foreground. The short section of freeway and approximately 1.3 miles (2.1 km) of frontage roads were completed in 1999, 32 years after official approval of the freeway in 1967. As of 2003, there are no imminent plans to extend the freeway main lanes or frontage roads further south. A comprehensive study of the corridor is scheduled to begin in 2003 to determine the future of the freeway. The Alvin Freeway has also been listed as a potential toll road candidate. (Photo: May 2002)

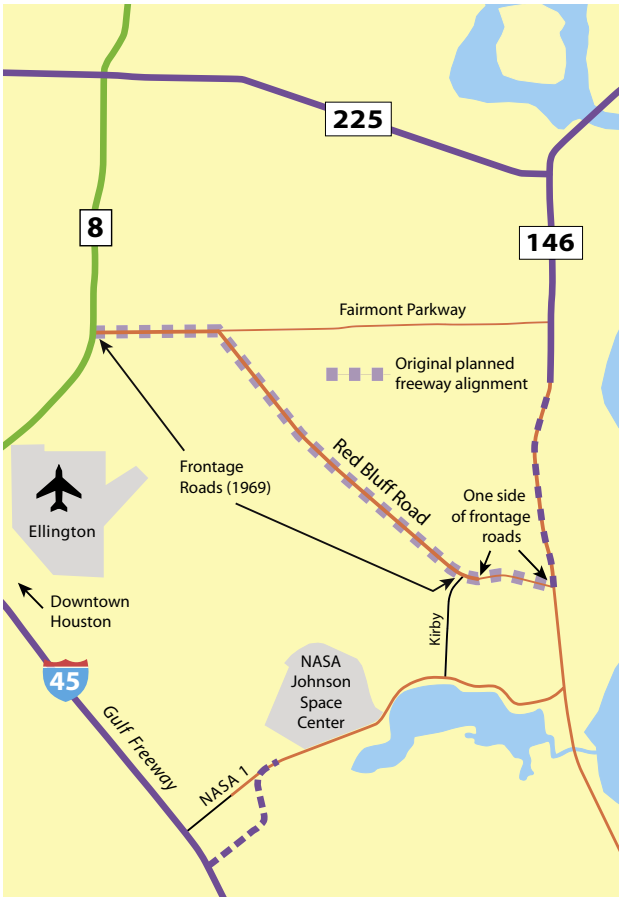
priorities in 1976 caused the Alvin Freeway to be placed on long-term hold. Due to the relatively small amount of development in the corridor, there really was no need to proceed with the freeway in the short- or medium-term time horizons. The reconstruction of the Gulf Freeway near downtown in the mid-1980s included provisions for the ultimate construction of the Alvin Freeway, including long elevated structures along the Gulf Freeway serving as the distribution system into downtown. Starting around 1980, TxDOT held regular meetings with the University of Houston, Texas Southern University, and the city of Houston to define changes to the street system to accommodate the Alvin Freeway, particularly in the area near the Gulf Freeway. By 1985 these plans were finalized. The final environmental impact statement for the section from the Gulf Freeway to Bellfort Street, just south of Loop 610, was approved in the summer of 1992.[153]

In July 1996 construction on the Alvin Freeway finally began. In 1998 the new facility was designated as Spur 5. A very short section of main lanes and 1.3 miles (2.1 km) of frontage roads were completed in 1999. The entire Highway 35 corridor from the Gulf Freeway to Angleton, 40 miles (64 km) south, is the subject of a comprehensive corridor study expected to be underway by 2004. That study will determine the future of the Alvin Freeway—if and when it will be constructed. The planned facility south of Beltway 8 will be reevaluated and could be restored to full freeway status. The Alvin Freeway corridor has also been identified as a candidate for a potential future toll facility by the Harris County Toll Road Authority.

Red Bluff Freeway

The Red Bluff Freeway can trace its beginning to NASA's decision to locate the Manned Spacecraft Center (now the Johnson Space Center) in Houston, which was announced on September 19, 1961. A comprehensive transportation study had been completed just prior to the NASA announcement, and its results had been adopted in September 1961. Because of the Manned Spacecraft Center and Clear Lake City, the huge real estate development planned for the area, the study results for the southeast region needed to be reviewed and updated. Harris County Judge Bill Elliot requested the special study which was performed by the Houston City Planning Commission. The final report, *A Study of Thoroughfare Development in the Southeast Area of Metropolitan Houston and Harris County*, was presented to Harris County on August 13, 1963.

