Texas Department of Transportation
Fort Worth District

FHWA-TX-EIS-99-05-D
DRAFT ENVIRONMENTAL IMPACT STATEMENT

State Highway 121 from Interstate Highway 30 to FM 1187 in Tarrant County

CSJ 0504 02 008
CSJ 0504 02 013

Submitted Pursuant to 42 U.S.C. 4332(2)(c)

by the
US Department of Transportation
Federal Highway Administration
Texas Department of Transportation
North Texas Tollway Authority
&
Cooperating Agency
US Environmental Protection Agency

December 2002

FHWA-TX-EIS-99-05-D

STATE HIGHWAY 121 FROM INTERSTATE HIGHWAY 30 TO FM 1187 IN TARRANT COUNTY, TEXAS

CSJ: 0504-02-008
CSJ: 0504-02-013

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Submitted Pursuant to 42 U.S.C. 4332(2)(c)

by the
U.S. Department of Transportation
Federal Highway Administration
Texas Department of Transportation
North Texas Tollway Authority

Cooperating Agencies:
US Army Corps of Engineers
US Department of the Interior (Fish and Wildlife Service)
US Environmental Protection Agency

12-19-02
Date of Approval

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For FHWA

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Date of Approval

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The action proposed is the construction of a segment of State Highway 121 (SH121) on a new alignment from Interstate Highway 30 (IH30) to Farm-to-Market 1187 (FM 1187) in Fort Worth, Tarrant County. Construction of this project would result in a six lane (IH 30 to south of IH 20) and four lane (south of IH 20 to FM 1187) controlled access highway with frontage roads only in those locations where they would be essential to maintain local street circulation and continuity. A segment of the proposed facility is proposed as a toll road.

Comments on this draft EIS are due 45 days from the date the notice of availability is published in the Federal Register, and should be sent to the Texas Department of Transportation Fort Worth District Office at 2501Southwest Loop, Fort Worth, TX 76133.

