

CHAPTER

4

Central Expressway

Telecom Corridor...Bush Library...Northpark Mall...Uptown...West Village...
McKinney Avenue...Greenville Avenue...Henderson Avenue...M-Streets...
Highland Park...Mockingbird Station...SMU...University Park...Cityplace...
High Five...Texas Instruments...Collin Creek Mall...Allen Premium Outlets

Looking southbound at the High Five

Author, June 2009



The original Central Expressway launched the freeway era in North Texas, propelled the amazing growth of north Dallas and became the backbone of the burgeoning high-tech industry. But the 1940s-design freeway was woefully inadequate for the transportation needs of the corridor, first experiencing traffic congestion in 1953 and becoming steadily more jammed as the years passed. The antiquated freeway became an embarrassment to the city as futuristic architecture was rising all around Dallas during the boom period of the late 1970s to mid-1980s. Everyone wanted a better freeway, but reaching agreement on the design for the six-mile section north of downtown Dallas proved to be one of the most contentious controversies in the history of North Texas freeways.

After twelve years of dispute and debate, the design for the new Central Expressway in Dallas was approved in 1986. Starting in Plano and Richardson in the late 1980s, expanded sections of freeway opened regularly. The originally planned expansion of the main lanes and frontage roads was completed in 1999 with the opening of the final section in Dallas. With its architectural enhancements and unconventional design elements, the modern Central

Expressway in Dallas became the most distinctive freeway in North Texas. But the crowning achievement was yet to come. In 2005 the monumental High Five interchange opened, completing the transformation of the original Central Expressway with one of the most impressive interchanges in the United States.

The high tech industry had first taken root along Central Expressway in 1958 with the opening of the Collins Radio facility in Richardson and the first building of the Texas Instruments campus. The telecommunications industry became the dominant and defining industry along Central Expressway, earning the freeway its nickname as the “Telecom Corridor” in 1988. The Telecom Corridor reached its peak with the high-tech boom of the late 1990s, culminating with the nationwide bursting of the technology bubble in 2001.

All the while, Central Expressway empowered the growth of successive suburbs along its length, first Richardson, then Plano, Allen and McKinney. In Dallas, Central Expressway remains as vital as it has ever been, serving as a modern-day main street as it continues to attract new development and redevelopment.

Rebuilding Central Expressway

By the mid-1970s everyone agreed that Central Expressway needed to be modernized and expanded. Getting agreement on that was easy. Getting everyone to agree on the design and how to pay for it was not so easy. The controversy, debate and study consumed 12 years, followed by another 13 years of construction.

Central Expressway can be divided into two sections for the reconstruction: the easy section and the hard section. North of Loop 12 the corridor generally had a 300-foot-wide right-of-way, sufficient to expand the freeway to 8 main lanes with continuous frontage roads. No neighborhoods were directly alongside the freeway, so no opposition developed. Final federal approval for the reconstruction north of LBJ Freeway was received in February 1983 and the first construction project was underway in December 1985.¹

Reconstruction south of Loop 12 was much more difficult. The freeway right-of-way was typically only 170 to 220 feet wide, not wide enough to accommodate new lanes and the improved geometrics required for a modern freeway. Alongside the freeway were numerous neighborhoods, including the highly engaged neighborhoods of Highland Park, University Park and M-Streets. The hundreds of businesses alongside the freeway faced potential

displacement or other impacts. Finding a reconstruction plan to satisfy all stakeholders would be a huge challenge.

There was some informal discussion of adding lanes or an upper deck as early as 1964, but the first serious expansion proposal for lower Central Expressway was made by the regional planning board (now NCTCOG) in August 1974, calling for construction of elevated structures with two traffic lanes and one bus lane in each direction. There was minimal response or reaction to the proposal, but it would only be a matter of time before elevated lanes on an upper deck would come under scrutiny.²

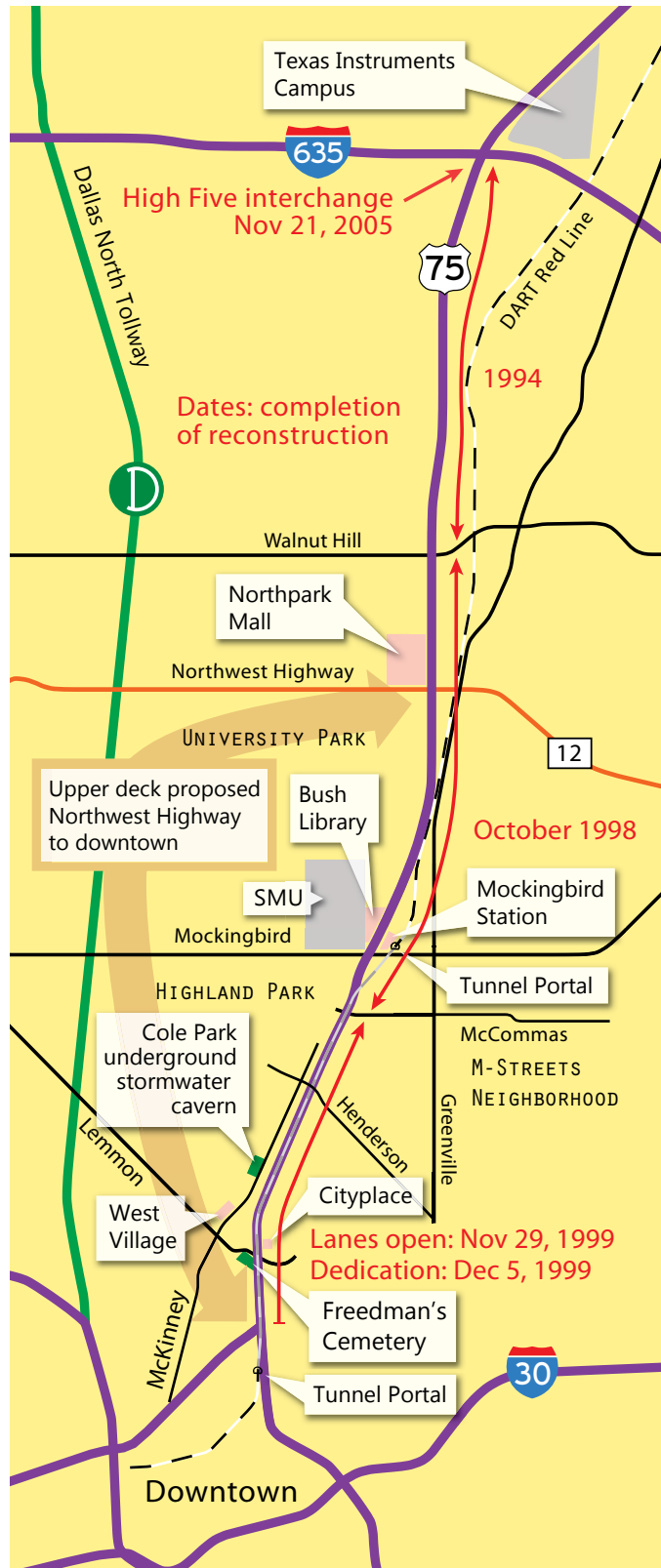
In late 1976 Dallas City Council began to consider the issue including possibly involving the Texas Turnpike Authority to build the upper deck as a toll facility, and decided to initiate a comprehensive study of options before making any endorsement of the upper deck. It was becoming apparent that a decision on how to fix Central would take some time, so in 1977 the City of Dallas began to promote short-term, less-expensive options for providing relief, including upgrades of nearby streets and building a missing link of frontage roads south of Mockingbird Lane.³

In February 1979, in a presentation to Dallas City Council, TxDOT stated it was ready to officially recommend the upper deck as the preferred alternative. By this time the upper deck had become a topic for public debate and controversy was raging. A group called the North Central Beautification Committee, claiming to represent 75% of the businesses along Central, declared all-out war on the

upper deck and ran a full-page advertisement in the *Dallas Morning News* to state their case. Developer Ray Nasher, owner of Northpark Mall, hired a consultant to review the double-deck concept and another developer was advocat-

ing a ground-level widening. Most city council members were unwilling to accept TxDOT's recommendation.⁴