The study recommended numerous modifications to the metropolitan transportation plan, including the addition of a new freeway, the Red Bluff Freeway, which would follow the alignment of the existing two-lane Red Bluff Road. The study recommended a phased construc-



Still semirural: This view looks southeast along Red Bluff Road. The frontage roads for the proposed Red Bluff Freeway were complete by 1969, but land development in the corridor did not occur as anticipated. In 2003 Red Bluff Road remained largely semirural, traversing through forests and pastures. Construction of the freeway main lanes on the 300-foot-wide (91 m) corridor is not planned as of 2003. (Photo: September 2002)

tion, with frontage roads only being constructed initially. Harris County was solely responsible for the project. In 1964 a map showing the right-of-way requirements for the 300-foot-wide (91 m) corridor from Fairmont Parkway to Kirby Road was developed. In January 1966 voters approved a county bond issue which included funds for the Red Bluff Freeway. A final right-of-way map was completed in late 1966, and work on the right-of-way acquisition and frontage road construction moved at full speed in 1967 and 1968. By the end of 1968 the frontage roads were complete from Fairmont Parkway to Kirby Road. Fairmont Parkway between Red Bluff Road and Beltway 8 East was also planned as an ultimate freeway facility, and its frontage roads were completed around the same time.[154]

They Built It and Nobody Came

In 1969 there were no immediate plans to construct the main freeway lanes on Red Bluff Road. And it turned out to be a good thing. Usually with freeways, the adage "build it and they will come" is a rule that never fails. But for some reason, the cars, traffic, and development simply did not materialize in the Red Bluff corridor. In 1977 Red Bluff Road was handling only 14,000 vehicles per day at its busiest point south of Fairmont Parkway. The 1963 planning report had projected 62,000 vehicles per day by 1980. In 1978 efforts were underway to improve the southernmost section of Red Bluff Road between Kirby Road and SH 146. This short section turned out to be major undertaking due to the long water crossing at Taylor Bayou, right-of-way acquisition complications, and an unexpectedly high cost. Only one side of the frontage roads was constructed.[155]

Red Bluff Road remained almost entirely devoid of development through the 1980s and 1990s. As of 2003, the corridor still has a rural feel to it as it traverses through forests and pastures. But slowly, the laws of traffic growth and development are beginning to fill the vacuum on the Red Bluff corridor, with limited residential development taking place near the south end. In June 2001, the Harris County Toll Road Authority adopted a list of potential future projects which included future study of the Red Bluff and Fairmont Parkway corridors. For 35 years motorists on the Red Bluff frontage roads have seen the wide median and wondered, "Will the main lanes ever be built?" Only time will tell.

Other Freeways

State Highway 146

SH 146 extends from Liberty, northeast of Houston, to Texas City, southeast of Houston near Galveston. The section from Baytown to La Porte is a full freeway and includes the Fred Hartman Bridge ship channel crossing. The earliest studies to upgrade SH 146 to a full freeway appear to have occurred in 1955 when the Texas Transportation Commission authorized location surveys for a 300-foot (91 m) corridor extending four miles (6.4 km) south of SH 225, the La Porte Freeway. In September 1959 the city of Baytown, Harris County, and TxDOT agreed to acquire right-of-way for a loop freeway through Baytown, extending from West Main Street near the present-day Hartman Bridge to Ferry Road east of Baytown. The section was approved as an access-controlled freeway in February 1961. The Baytown Loop was originally designated as Loop 201. Loop 201 was absorbed into SH 146 in 1996.[156]

Although planning for a freeway had begun in the 1950s, the SH 146 corridor remained a hodgepodge of highway sections built to various standards up until the 1990s. The SH 146 ship channel crossing opened as a two-lane tunnel on September 22, 1953, but planning for a bridge meeting freeway standards did not begin until 1977. Between 1970 and 1972, expressway and frontage road sections were built south of the La Porte Freeway (SH 225) to Red Bluff Road. Between 1978 and 1981, a section in Baytown between the Houston Ship Channel and Spur 330 was upgraded, with a segment meeting expressway standards and another section a frontage road facility. In the 1990s the freeway era for SH 146 finally arrived. On September 27, 1995, the eight-lane Fred Hartman Ship Channel Bridge was dedicated. In 1996 the freeway from the bridge northward through Baytown was completed, and in 1999 and 2000 freeway sections south of the La Porte Freeway were opened. Also in 2000, reconstruction of the interchange at the La Porte Freeway was completed. The original interchange, opened in 1953, was the first three-level interchange on the state highway system in Texas.