SUMMARY

Description of Proposed Action

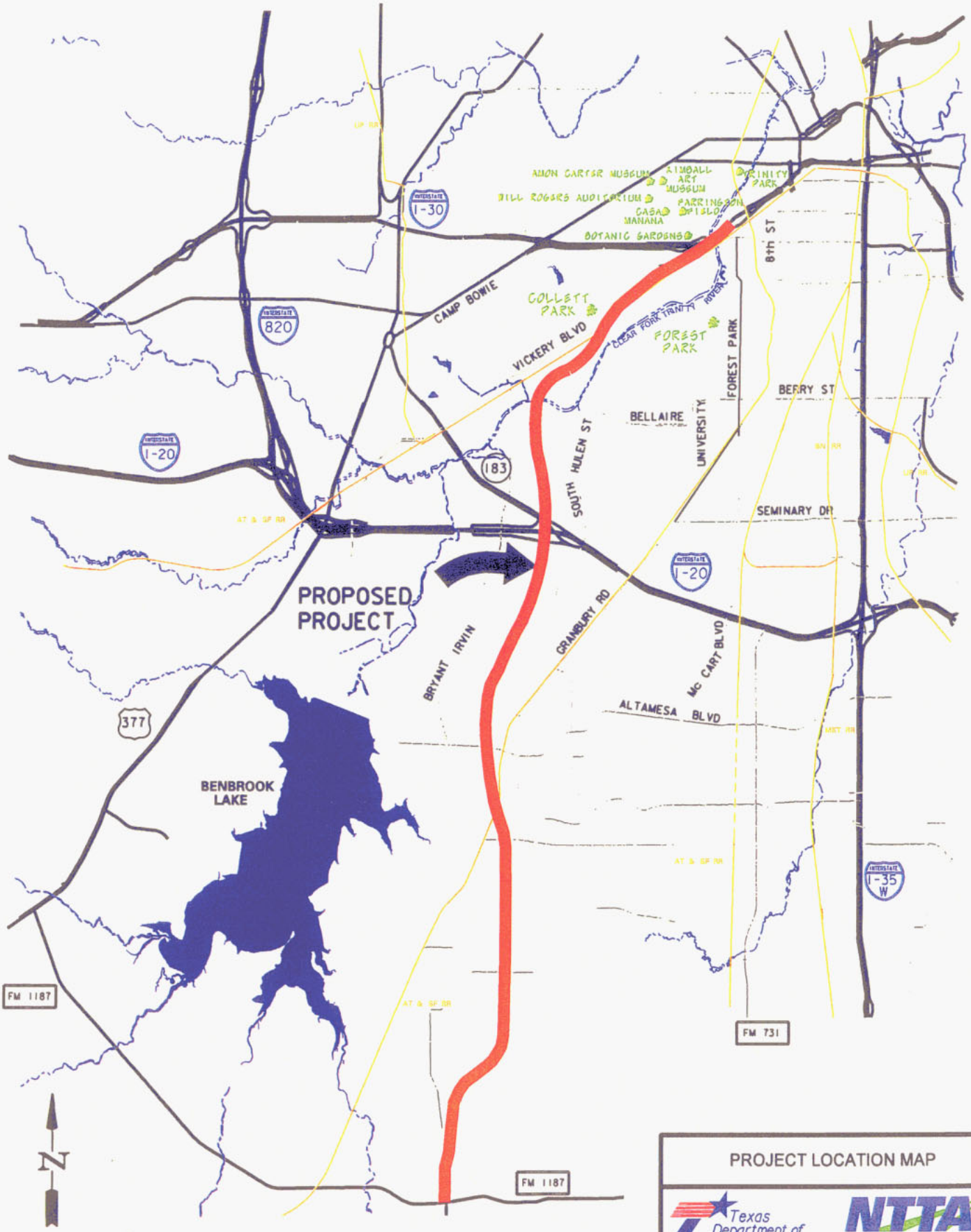
The State Highway (SH) 121T project is a multi-lane controlled access highway that, in its entirety, would extend from Interstate Highway (IH) 30 near downtown Fort Worth in Tarrant County to the United States Highway (US) 67 in Cleburne, Johnson County, Texas. This study covers only a section of the proposed facility, extending from IH 30 to Farm-to-Market Road (FM) 1187, for a total project length of 15.1 mi. Exhibit 1 is a geographical representation of the project study corridor (PSC). The entire facility is proposed on a new alignment. It would traverse a large portion of the City of Fort Worth with major interchanges at IH 30 and IH 20/SH 183.

IH 30 (the northern terminus) is a major interstate highway that facilitates traffic moving east-west through the Dallas/Fort Worth area. Additional improvements north of IH 30, though ultimately desirable for regional mobility, would not be necessary to make the proposed facility effective. FM 1187 (the southern terminus) is a major arterial, included on the National Highway System, that serves traffic moving through southern Tarrant County. Additional improvements further south to facilitate the use of the proposed SH 121T would not be necessary. The limits of the project were approved as logical termini by the Federal Highway Administration (FHWA).

The proposed action would provide a major link in the regional highway network. The extension of SH 121T is part of the North Central Texas Council of Governments' (NCTCOG) regional transportation plan and the City of Fort Worth's Master Thoroughfare and Comprehensive Plans. The proposed roadway would provide a needed alternate relief route to the already congested urban arterials serving southwest Tarrant County, as well as the IH 30 and IH 35W freeway corridors.

The proposed action would primarily be a divided highway. From the northern terminus at IH 30 to IH 20, the proposed facility would ultimately be six lanes. South of IH 20 to the southern limit at FM 1187, the ultimate facility would be four lanes. However, until warranted due to future increases in traffic volume, only a part of the ultimate 6/4-lane facility is being proposed at this time. As currently proposed, the facility would vary from four lanes between IH 30 and IH 20, to two lanes south of IH 20 to FM 1187. Limited frontage road access would be provided where needed for local traffic circulation. Where frontage roads are not provided, the typical right of way (ROW) width would be 220 feet (ft). In areas where frontage roads are provided, a minimum ROW width of 310 ft is proposed. The facility would require acquisition of approximately 635 acres (ac).