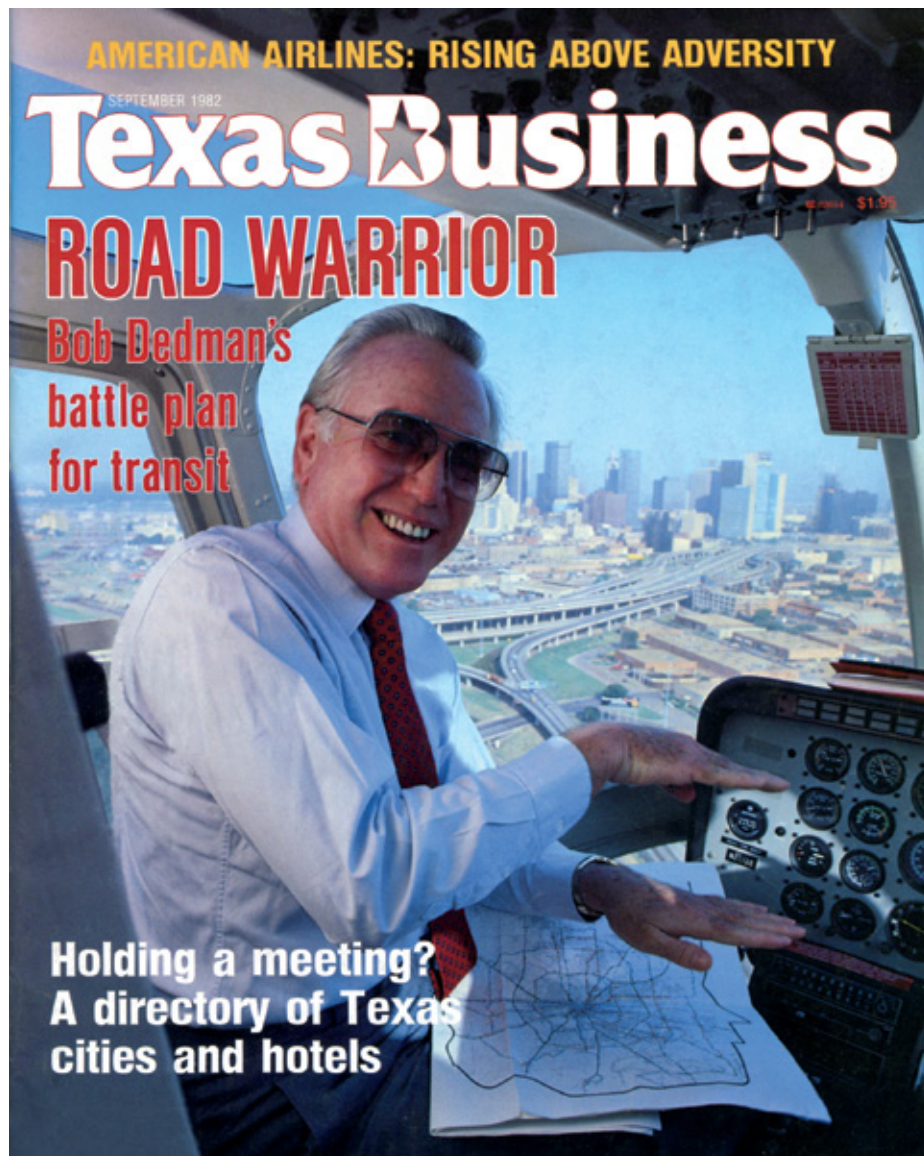
On March 23, 1979, Dallas City Council held a public hearing for Central and heard strong opposition to the upper deck. City Manager George Schrader actively opposed the upper deck, calling it a last resort and urging further study of alternatives. Both the Dallas Chamber of Commerce and the Central Business District Association were urging more study. The City of University Park was on the record opposing the upper deck. It was clear that the City of Dallas was not going to endorse the deck, but it was not yet ready officially reject it even though Mayor Robert



See page 143 for the corridor map north of Interstate 635

Timeline of Controversy and Construction

1964	First discussion of capacity improvements
1974	First official proposal for elevated lanes
1976	Dallas City Council first considers the project
1977	Dallas plans short-term improvements due to the anticipated long timeline for major construction
1979	The double deck proposal becomes highly controversial and generates substantial opposition. More studies are ordered.
1980	TxDOT reveals a plan for a ground-level expansion, requiring a major right-of-way clearance.
1981	Robert Dedman is appointed to the Texas Transportation Commission and advocates elevated lanes.
1982	On March 10 Dallas City Council votes 9-2 to support elevated lanes. Opposition to elevated lanes continues to build. Mark White wins the governor's election in November and planning for elevated lanes is immediately suspended.
1983	Houstonian Bob Lanier replaces Dedman as chairman of the Texas Transportation Commission in May. Lanier is more open to non-elevated options.
1984	A new study is launched to consider alternatives. The concept which became today's freeway is first presented in October.
1985	The study recommends the trenched option with DART rail in tunnels under the freeway. In December the first construction begins on the non-controversial section north of Interstate 635.
1986	On February 13 TxDOT officially approves the recommended design in Dallas.
1988	The first section north of LBJ Freeway, from LBJ to Belt Line, is completed. Sections to the north border of Plano open regularly through 1994.
1993-1994	Three large contracts are awarded for complicated work from Loop 12 to downtown.
1994	The first section in Dallas, from Forest Lane to Walnut Hill Lane, is completed.
1999	Freeway is officially dedicated on December 5.
2001	Construction contract is awarded for the High Five.
2005	High Five interchange is completed in November.



Billionaire businessman Robert Dedman became a key player in the controversy when he became chairman of the Texas Transportation Commission and began to advocate the upper deck. As a practical, bottom-line businessman, Dedman viewed the double deck as the fastest, least disruptive and least expensive way to fix the problem. In this September 1982 magazine cover, Dedman holds his hands above each other to show his approval of the upper deck.

Folsom had declared it dead. Instead, council approved a resolution asking that outside consultants be hired to study alternatives and recommend the most appropriate solution to the Central Expressway problem.⁵

By June 1979 the regional planning council appointed a task force and hired a consultant for the study. In August the team presented five alternatives for review, including the double deck option but not including a trench option similar to what was ultimately built. In September the team recommended an option which expanded Central to ten main lanes from downtown to LBJ Freeway, keeping the freeway at ground level and minimizing right-of-way ac-

DOUBLE-DECK CENTRAL DARKEN DALLAS

Opposition to the upper deck became vocal and well-organized starting in 1979. The North Central Beautification Committee purchased a full-page advertisement in the February 11, 1979, *Dallas Morning News* to state its opposition. The bold headline on the page was "Double Deck Central and Darken Dallas". The slogan was featured in a graphic which is shown above. The opposition advertisement was mostly a pro-transit essay, and in its first paragraph stated that any money spent on expanding highway capacity would be "wasted on furthering a mode of personal transportation that might very well be in the twilight of its existence even before the monolith is completed." The upper deck did not move forward, but the private automobile remains as strong as ever 34 years later.

quisition. Dallas City Council endorsed the recommendation. Although the double-deck option seemed to be dead, it would not go away so easily. The debate was really just getting started at this point.⁶

In May 1980 TxDOT returned with its design schematic for a ten-lane

ground-level freeway meeting modern standards, calling for expanding the freeway right-of-way corridor from its typical existing width of 220 feet to 350 feet. The required land acquisition would displace or impact a large number of businesses and homes along the freeway, making the project politically difficult and financially very costly. In January 1981 Dallas came back with its own proposal to squeeze the 10-lane freeway into a 289-foot-wide ground-level corridor, minimizing displacements and reducing cost. The proposal also was the first to officially include mass transit, calling for either a busway or rail line along the freeway corridor from Mockingbird Lane to down-

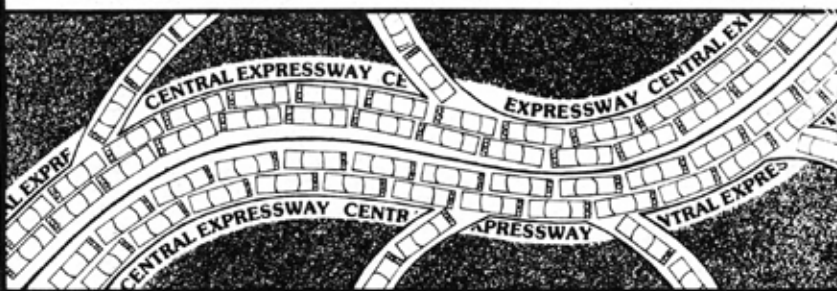
town, potentially on an elevated structure. But even with the narrower corridor, the ground-level expansion remained disruptive and expensive, potentially requiring up to 20 years to complete.⁷

In March 1981 a new player arrived in the Central Expressway debate when Governor Bill Clements appointed Dallas businessman Robert Dedman Sr to the Texas Transportation Commission. Dedman (1926-2002) made his fortune in the high-end leisure industry, founding ClubCorp in 1957 when he acquired land for Brookhaven Country Club near LBJ Freeway and Marsh Lane. ClubCorp would go on to become the world's largest owner and operator of golf courses, private clubs and resorts. The success of ClubCorp made Dedman a billionaire, and by the 1990s he had become one of the leading philanthropists in Dallas. But in 1981 Dedman was all business, and he was looking for a fast, practical and financially feasible solution to the Central Expressway problem. His answer: a return to the double-deck.⁸

In January 1982 Dedman presented his plan to Dallas City Council, calling for elevated structures with supports shaped like the letter T to be built between the main lanes and frontage roads from downtown to Park Lane. It was estimated that the so-called T-standard could be built in 5 to 7 years at half the cost of the ground-level option, which was expected to require 20 years to complete. The issue came to the forefront in March 1982 when Dallas City Council held a public hearing on the T-standard elevated lanes. About 300 protesters packed the council chambers to voice their opposition to the elevated lanes, with the only support coming from business groups. But the upper deck with elevated lanes was the only option which could provide relief in the near future, rather than the distant future. So on March 10, 1982, Dallas City Council voted 9-2 to endorse the T-standard elevated lanes. The Texas Transportation Commission officially expressed its support for the T-standard in July 1982 and planned to finance the project entirely with state funds, speeding up the project since the federal bureaucracy would be removed from the process.⁹

But opposition to the upper deck continued to build in 1982. Facing strong opposition from its citizens, the University Park City Council voted to oppose double decking in September. An organization called People Against Double

WE INTERRUPT THIS TRAFFIC JAM ...