In 2001 a study to determine the future of the non-freeway section of SH 146 south of La Porte was completed. The study recommended upgrading the highway to a full freeway from Fairmont Parkway to Red Bluff Road. From Red Bluff Road southward to FM 518, the construction of express lanes alongside the existing highway was recommended. These express lanes will allow motorists to bypass all intersections in the segment, providing nearly the same service level as a full freeway. South of FM 518, SH 146 will be upgraded to an arterial-type highway with grade separations at major intersections. In December 2002 the Texas Transportation Commission authorized the purchase of the railroad right-of-way that parallels SH 146 for use in the expanded highway facility.[157]

SH 146 holds the distinction of being one of only three freeways in the Houston region to be named after an individual, the others being the Sam Houston Tollway and the Emmet Lowry Expressway in Texas City. The freeway

The Lanier Freeway: Planned since the 1950s, the SH 146 freeway main lanes through Baytown were completed in 1996. This view looks west along the freeway with the Exxon complex in the background. (Photo: July 2002)

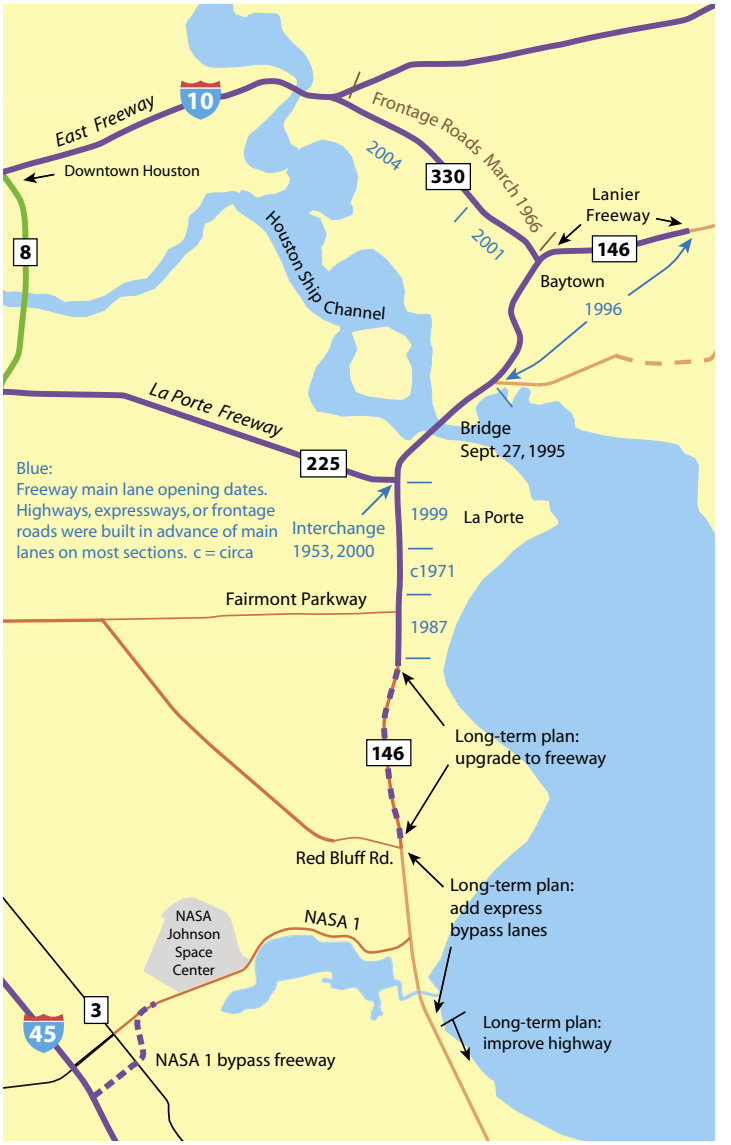
section through Baytown is named the Robert Lanier Freeway in honor of the native Baytonian who became chairman of the Texas Transportation Commission and mayor of Houston.

Spur 330

Spur 330 was authorized by the Texas Transportation Commission in October 1957 and was designated as a controlled-access freeway in January 1961. After completion of the frontage roads in March 1966, Spur 330 went into a long period of dormancy. In November 1996, the city of Baytown made a presentation to the Texas Transportation Commission to request construction of the freeway main lanes. Work on the first section of main lanes was underway in 1998 and was completed in 2001. A contract for the final section of Spur 330 main lanes was awarded in March 2002, with completion scheduled for 2004. The final work to complete Spur 330 consists of the remaining ramp connections at the SH 146 interchange. That work will probably occur sometime between 2005 and 2015.[158]

NASA 1 Bypass Freeway

When the National Aeronautics and Space Administration (NASA) announced that Houston would be the location of the new Manned Spacecraft Center (now the Johnson Space Center) on September 19, 1961, local officials revised transportation plans to improve the roads, highways, and freeways in the NASA area to accommodate the planned development. Somehow a key section of the most vital road serving the NASA campus—NASA



June 2005 Update: A $40.7 million construction contract for the NASA 1 bypass freeway was awarded in April 2004. An additional contract to complete connections at IH-45 is scheduled for 2006.