Though proposed as a staged facility, the action described in this document is consistent with the area's financially constrained *Mobility 2025 Plan Update: The Metropolitan Transportation Plan* and the *2002-2004 Transportation Improvement Program* (TIP) found to conform to the Clean Air Act Amendments of 1990 (CAAA) by the United States Department of Transportation (DOT) on October 19, 2001. The proposed action was found to conform to the Air Quality State Implementation Plan (SIP), that was approved on April 10, 1997, by the Regional Transportation Council (RTC) and received a favorable joint record of review from the FHWA and the Federal Transit Administration (FTA) on September 4, 1997. Since that time, modifications to the concept and scope of identified projects submitted by local governments and the Texas Department of Transportation (TxDOT) have required revisions to the air quality conformity determination. The most current conformity determination continues to meet the requirements of the SIP, the Clean Air Act (42 USC. 7504, 7506 (c) and (d)) as amended on November 15, 1990 and the transportation conformity rule (40 CFR Parts 51 and 93). Additionally, the project comes from an operational Congestion Management System (CMS) that meets all requirements of 23 CFR-Highways, Parts 450 and 500.



PROJECT LOCATION MAP

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T
(SOUTHWEST PARKWAY)
FROM : IH 30
TO : FM 1187

EXHIBIT 1

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The project, as currently proposed, has been planned so that future improvements to the facility may be accommodated within available ROW limits. However, it should be noted that any plans for future expansion to a 6/4-lane facility will require a re-evaluation of project impacts and submission of environmental documentation.

Throughout this document, reference will be made to the project as SH 121T or the "Southwest Parkway." The name SH 121T was adopted in the early stages of the project's development, and was carried forth as an extension of the SH 121T system. The proposed route was added to the Texas highway system in October 1973, following approval of a recommended alignment. However, as the project began to gain public and media attention in the early 1980's, it was more commonly referred to and recognized as the "Southwest Freeway" and not State Highway 121. This led to its current designation as the Southwest Parkway, when plans for a "freeway" facility were replaced with the currently proposed tollroad facility.

Major Actions Proposed by Other Government Agencies

The City of Fort Worth is currently preparing plans for the extension of Bellaire Drive from its current terminus to Bryant Irvin Road. Construction is expected to begin pending the outcome of scheduled public involvement activities. The proposed extension would be extremely effective in improving local traffic circulation, allowing a greater capacity for the proposed SH 121T to serve more regional traffic needs. Also, future development of the proposed outer loop (Loop 9), which is planned to follow the current alignment of FM 1187 in the southern part of Fort Worth, is still under consideration pending further study.

No other major actions are currently proposed by other government agencies that would affect the proposed action.

Reasonable Alternatives Considered

Many alternatives were considered during the course of this study, including various freeway alignments, tollroad alternatives, rail, and other transportation modes and management strategies. Many of the alternatives, however, were eliminated prior to the recent development of the project as a proposed toll facility. At a regional level, NCTCOG developed alternatives for the southwest corridor of Fort Worth as part of a comprehensive metropolitan transportation plan for the Dallas-Fort Worth area. The study recommendations for the subject corridor, discussed in further detail in Chapter III of this document, include development of the proposed facility as a tollroad.

This document will provide a detailed account of the history of the project, including the development of various modal and alignment alternatives.

Substantial Environmental Impacts

The proposed Build alternative would offer improved access and a less congested alternative route to local businesses and commercial properties. Development in the area might increase more rapidly due to improved accessibility. A negative aesthetic impact would occur during construction of the proposed facility. In the long term, the paved arteries and overpasses would affect the current rural and scenic nature in the southern end of the project within the project corridor. Short term impacts to existing pedestrian and bicycle facilities would be limited to the construction phase of the project. Other short-term impacts such as soil erosion and sediment-laden runoff from construction areas would potentially temporarily impact rivers and streams along the project. However, both temporary and permanent erosion control structures would be employed to reduce or eliminate these potential impacts. Air and noise short-term pollution would also occur during the construction phase.

Acquisition of additional ROW for project construction would require the relocation of commercial, residential, and county property, as well as a place of worship and a motel. The relocation would take place along approximately 3 miles (mi) of the proposed roadway.