... TO BRING YOU A NEW IDEA!

The City of Dallas is beginning a six-month test program to reduce traffic jams on Central Expressway. It starts Monday, May 11, and will include:

- **NEW WEEKDAY RAMP CLOSINGS**
To cut down on short trips and avoid the tie-ups caused by entering and exiting, the following ramps will close at rush hour:

 - Southbound on-ramps, Lover's Ln. and University Blvd.: 7am-9am
 - Northbound off-ramp, University Blvd.: 4pm-6pm
- **NEW EMERGENCY WRECKER SERVICE**
To speed removal of damaged vehicles or disabled vehicles from the expressway lanes, a new wrecker dispatch system will be established.
- **NEW ACCIDENT INVESTIGATION SITES**
To avoid blocked lanes in minor accidents, areas will be set up along the access roads for drivers to exchange licenses and insurance information.

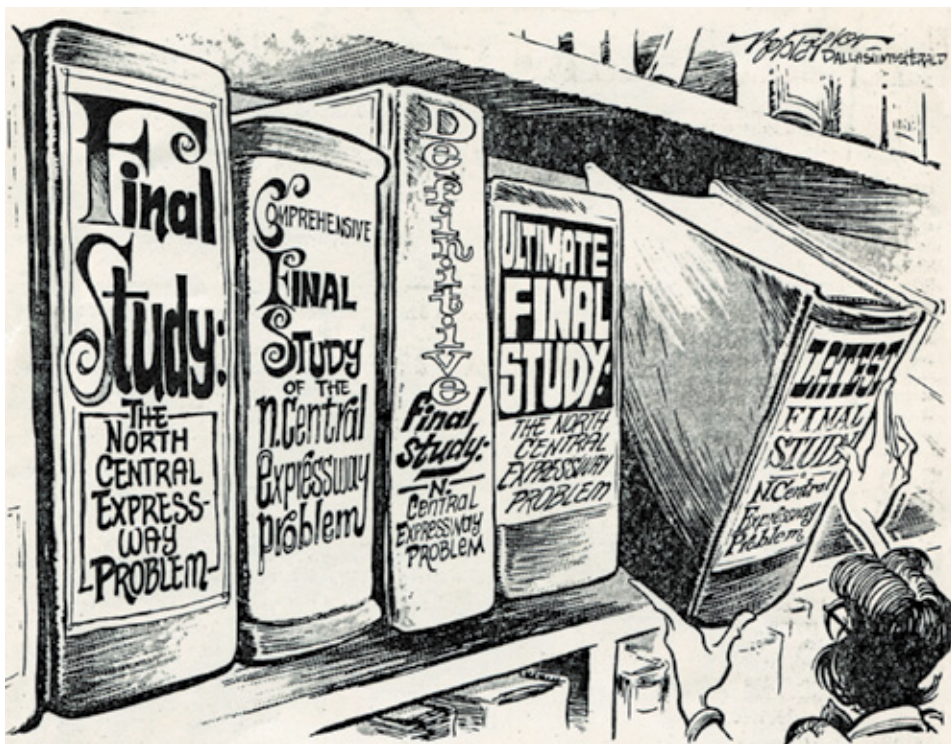
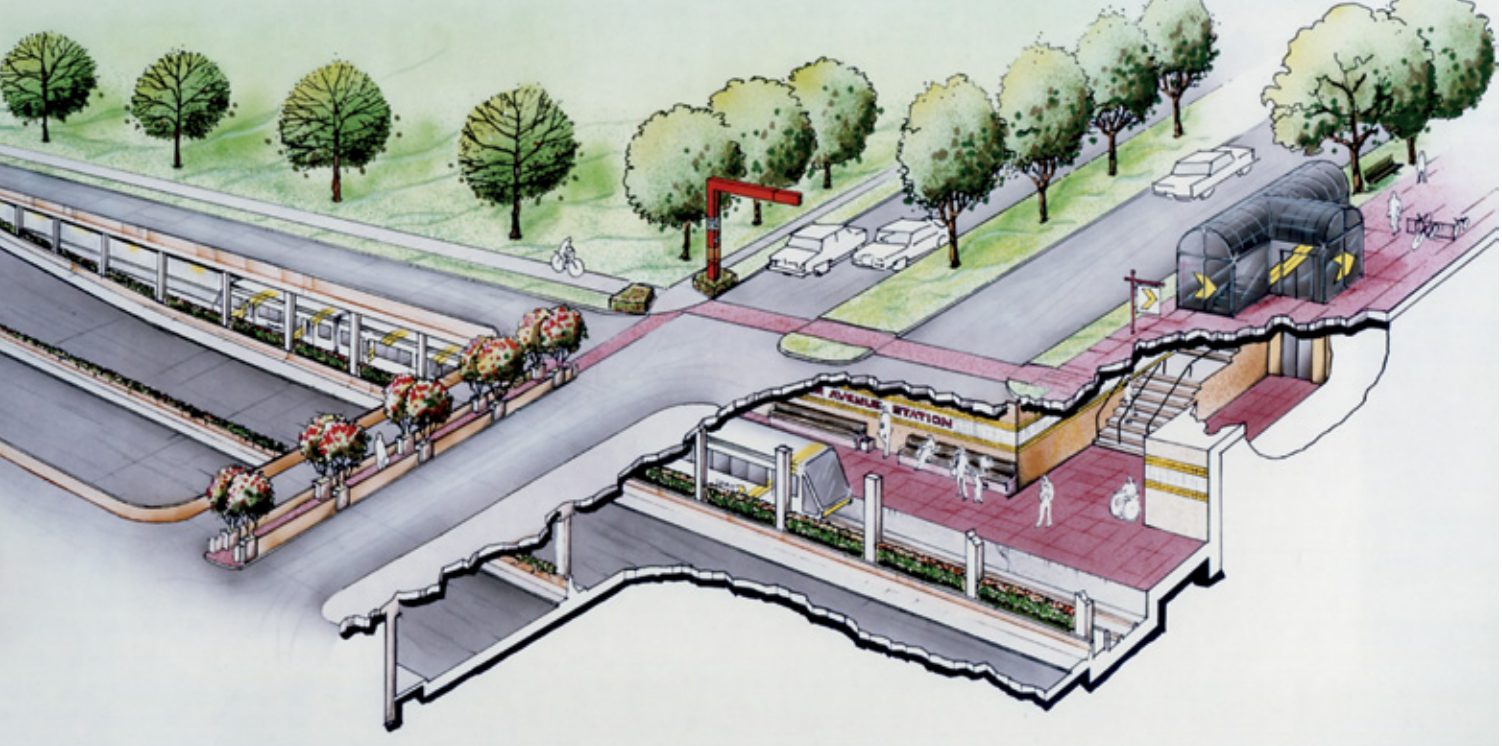


keep Dallas moving!!

As controversy raged and actual construction seemed to be in the distant future, the City of Dallas experimented with interim measures to try to manage the traffic jams on Central Expressway. This advertisement from the April 27, 1981, *Downtown Dallas News* announces a new test program. As part of the interim improvement program (but not associated with this advertisement), the missing section of frontage roads south of Mockingbird Lane was built.

Decking became increasingly active in its opposition. Dedman and Governor Clements were assuring the public that there would be plenty of opportunities for the public to remain involved in the process. The gubernatorial election of November 1982 was just ahead and it would become a turning point in the Central Expressway debate.¹⁰

The official position of gubernatorial challenger



The Central Expressway controversy was a great business opportunity for consultants who performed studies, and a new report was issued just about every year. This cartoon from the January 9, 1985, *Dallas Times Herald* has fun with the endless series of studies which did not produce a consensus for action. The study which resulted in the recommended design began in 1984.

Even after the freeway design was decided in 1986, studies continued on how to integrate DART light rail into the corridor. The above view from a June 1989 study titled *Service Road Transit Study* shows a depiction of a design concept in which the light rail tracks would be built underneath the frontage roads. This concept was not selected and the light rail was placed in bored tunnels underneath the freeway.