The long wait is over: In July 2002, work was in progress to construct the final section of main lanes for the Spur 330 Freeway. Thirty-eight years elapsed between the completion of the frontage roads and the main lanes.

Road 1—was left behind in the plans. NASA Road 1 was previously Farm to Market (FM) Road 528. A section of FM 528 through the city of Webster between the Gulf Freeway and SH 3 had a very narrow right-of-way, wide enough for only four traffic lanes with no median. The narrow right-of-way and the substantial number of businesses along the roadway complicated efforts to expand NASA 1 for more than 30 years.

In the late 1980s it appeared that construction would move forward on a planned expansion which would have transformed the narrow section of NASA 1 into a six-lane arterial street with a grade separation at SH 3. However, the expansion would have displaced 21 businesses along the highway, and the city of Webster was required to pay a share of the right-of-way acquisition costs amounting to $1.7 million. Webster officials did not want the wide arterial street through their city and balked at paying the right-of-way costs. Webster held an election for bonds to pay for the right-of-way acquisition costs on May 2, 1992. The bond proposition failed by 16 votes, and the entire NASA 1 improvement project was put on hold.[159]

In 1994 the Webster City Council approved a plan to build a freeway bypass south of the urbanized area of the city. The proposed four-lane freeway bypass was 2.7 miles (4.4 km) long and did not have frontage roads. The revised project worked its way through the public hearing and approval process over the next few years and then had to wait in line for funding. Construction on the $40 million bypass is scheduled to begin in 2004. So approximately 45 years after the original announcement of the NASA space center, the principal road serving NASA will finally be brought into the modern era. It was a long wait, but the end result will be a new freeway for Houston.[160]

Memorial Parkway

A freeway along the banks of Buffalo Bayou west of downtown was one of the early freeway corridors contemplated for Houston in the city of Houston's 1942 *Major Street Plan*. As the freeway era began to take shape after World War II, it became clear that the parkland along Buffalo Bayou was not suitable for a full Houston freeway with main lanes and frontage roads. Furthermore, Memorial Park and the elite River Oaks neighborhood blocked the path just a few miles west of downtown, preventing a potential freeway from connecting to the rest of the Houston freeway network. When Houston's freeway master plan emerged in 1953, there was no Memorial Drive freeway. But Memorial would get a limited-access facility suitable for its environment—the only true parkway in Houston.

Plans for a transportation corridor along Memorial Drive date back to the 1930s, when Memorial Drive was envisioned as the alignment of SH 73 west of downtown and the western gateway to the city of Houston. In 1937, the route for Memorial Drive had been graded from Shepherd Drive to Piney Point, seven miles (11 km) to the west, allowing motorists to "travel over it in good weather." Most of the route was shell surfaced. Plans were being developed to extend Memorial from Shepherd Drive into downtown Houston. That section would ultimately become a limited-access parkway. The first section of Memorial Drive Parkway, from Shepherd to Waugh Drive,

Memorial Parkway: Memorial Drive was identified as a potential freeway corridor in the city of Houston's 1942 *Major Street Plan*, but did not become part of Houston's freeway system when the overall plan was formulated in 1953. Instead, Memorial became a limited-access parkway serving local traffic. (Photo: May 2003)

opened July 8, 1955. It included the large cloverleaf interchange at Waugh. On January 30, 1956, the section from Waugh to downtown was opened. Memorial Drive was a limited-access facility, but it was designed for low speeds with conventional curbs and no emergency shoulders. The three-level interchange at Shepherd Drive was opened on May 2, 1958. The limited-access section of Memorial Drive was completed on January 28, 1960, when the elevated lanes connecting into downtown Houston were opened. Memorial soon became Houston's busiest thoroughfare, carrying 46,640 vehicles per day at Waugh Drive in 1960. The importance of Memorial Drive as a transportation corridor diminished with the opening of the Katy Freeway in December 1968. Relieved of the traffic load, Memorial could return to its originally intended role as a scenic parkway.[161]