Issues of Public Deliberation

1. GOVERNMENT ENTITIES. The Fort Worth City Council endorsed the proposed SH 121T (Southwest Parkway) project with a 7-2 vote, on December 8, 1998. The proposal was received with much debate and citizen input, ending in the authorization of Resolution No. 2474 in support of the proposed SH 121T (Appendix A, Attachment 3). A Mayor and Council Communication (Ref. No. C-17178) was also signed on this date, authorizing the " … Southwest Parkway Interlocal Agreement Between the City of Fort Worth, TxDOT, and the North Texas Tollway Authority."

   The Fort Worth City Council opted to consider the appointment of an independent committee to re-evaluate the "downtown" section of the proposed facility, near IH 30 and Forest Park Boulevard. From December 1998 until December 2000 the City of Fort Worth initiated three separate review committees: the Citizen's Advisory Committee (CAC), the Project Review Team (PRT), and the Project Development Team (PDT). After the review and recommendations of the three independent review committees in December 2000 the Project Development Team presented its recommendations to the Fort Worth City Council. These recommendations were subsequently approved by the Fort Worth City Council and submitted to TxDOT for review. The recommended alternative, as well as an additional alternative derived from the recommendations, is included within this document.

2. PUBLIC. To date, public sentiment regarding SH 121T has been mostly positive and supportive of the project. Citizens opposed to the project are generally opposed to specific plan elements of the facility, but continue to support the overall concept. The creation of the CAC, authorized in January, 1999, by City Council Resolution No.

2482 (see Appendix A, Attachment 4), has provided a means for citizens to voice many of these concerns and work together with the North Texas Tollway Authority (NTTA) and TxDOT to incorporate desired aesthetic and urban design standards, and in general, provide citizen input on matters of public interest. In addition to the CAC the subsequent PDT developed alternatives during a six-month process between June of 2000 to December of 2000. This process included monthly workshops and public meetings to solicit comment from the public.

Major Unresolved Issues with Other Agencies

As of the date of this document several plan issues remain to be resolved by the City of Fort Worth. The plan of several of the interchanges and grade separations along the project corridor have yet to be finalized. However, these alternative interchange plans and grade separation configurations are included within the Build alternatives presented in Chapter III – Alternatives within this document.

Federal Actions Required for the Proposed Action

1. PERMIT APPROVALS. It is anticipated that construction of the project would require an individual Section 404 permit at its crossing over the Clear Fork of the Trinity River. It is also anticipated that a Section 404 Nationwide Permit (NWP) No. 14 would be required at several of the other minor tributary crossings. Because the affected streams and rivers are not classified as navigable, neither a United States Coast Guard (USCG) Section 9 permit nor a United States Army Corps of Engineers (USACE) Section 10 permit would be required. Coordination with the USACE concerning this project has been initiated, and would continue through the detailed design of the project. In addition, one or more Texas Natural Resources Commission (TNRCC) Section 401 permit would be required in association with any Section 404 permits. No other permit requirements have been identified.

2. LAND TRANSFERS. No land transfers with other government agencies would be required in order to construct the project.

3. OTHER. No other Federal actions required for the proposed action have been identified.

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I. PROJECT HISTORY

In 1962, a radial freeway through the southwest quadrant of Fort Worth was placed on the *Fort Worth Metropolitan Area Thoroughfare Plan*. The Texas Highway Commission, by Minute Order (MO) 53297 dated August 1, 1963, authorized the development of a comprehensive and continuing Urban Transportation Plan which indicated the need for the development of a freeway in the City of Fort Worth from IH 35W to the Tarrant-Johnson County Line. In 1964, this "Northside-Southwest Freeway" was included in the *1964-85 Dallas-Fort Worth Regional Transportation Study*.

The Texas Highway Commission, through MO 64014 dated July 9, 1970, directed that design and environmental studies be completed, followed by a public hearing, leading to the possible designation of a southwest radial freeway as a State Highway. In January 1972, representatives from the NCTCOG, Tarrant County, the City of Fort Worth, and TxDOT, in conjunction with members of a consultant team, completed the *Route Study Report for the Northside-Southwest Freeway*. The study resulted in the recommendation of a preferred route, shown as Exhibit I-1, for the proposed freeway.