Attorney General Mark White was that the Central plan should be determined locally without any undue pressure from TxDOT. White defeated Clements and change came very quickly—even before White took office. At the request of White, TxDOT suspended further work on the elevated lanes in late November 1982 and in December an official agreement was reached with the City of Dallas to continue the suspension until Dallas requested a restart.¹¹

The City of Dallas and other local officials sought the delay to ensure that a transit element was included in the Central Expressway plan. The inclusion of transit became a certainty in August 1983 when voters approved the cre-

ation of Dallas Area Rapid Transit (DART) and a 1% sales tax to fund the agency's operations. The transit element for Central Expressway introduced even more complexity into an already complicated problem. A large number of potential options needed to be considered, including rail or bus on elevated structures, at ground level or in tunnels.

Dedman's influence was diminishing since he was a political supporter of ousted Governor Clements. In March 1983 White appointed Houston businessman Bob Lanier to the commission and Lanier replaced Dedman as chairman in May, returning Dedman to "member" status. Lanier was also a practical bottom-line businessman, so he was not

Ray Nasher was the developer and owner of Northpark Mall, located at the intersection of Central Expressway and Northwest Highway. Northpark has consistently been one of the most successful malls in the United States, and Nasher had a big stake in the ultimate decision on how to improve Central Expressway. Nasher was actively involved in the controversy, opposing elevated lanes and in 1983 submitting a plan for a ground-level widening. In this November 1989 photo, Nasher signs the legal documents to donate land needed for the Central Expressway expansion.

While Nasher (1921-2007) achieved his wealth in real estate, he and his wife had a passion for modern sculpture art. Starting in the 1960s they assembled the world's greatest private collection of modern sculpture. Nasher donated his collection, valued at over \$400 million in 2007, to the Nasher Sculpture garden in downtown Dallas, a \$70 million museum financed by Nasher and opened in October 2003.



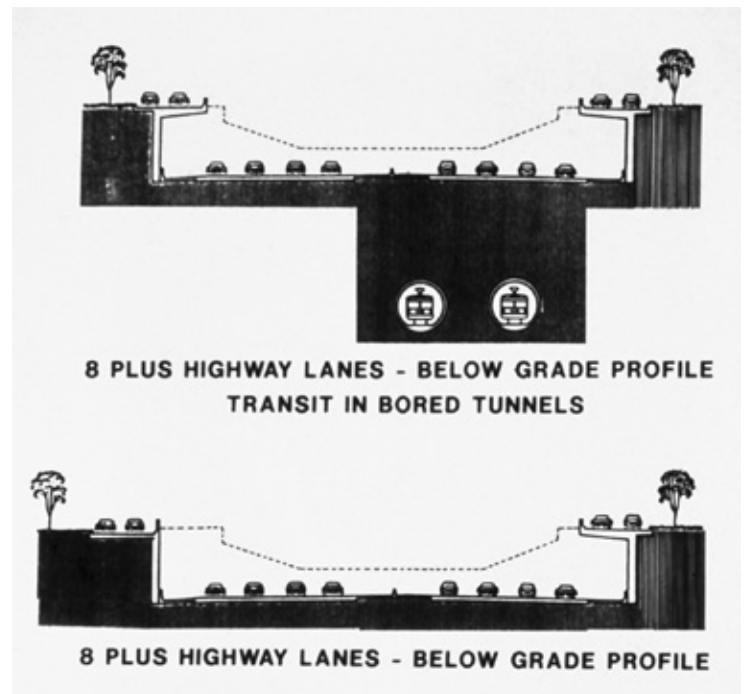
TxDOT Travel Information Division

willing to immediately dismiss the elevated freeway, which was the fastest and cheapest way to get the job done. In Dallas, city council support for the elevated freeway was waning. The elevated option barely survived a vote in March 1983 when council voted 6-5 to reject a resolution which would have killed the elevated lanes.¹²

In November 1983 TxDOT started to back away from its insistence on elevated lanes and Lanier urged Dallas to submit a locally preferred alternative. If the local alternative met certain criteria and Dallas was willing to pay for any cost increase in comparison to elevated lanes, Lanier indicated he would overrule state engineers and approve the plan.¹³

Still, reaching consensus on a plan acceptable to all stakeholders was going to be difficult. Recognizing this, Dallas Mayor Starke Taylor in early 1984 asked civic leader Walt Humann to form and lead a citizen's group called the North Central Task Force. The task force provided critical guidance to keep the project on track through the study process, preconstruction planning and construction.¹⁴

In July 1984 a new study was launched by Dallas and DART using a new consultant, this time with the specific objective of finding a viable alternative with no elevated structures and also including DART's planned rail line. Elevated structures were still included in the evaluation process, however. It was the eleventh formal study of Central Expressway in the previous ten



Texas Transportation Institute Dallas office

The design study initiated in 1984 and completed in 1985 identified the design which went on to become today's Central Expressway in Dallas. From downtown to Mockingbird Lane, the freeway is sunk into a continuous trench with the DART light rail tunnels underneath the freeway. From Mockingbird to Walnut Hill Lane, the freeway continues in the trench. In places where right-of-way is especially constrained, the frontage roads overhang the main lanes.



Dallas Morning News

This sign was erected to announce the start of work to rebuild and expand Central Expressway in Dallas. This view shows the original freeway looking north at Walnut Hill.

years. Was this going to be the study to break the logjam of controversy and finally move the project forward?¹⁵

In October 1984 the first preliminary drawings of a new design concept were shown, showing the freeway in a wide trench with frontage roads overhanging the main lanes and the DART rail line in a subway underneath the freeway. The chairman of the study committee expressed optimism that the concept would prove to be viable and gain the needed support to move forward. His optimism was justified. This idea would go on to become the recommended solution.¹⁶

In March 1985 the consultant team used a formal evaluation process to narrow the initial list of 29 options to eight options. The remaining contenders included options with elevated structures, both highway lanes and/or rail lines. In May 1985 a final decision was reached for the section from Mockingbird to Northwest Highway (which did not include rail), placing eight freeway main lanes in a trench. For the section south of Mockingbird, the options with elevated structures were eliminated. TxDOT Commission Chairman Lanier was still not ready to officially abandon the double-deck freeway south of Mockingbird, but indicated he would likely accede to the local recommendation. By this point the double-deck freeway was nearly dead, awaiting the final decision from Lanier to turn off life support.¹⁷

In July 1985 the final design south of Mockingbird was selected and approved by DART and Dallas City Council, placing eight freeway main lanes in a trench with overhanging frontage roads as needed to reduce right-of-way acquisition and the DART rail line in twin tunnels underneath the freeway. But a celebration party was premature

because one final task remained: getting Lanier's approval. All along, Lanier's primary concern had been the cost of the project and when Dallas officials presented the plan to Lanier in September, Lanier asked for the submission of detailed cost data for the four final options considered.¹⁸

Months passed and finally Lanier was ready to make a decision on February 13, 1986. Governor White, Lanier, the Texas Transportation Commission and about 150 local officials gathered at Dallas City Hall. The commission voted unanimously in favor of the locally recommended option. The crowd in attendance broke into applause for about a minute. Politicians and community leaders were exultant. The double-deck freeway was finally and officially dead, and the project could begin moving toward construction.¹⁹

Reconstruction

First came the easy part, from Walnut Hill Lane in Dallas to north Plano. Work began in December 1985 on the first section from IH 635 LBJ Freeway to Belt Line Road in Richardson. An official groundbreaking for the first work in Dallas was held in June 1990 for the section from Walnut Hill to LBJ. Reconstruction of the easy part was complete in 1994 (see maps pages 121 and 143).

Then came the difficult part, from downtown Dallas to Walnut Hill Lane. First, 273 parcels of right-of-way were acquired for around \$100 million, many requiring costly and time-consuming condemnation proceedings. Three major construction contracts were awarded in 1993 and 1994, and motorists were soon driving through a complicated construction zone and facing regular closures and detours. The original freeway, built at ground level and going underneath most intersecting streets, was sunk into



TxDOT Travel Information Division

This view looking south shows the construction of the Coit Road direct connector just north of Forest Lane in 1993. The connector was built with cast-in-place concrete, a technique rarely used in Texas but used nearly exclusively in earthquake-prone California. The structure underneath the overpass, called the falsework, forms the mold for the overpass concrete. The cast-in-place concrete overpass and nearby landscaping give this location of Central Expressway a California-style look.

a continuous 6-mile-long trench 20 to 25 feet deep. With little space to maneuver, construction crews dug the trench and gradually shifted traffic to the new lanes, demolished and rebuilt all cross-street bridges, and rebuilt the frontage roads which in some spots overhang the trench—all while keeping traffic moving.²¹

TxDOT built a new \$31 million, 3.1-mile drainage tunnel 85 feet below ground level. The City of Dallas spent \$28 million to excavate a large storage cavern under nearby Cole Park to collect and store storm runoff so the water can be gradually released into Turtle Creek. The City of Dallas was responsible for about \$101 million of the total project cost. The downturn in the Dallas economy in the early 1990s had the beneficial effect of moderating construction cost increases and lowering right-of-way costs, helping keep the project on track for completion. The final reported construction cost of the project from downtown to LBJ Freeway was \$441 million. There were no press reports of the total project cost including right-of-way and project management, but it appears to have been around \$600 mil-

lion, about \$900 million in 2013 dollars.²²

As work progressed it became clear that Central Expressway would not look like an ordinary freeway. It would become one of the most distinctive freeways in the United States with its unusual design features and architectural enhancements. Lattice structures of concrete beams adorned the entrance ramps, the trench walls featured pockets of landscaping, shades of beige and green softened the harshness of endless concrete and two intersections featured decorative structures.