A *Draft Environmental/Section 4(f) Statement Administrative Action for the Northside-Southwest Freeway* was prepared by the City of Fort Worth Planning Department in conjunction with TxDOT in March of 1972. The report was later approved by the FHWA for circulation and comments in July of 1972. TxDOT issued an Administrative Route Approval on July 17, 1972, for the purpose of holding a route public hearing.

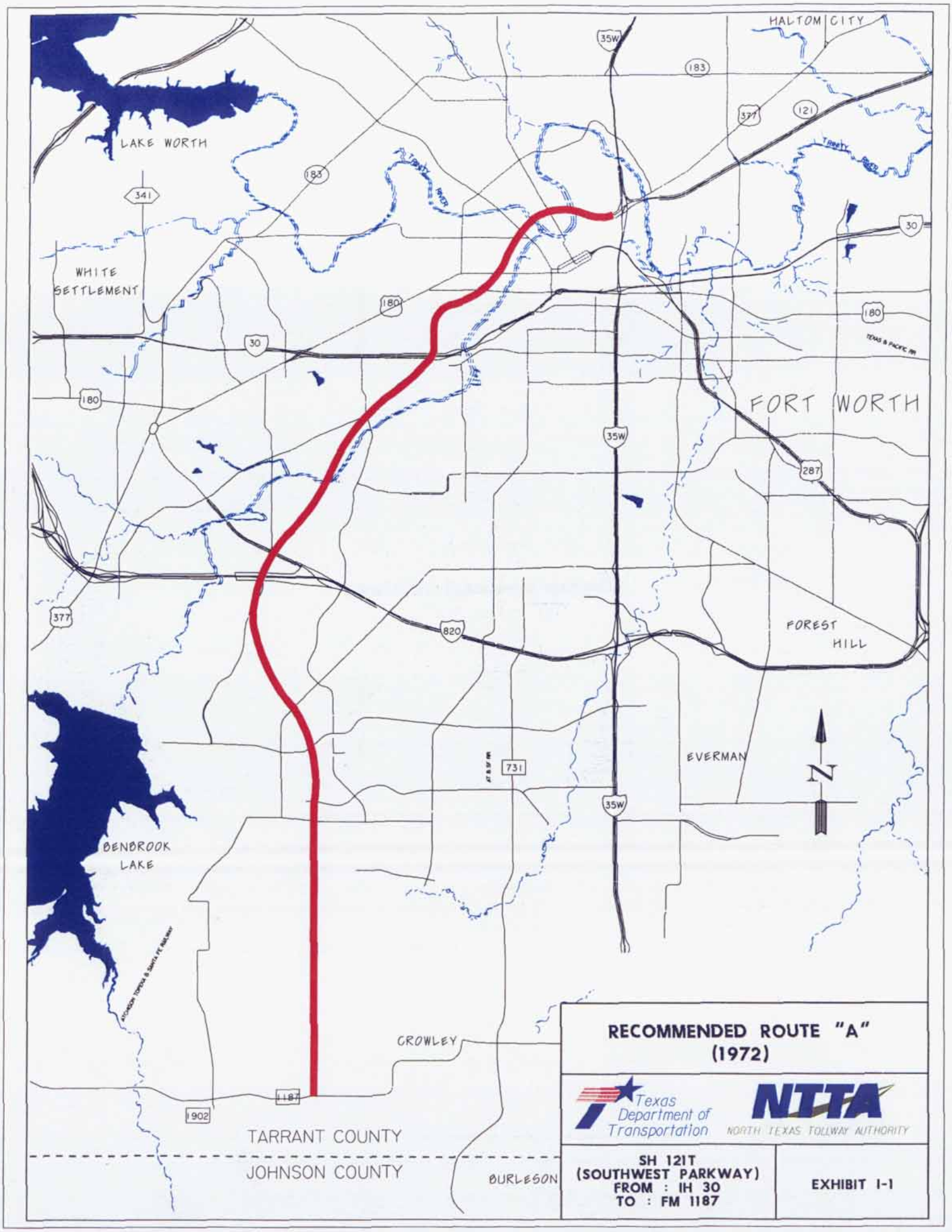
On May 2, 1973, a public hearing was conducted at the Round-Up Inn by TxDOT, the City of Fort Worth, Tarrant County and NCTCOG. The recommended route ran from the connection of IH 35W and SH 121 north alongside Montgomery Street, across University Drive, and Trinity Park and then south. At this meeting the attending residents, city planners, Garden Club officials, City Park and Recreation board members, TxDOT officials, and the Chamber of Commerce, enthusiastically endorsed the recommended route. This route was