Motorists were surely dreaming of the magic year 1999 when the pain of construction would translate into the gain of a beautiful new freeway. On November 29, 1999, the long-awaited day arrived when all lanes were open to traffic. The struggle to rebuild and modernize Central Expressway, which had begun in 1974, had reached its goal. An official dedication featuring a vehicles-only parade of antique and custom cars on the southbound main lanes from LBJ Freeway to downtown was held on December 5, exactly 40 years after the only other freeway parade in Dal-

AFRICAN-AMERICAN HISTORY AND CENTRAL EXPRESSWAY

In December 1985, in anticipation of the planned expansion of North Central Expressway, TxDOT sent an archaeologist to conduct an initial survey of the freeway corridor. The archaeologist discovered a location of interest alongside the freeway near downtown—a park named Freedman's Memorial Park which was identified as a former public cemetery. This finding would result in the largest cemetery excavation in the history of TxDOT, a 15-year effort which blazed a new trail in North Texas government-community cooperation.

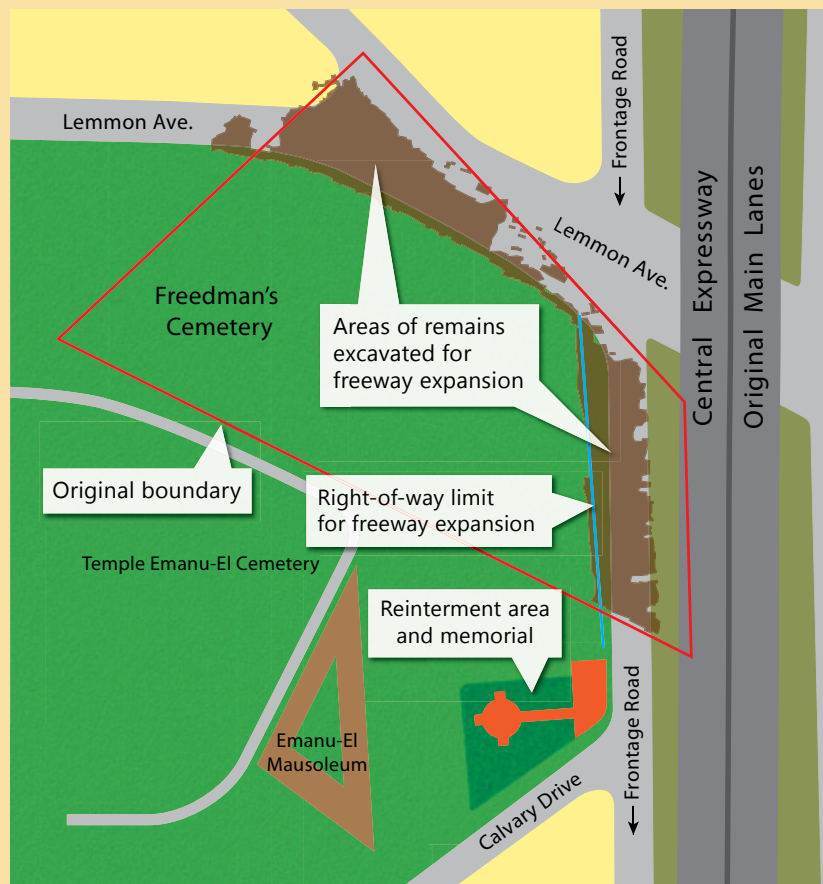
Freedman's Cemetery was within the Freedman's Town community, a neighborhood of freed slaves established after the Civil War. The Stringtown neighborhood located along the Houston & Texas Central railroad corridor was also predominantly black. The cemetery, located directly adjacent to the railroad, was active between 1869 and its closure in 1907 due to overcrowding. At first, the archeological impact seemed to be minimal. TxDOT would need to acquire a strip of land from the park varying from 8 to 18 feet wide, a total of 0.09 acres which was expected to have 20 to 30 burial sites. But the preliminary investigation revealed that the site was much larger and a compre-

hensive archeological investigation would be required.

During the original construction of Central Expressway the City of Dallas had acquired an 82-foot-wide strip of land from the eastern edge of Freedman's cemetery, and the southbound frontage road was built directly over the cemetery property with no archeological investigation. Around the same time the eastbound lanes of Lemmon Avenue were also built directly over the north side the former cemetery. Both the southbound frontage road and Lemmon Avenue would be rebuilt as part of the project, and stricter rules were in place to regulate the disturbance of cemeteries. In addition, Freedman's cemetery was of particular historical interest to the black community in Dallas and dignified handling of the site was a top priority of the community.

The archeological excavation of Freedman's cemetery proceeded with a partnership that was unprecedented in North Texas highway construction. TxDOT, the Dallas Parks Board, Black Dallas Remembered, Inc., the African American Museum and descendants of residents of Freedman's Town worked together to develop a plan to exhume and reinter the remains which would be affected

by the reconstruction. It turned out to be a huge undertaking, with the excavation of 1150 burial sites containing the remains of 1157 individuals taking place between May 1991 and August 1994. Remains were reinterred in a new site adjacent to the original cemetery in three ceremonies in 1994. Data analysis, scientific study and documentation continued until 2000, culminating with the completion of a comprehensive exhibit at the African American Museum in Dallas.²⁰





UT-Arlington Library Special Collections⁴⁰

With the original Central Expressway overpass at Lemmon Avenue visible in the background, state archeologist Jerry Henderson directs an excavator to carefully scrape off a thin layer of dirt as graves are uncovered as part of the reinterment program. Below, a worker excavates a grave site by hand, recovering all remains and artifacts. A total of 1150 burial sites with the remains of 1157 individuals were found.

UT-Arlington Library Special Collections⁴⁰





Dallas Morning News

The above April 1995 view shows demolition of the original McCommas Boulevard overpass. The original overpasses were long-lasting cast-in-place concrete and it took two hours of pounding from the wrecking ball before the last section fell.²⁵

This May 1996 view shows the construction zone at SMU Boulevard with trench excavation in progress on the lower right and the freeway main lanes snaking through the construction zone.



Texas Transportation Institute
Dallas office

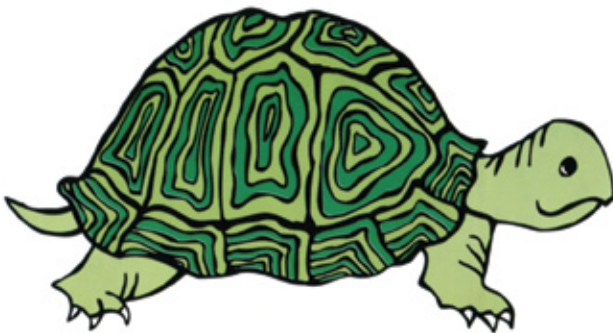
las, the opening of Stemmons Freeway in 1959 (see photo page 11).²³

However, Central Expressway was not yet complete. The planned interchange at IH 635 LBJ Freeway was dropped from the construction plan in 1990 due to funding shortfalls. So while motorists could cruise on the modern freeway through Dallas and into the north suburbs, at LBJ Freeway they still encountered the one remaining relic of the original Central Expressway. The interchange at LBJ Freeway, built in 1968 with obsolete design elements including two loop connectors and two left-side exits, would survive until construction funds became available. Fortunately, funding was secured soon after the completion of the main lanes and work could get underway on Central Expressway's most impressive feature.²⁴



Dallas Morning News

This October 1997 view shows the project nearing completion at the Park Lane overpass, which is under construction in the foreground. Traffic is on the final pavement on the right side of the photo as work continues on the northbound lanes on the left side. This section was completed in October 1998.



North Central Expressway, 1950

These images appeared on the cover of the final project newsletter for Central Expressway, distributed in advance of the December 5, 1999, opening parade. The chronically traffic-plagued original Central Expressway was transformed into a speedy freeway cruise, at least for the moment.



North Central Corridor, 2000

Also see: photo of the opening parade page 11

The Central Expressway Tunnels

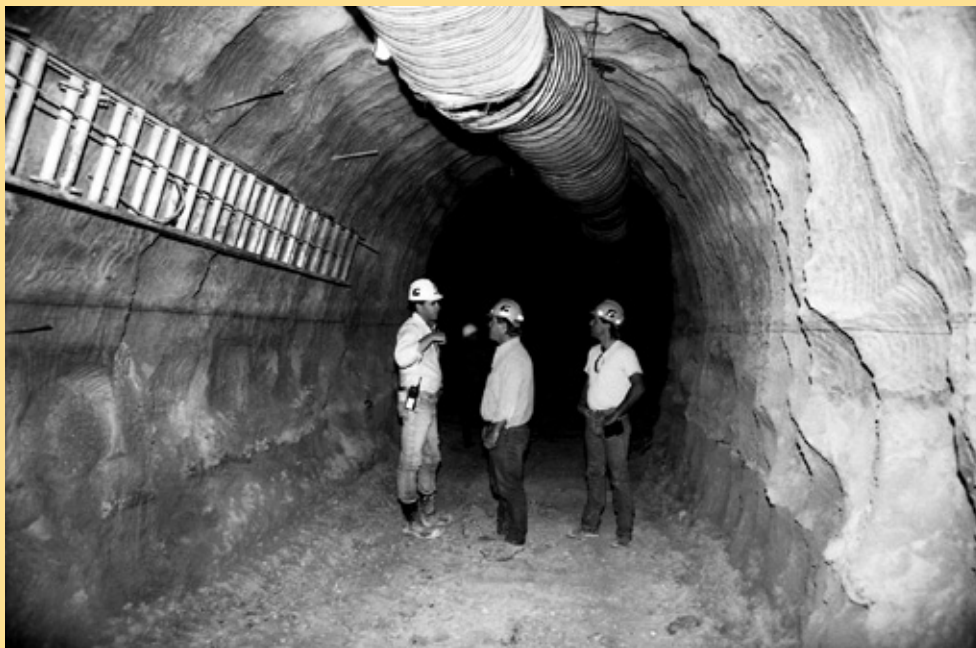
The reconstruction of Central Expressway wasn't just a freeway construction event—it also included three large tunnel projects. The largest project was the construction of the 3.5-mile twin tunnels underneath the freeway from Mockingbird Lane to Ross Avenue between January 1992 and January 1994 for the DART Red Line light rail. The project was completed within the total \$114 million budget, which included \$87 for the tunnel boring. The bottom photo shows the substantially complete tunnel near the Cityplace station with a utility tunnel branching to the right.

The second project was the construction of a 3.1-mile, 18-foot-diameter, \$31 million freeway drainage tunnel from Lemmon Avenue to University Boulevard between 1990 and 1993. The upper photo shows workers in a smaller secondary tunnel. The tunnel is 85 feet below ground level with 18 shafts to the surface and connects to the third major project, the Cole Park detention cavern.

Cole Park, one block west of Central Expressway just south of Fitzhugh Avenue, looks like any other park with its ball fields, tennis courts and grassy lawn. But underneath the park is a system

of large excavated caverns which store stormwater from the Central Expressway drainage system. Water in the cavern is released into Turtle Creek gradually to prevent flooding. The \$28 million project, completed in 1993 and fully operational in 1996, has 13 parallel caverns, each 40 feet tall, 24 feet wide and 842 feet long. The vault can hold 218 acre-feet of water—71 million gallons.³⁹

TxDOT Travel Information Division



Texas Transportation Institute Dallas Office





Author, 2009

The concrete-beam lattice structures which frame the entrance and exit ramps on Central Expressway are the most distinctive architectural enhancement of the freeway. The above photo shows a section of frontage road at Northwest Highway which has latticework on both sides. The southbound on-ramp at Caruth Haven Lane shown below is typical for most freeway on-ramps, with the latticework positioned between the on-ramp and the main lanes.

Author, 2009





TxDOT Travel Information Division



Dallas Morning News

This view on the Mockingbird Lane overpass just after the 1999 completion shows some of the architectural enhancements that were part of the project, including the pagoda, roomy brick-paved sidewalks and the ill-fated decorative spheres called bollards. Motorists developed a bad habit of driving into the bollards, smashing them to pieces at a rate of about 10 to 15 per month. With a replacement cost of \$600 per bollard, TxDOT decided in 2004 that the bollards were just too expensive to be part of a daily destruction derby with cars, so the remaining 478 bollards were removed from Central Expressway.

This view looks northbound at the Monticello Avenue overpass, with landscaping in the retaining wall visible on the right.

Author, March 2007

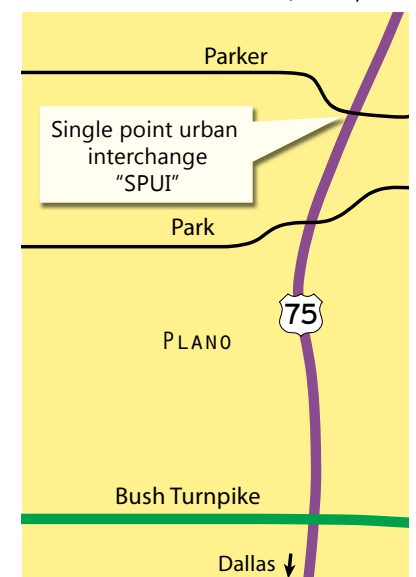




Justin Cozart, January 2012

SPUI Traffic engineers will recognize this interchange as a single-point urban interchange, typically identified by its acronym SPUI. This SPUI at the intersection of Central Expressway and Parker Road in Plano opened in December 2010 and is the only one in the Texas state highway system. A normal freeway-to-street intersection requires two traffic signals, one at the frontage road on each side of the freeway. In a SPUI there is only one traffic signal in the center of the intersection, the “single point”. The SPUI design allows two left-turn movements to occur simultaneously, a big advantage for this intersection since all traffic exiting or entering the freeway is making a left turn. SPUI interchanges are also space efficient, making them attractive for tight spaces. U-turns are not standard in SPUI designs, but in Texas U-turns are a must so this SPUI could be called a Texas-style SPUI.

Although this is the only SPUI in the state highway system, North Texas has had a SPUI-style interchange for a very long time. Around 1962 the City of Fort Worth built a grade separation at the intersection of Beach Street and East Lancaster Avenue in east Fort Worth with turning movements similar to the modern SPUI.



Dallas High Five

The graphic features two stylized white figures with black outlines, standing on a blue background and reaching their arms up to hold five stars. The stars are colored green, red, black, blue, and yellow. The word "Dallas" is in a smaller, white, sans-serif font above the word "High", and "Five" is in a larger, white, sans-serif font to the right of "High".

Until the 1980s the typical freeway-to-freeway interchange in Texas had four levels of traffic: the main lanes of each freeway and two levels for connecting ramps. In the 1980s TxDOT engineers began to bring the frontage roads of both freeways through the interchange, introducing the fifth level of traffic and launching the era of the five-level interchange. Houston took the lead with five-level interchanges, completing the first in 1989 at Interstate 10 and the Beltway 8/Sam Houston Tollway, and others in the 1990s and 2000s around Beltway 8. The original design for the High Five interchange, approved in October 1993, included five levels but did not include the HOV connector and the managed lanes on IH 635. The final design was approved in 2001, also adding the wishbone-style HOV ramps north of the interchange on Central Expressway and a T-ramp connection to the HOV lanes on IH 635 east of the interchange.

Anticipation was building for the planned new five-level interchange even before the final completion of the Central Expressway main lanes. In October 1999 the Dallas TxDOT office asked the public to submit names for the new interchange. A day later the *Dallas Morning News* published a listing of some of the suggestions received, including some obvious strong candidates as well as numerous silly, comical names. At the top of the list of strong candidates: the High Five and the Lone Star, both suggested by numerous people. A year later in October 2000 TxDOT officially announced that the interchange would be named the High Five. The name would go on to become a success, being widely used by the public and press.²⁶

Approximately 460,000 vehicles per day passed through the interchange at Central Expressway and LBJ Freeway in 2000, and keeping traffic flowing smoothly was the greatest challenge in the construction of the High Five. Unconventional construction techniques, aggressive project management and an all-new, \$1 million construction machine met the challenge to minimize inconvenience to the public.²⁷

Bids for construction were opened on April 3, 2001, with San Antonio-based Zachry Construction submitting the winning bid of \$260.9 million. Project engineers designed the connection ramp main spans to be built with a technique called precast segmental, in which sections of the ramps are cast in a nearby yard and then positioned in place at the end of the ramp, slowly building it one section at a time. This technique allowed the spans to be longer than the usual steel beam designs and, more importantly, minimized disruptions to the traffic below. Zachry's Italian partner Deal S.R.L. developed an all-new machine dubbed

Above: Official graphic of the High Five construction project

the Segment Erector to lift bridge sections into position. The Segment Erector eliminated both the need for large cranes to lift the bridge sections and the usual requirement for a support truss along each ramp section.²⁸

For the project schedule, the original eight-year construction plan was shortened to five years with incentives up to \$11 million for early completion and a penalty of \$80,000 per day if the project was late. To minimize traffic disruptions, the contractor was charged for lane closures, ranging from \$50 per hour at night to \$22,500 per hour during peak traffic periods. This incentivized Zachry to perform much of the disruptive work during the night. The regular 400-watt bulbs in the high mast lighting at the interchange were replaced with 1500-watt bulbs to brightly illuminate the construction zone at night.²⁹

By January 2002 construction work had reached full speed. Motorists driving through the interchange saw the massive interchange rise around them, with the bright yellow Segment Erector often positioned above the traffic as it built the connection ramps one section at a time. Construction proceeded ahead of schedule, with all regular traffic lanes completed and opened on November 21, 2005, well ahead of the scheduled January 2007 completion and earning Zachry its \$11 million early completion bonus. The total project cost was approximately \$369 million, including the construction cost of \$261 million, \$97 million for right-of-way acquisition and utility relocation, and the \$11 million bonus. The project was recognized with multiple awards, including the American Public Works Association's 2006 Project of the Year.³⁰

The High Five also met the challenge to distinguish itself with its aesthetics. The segmental design of the main ramps provided a sleek, California-style look rarely seen in Texas and the concrete structures were adorned with stars and visual enhancements. Sections of ramps using conventional pier-and-beam construction were designed to mimic the sleeker look of the segmental ramps. All interchange structures were painted in earthy hues of green, red and beige, a color scheme which was perfected after the initial pastel colors just didn't look right. The retaining walls along LBJ freeway use embedded patterns to depict Cottonwood Creek, which flows underneath the interchange, and a \$4.2 million bicycle trail alongside the creek was opened in 2010. There is no doubt—the High Five is the crown jewel of North Texas freeways.³¹



TxDOT Travel Information Division

This November 2002 view looks northeast across the construction zone with several ramps in various states of completion. The segment erector machine is in position on the top level ramp in the background.

This early 2003 view looks east across the interchange construction zone with the eastbound lanes of Interstate 635 LBJ Freeway in the foreground.

Also see: photos of the original interchange, pages 212 and 213

Author, November 2002



THE SEGMENT ERECTOR

The segmental erector was a one-of-a-kind machine specially built by Zachry's Italian partner Deal S.R.L. to meet the challenges of building the High Five. The segment erector was positioned on the end of the connection ramps where it lifted the next section into place, as shown in these photos. After placing a section, the erector was moved to the opposite end of the ramp to add the next section, building the ramp outward from its center in a balanced, step-by-step process. By eliminating the need for cranes to position the sections, the erector minimized disruptions to traffic flow on the lanes below. The erector was also well-suited for night-time work, further reducing the inconvenience to the 460,000 vehicles which passed through the interchange daily.



Photos: Zachry Construction Corp.



The ramp sections were prefabricated in a casting yard on the southeast side of the interchange.



Here a section is being lifted into position in 2003 on the top-level ramp which connects eastbound LBJ Freeway to northbound Central Expressway. This view looks north-bound along Central.





Author, 2009

Above, a ground-level view of the High Five and its decorative paint job. Below, looking southwest across the interchange.

Author, April 2011



This aerial view looks northbound along Central Expressway at the High Five interchange with Interstate 635 LBJ Freeway crossing from left to right. The Cottonwood Trail bicycle and pedestrian path, opened in 2010, is visible along the creek on the right side of Central Expressway. Left is a ground-level view looking northbound.

Author, November 2007

Author, April 2011





TELECOM CORRIDOR.....RICHARDSON, TX

City of Richardson

Looking northbound just north of Arapaho Road in 2010.

Also see: origins of Collins Radio, pages 107 and 114-115

With the 1958 opening of the Collins Radio engineering center at Central and Arapaho Road and the Texas Instruments Semiconductor Building at Central and LBJ, the technology boom on Central Expressway had begun. TI's campus would grow very quickly and achieve national prominence for its achievements, starting with Jack Kilby's invention of the integrated circuit just months after the Semiconductor Building opened. The growth of the telecommunications industry, focused on the section of Central Expressway from Arapaho to Renner Road, would be a steady process for decades, finally reaching international prominence by the late 1980s.

The development of the Telecom Corridor from its 1950s origins into the 1980s was driven by advancing technology and private enterprise. There was no formal plan, minimal government guidance and no nearby university research center. It was a classic case of concentration of a specific industry, a phenomenon called agglomeration by economists, and for the Telecom Corridor it was driven by both traditional reasons and fortuitous events. Traditional reasons included an attractive business climate, the tendency of firms to locate near a supplier or customer, startups by entrepreneurs from established firms in the area, firms entering the concentration zone by acquisition, firms looking for a specialized work force, or, in later years, the desire to join a well-established region. Fortuitous events for the Telecom Corridor included the unwillingness of AT&T to sell equipment to potential competitors,

sending those competitors to Telecom Corridor suppliers. The breakup of AT&T in 1984 created a wide-open telecommunications market, an opportunity seized by Telecom Corridor firms.³²

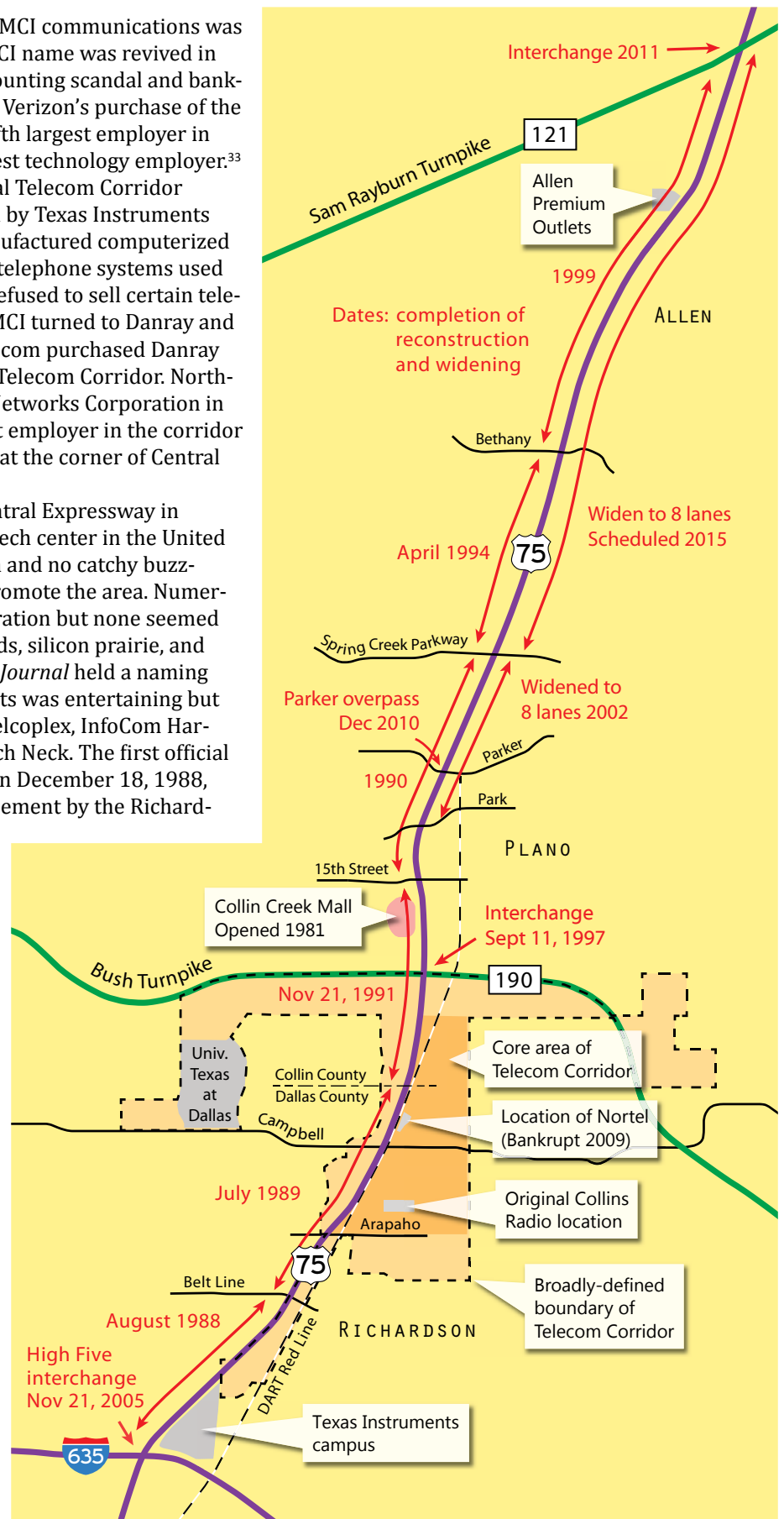
Collins Radio was the original telecommunications firm in the Telecom Corridor and served as the foundation for all future growth. The second most influential company in the growth of the Telecom Corridor was MCI Communications, which was incorporated in Washington DC in 1968 as Microwave Communications, Inc. After its founding MCI began a long-running legal campaign to receive permission to compete with AT&T in the long-distance communications market. In 1971 MCI received final permission to build a microwave relay communications system between Chicago and St. Louis, and Collins Radio in Richardson was MCI's supplier for the microwave equipment. MCI established an engineering facility in Richardson in 1972 to be close to Collins. As MCI built a nationwide microwave communication network, its Richardson operation expanded and ultimately became one of the largest in the Telecom Corridor. MCI's heft would attract other equipment manufacturers to the corridor, including Ericsson, Fujitsu and Alcatel. Rockwell International took control of Collins Radio in 1973 and sold the commercial (non-defense) com-

munications division to Alcatel in 1991. MCI communications was purchased by Worldcom in 1998. The MCI name was revived in 2003 following the 2002 Worldcom accounting scandal and bankruptcy, but once again disappeared with Verizon's purchase of the firm in 2006. In 2013 Verizon was the fifth largest employer in the Telecom Corridor and the third largest technology employer.³³

A lesser-known but highly influential Telecom Corridor pioneer was Danray. Danray was formed by Texas Instruments engineers in 1968 and in the 1970s manufactured computerized private telephone exchanges, which are telephone systems used by businesses. In the mid-1970s AT&T refused to sell certain telecommunications equipment to MCI, so MCI turned to Danray and business took off. In 1978 Northern Telecom purchased Danray and established its first presence in the Telecom Corridor. Northern Telecom, officially renamed Nortel Networks Corporation in 1998, would go on to become the largest employer in the corridor in the 1990s with a huge office complex at the corner of Central and Campbell Road.³⁴

By the late 1980s the area along Central Expressway in Richardson had become a leading high-tech center in the United States, but there was limited recognition and no catchy buzzword like California's Silicon Valley to promote the area. Numerous names had been floated for consideration but none seemed to take hold, including telecom crossroads, silicon prairie, and switch alley. In 1988 the *Dallas Business Journal* held a naming contest for the area and the list of finalists was entertaining but forgettable: Tel-Tech city, Phone Zone, Telcoplex, InfoCom Harbor, and, without any explanation, Hi-Tech Neck. The first official use of the name Telecom Corridor was on December 18, 1988, in the *Dallas Times-Herald* in an advertisement by the Richardson Chamber of Commerce welcoming Fujitsu to the Telecom Corridor. The name stuck, and from that point on the telecommunications industry concentration on Central Expressway would become known as the Telecom Corridor. Of course, without Central Expressway there would be no corridor, so the name gave implicit credit to the freeway for making it all possible. When *BusinessWeek* magazine featured six high-tech hotspots on its cover in October 1992, the Telecom Corridor was shown as a star on a highway.³⁵

Growth in the Telecom Corridor continued, reaching a crescendo in the late 1990s as the nationwide high-tech boom drove all technology industries into an unprecedented expansion. 2000 was a banner year for Richardson and the Telecom Corridor, with Richardson adding 10,500 new jobs with 28 corporate relocations and expansions. Richardson was home to 85,000 jobs—second in North Texas only to the 126,000 in Dallas' central business



This advertisement in the December 18, 1988, *Dallas Times Herald* welcoming Fujitsu to their new facility was the first official use of the term Telecom Corridor.

district.³⁶

Then came the great high-tech bust in 2001, and the Telecom Corridor was hit hard. In the following years tens of thousands of technology jobs were eliminated and the office vacancy rate climbed to 30% as firms shrunk their operations. The highest-flyer during the peak of the boom, Nortel, sustained the most severe crash as employment plunged from a peak of almost 10,000 in 2000 to 3000 in 2009 when the firm filed for bankruptcy and was dismantled.³⁷

For the Telecom Corridor, things would never be the same again as two new trends emerged in the 2000s: decentralization of the telecom industry in North Texas and diversification in the Telecom Corridor. In 2013 numerous telecom firms in North Texas are located outside the Telecom Corridor in other cities, with Blackberry (originally Research in Motion) and Nokia in Irving and Ericsson in northwest Plano near the Dallas North Tollway. Non-telecom firms have an increasing presence in the corridor. In 2013 AT&T was the largest employer in the Telecom Corridor with 4300 employees, but the next two largest employers were non-technology firms—Bank of America with 3300 employees and health insurer Blue Cross & Blue Shield of Texas with 3100 employees.³⁸

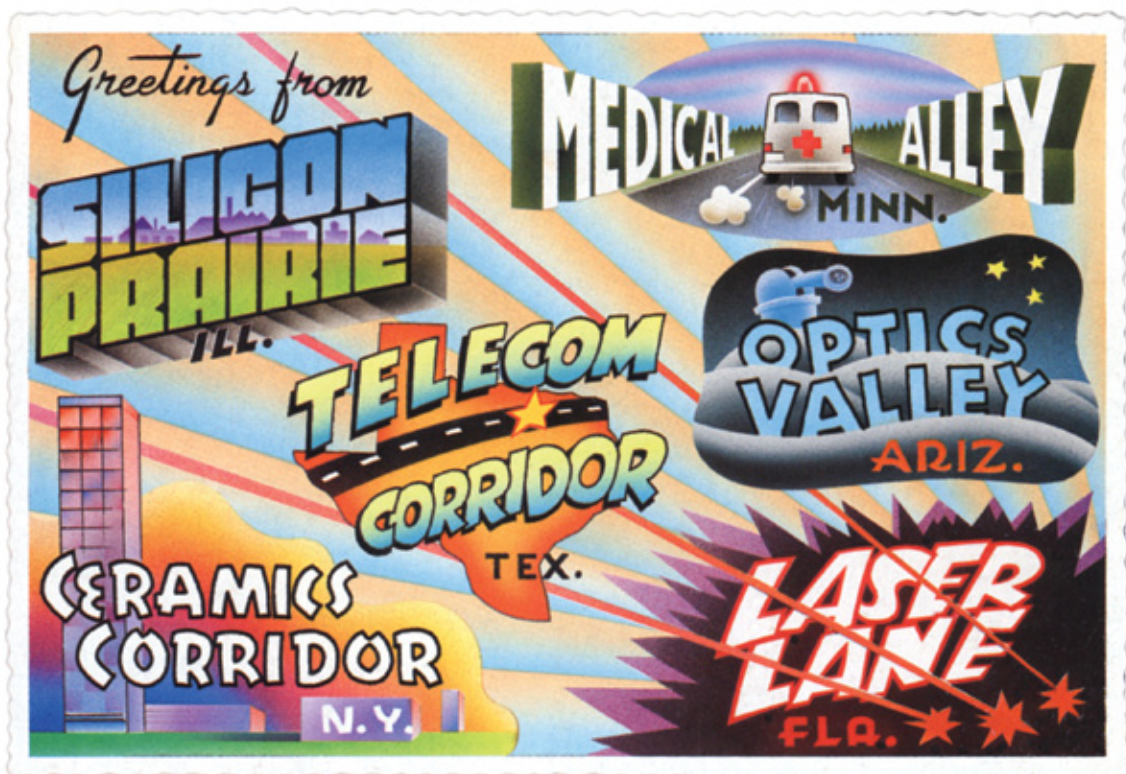
In spite of all the strife, telecommunication firms still dominate the corporate landscape along the freeway and the name Telecom Corridor has survived. And of course, amid all the evolution, Central Expressway remains the backbone of it all.

R
The City of Richardson
and
The Richardson Chamber of Commerce
salutes
FUJITSU AMERICA, INC.
upon

the recent announcement of a major U.S. expansion at the Shiloh Business Park in Richardson. Fujitsu America's new \$80 million telecommunications center joins more than 200 high tech companies in Richardson's Telecom Corridor.

Congratulations to The Perot Group, Vantage Realty Services and the TaiVan Corporation for their efforts on this project.

For further information on Richardson's Telecom Corridor, contact: The Richardson Chamber of Commerce, Department of Economic Development, 411 Belle Grove, Richardson, Texas 75080 (214) 234-4141.



This graphic appeared on the cover of *Businessweek* magazine on October 19, 1992, with the headline "Hot Spots: America's New Growth Regions". (Bloomberg, the owner of *Businessweek*, does not allow the magazine cover to be reprinted.) Appropriately, the Telecom Corridor was depicted as a star on a highway.



Author, June 2009

Northwest Highway

Northwest Highway is the busiest non-freeway intersection on Central Expressway. The lower photo shows Central Expressway just prior to the reconstruction which began in 1993, showing the cloverleaf interchange and the original Central Expressway with only four main lanes. The above photo from June 2009 shows the modernized intersection and expanded freeway.

Also see: Northwest Highway historical photos, page 100





Author, June 2009



Knox-Henderson

This June 2009 aerial view looks southbound at the overpass for Knox Street (to the right) and Henderson Avenue. The overpass features architectural enhancements—the pillars and the landscaping.

GEORGE W. BUSH PRESIDENTIAL CENTER

★ ★ ★



Author, June 2009



The photo above shows the site for the Bush Presidential Center along Central Expressway in June 2009. The view looks southwest with SMU Boulevard in the foreground. Prior to being cleared, the property was filled with low-rise apartment buildings built in the 1950s and 1960s. At left, Condoleezza Rice and Dick Cheney join George and Laura Bush for the ceremonial groundbreaking at the site on November 16, 2010. The Bush Center opened on April 25, 2013.⁴¹

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DMN=*Dallas Morning News*; DTH=*Dallas Times Herald*; FWST=*Fort Worth Star-Telegram*

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