then added to the Texas highway system by the Texas Highway Commission in October of 1973, giving priority to the segment from IH 35W to IH 20. In January 1974, SH 121 from IH 35W to IH 20 was included as part of the Federal Aid Highway System. On October 4, 1974, the recommended route was approved under MO 68084, and it was designated as State Highway 121.

After advanced planning and before detailed design and ROW studies were completed for the approved route, the national economy had begun to decline with the onset of the fuel shortage crisis. Subsequent inflation of construction costs resulted in the establishment of the 20-year Project Development Plan (PDP), created to allocate limited funding for roads and highways. Though part of the proposed SH 121 (from IH 35W to SH 199) was included in the ten year Advance Planning Schedule, most of the route was deferred pending a later revision of the funding plan. With this indefinite deferment of construction, efforts to preserve ROW along the project corridor were abandoned and several new buildings have since been built.

In the late 1970's and early 1980's, the concept of a "cultural district" that encompassed museums, the Will Rogers Complex, Casa Mañana, Farrington Field, the Botanic Garden, and Trinity and Forest Parks had begun to emerge in Fort Worth. What was once a widely supported alignment for the proposed SH 121 was now strongly opposed by many of its original proponents due to the "splitting" effect it would have on this newly created cultural district.

Opposition to the proposed alignment by the Tarrant County Historical Commission led to a new route location study conducted by the City of Fort Worth, which was completed in January 1984. This study, entitled *Southwest Fort Worth Subarea Study: Evaluation of Transportation Alternatives*, examined 18 functional and location alternatives for SH 121. The alternatives studied included the "existing plus committed improvements," a Transportation Systems Management (TSM) strategy, three parkway alternatives, an


HALTOM CITY
LAKE WORTH
WHITE SETTLEMENT
FORT WORTH
FOREST HILL
EVERMAN
BENBROOK LAKE
CROWLEY
TARRANT COUNTY
JOHNSON COUNTY
BURLESON
35W
183
377
121
341
30
180
287
820
731
1187
1902
N
RECOMMENDED ROUTE "A"
(1972)
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T
(SOUTHWEST PARKWAY)
FROM : IH 30
TO : FM 1187
EXHIBIT I-1

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alternative with a tollroad segment (from IH 20 to IH 30), eleven freeway alternatives, and one rail alternative. Based on a comparative analysis of the alternatives, with respect to engineering, traffic performance, cost and environmental impacts, the 11.7 mi. "Freeway - East Alignment" was recommended as the preferred route. The report also recommended that the segment between IH 30 and Sycamore School Road be constructed in the first phase while assuring that ROW between the IH 35W and SH 121 intersection and IH 30 would be protected for phase two construction. This route was then endorsed by the Fort Worth City Council.

In December 1984, the City of Fort Worth commissioned the development of schematic plans for a portion of the proposed alignment to resolve various design issues that had been identified. Studies concluded the route was feasible, but required a plan to relocate the Trinity River 150 to 200 ft into Trinity Park. This eastern route was embraced and endorsed by the Fort Worth City Council, the Tarrant County Commissioners Court, the Fort Worth Chamber of Commerce, the Cultural District Committee, the school district, the water district, the Streams and Valleys Committee, the Fort Worth Planning Commission, and the Fort Worth Garden Club. The USACE concurred with the design. This report was concluded in June 1985.

In response to the community's concerns, the Texas Highway Commission canceled its previous route approval and authorized preliminary engineering and environmental studies to establish a new route alignment. These studies were authorized by MO 83516 and MO 84030, and approved by the TxDOT Commission on August 29, 1985, and January 30, 1986, respectively. MO 83516 authorized preliminary engineering for SH 121 from IH 35W to FM 1187 and MO 84030 authorized a feasibility study for SH 121 from FM 1187 to SH 174 in Johnson County.

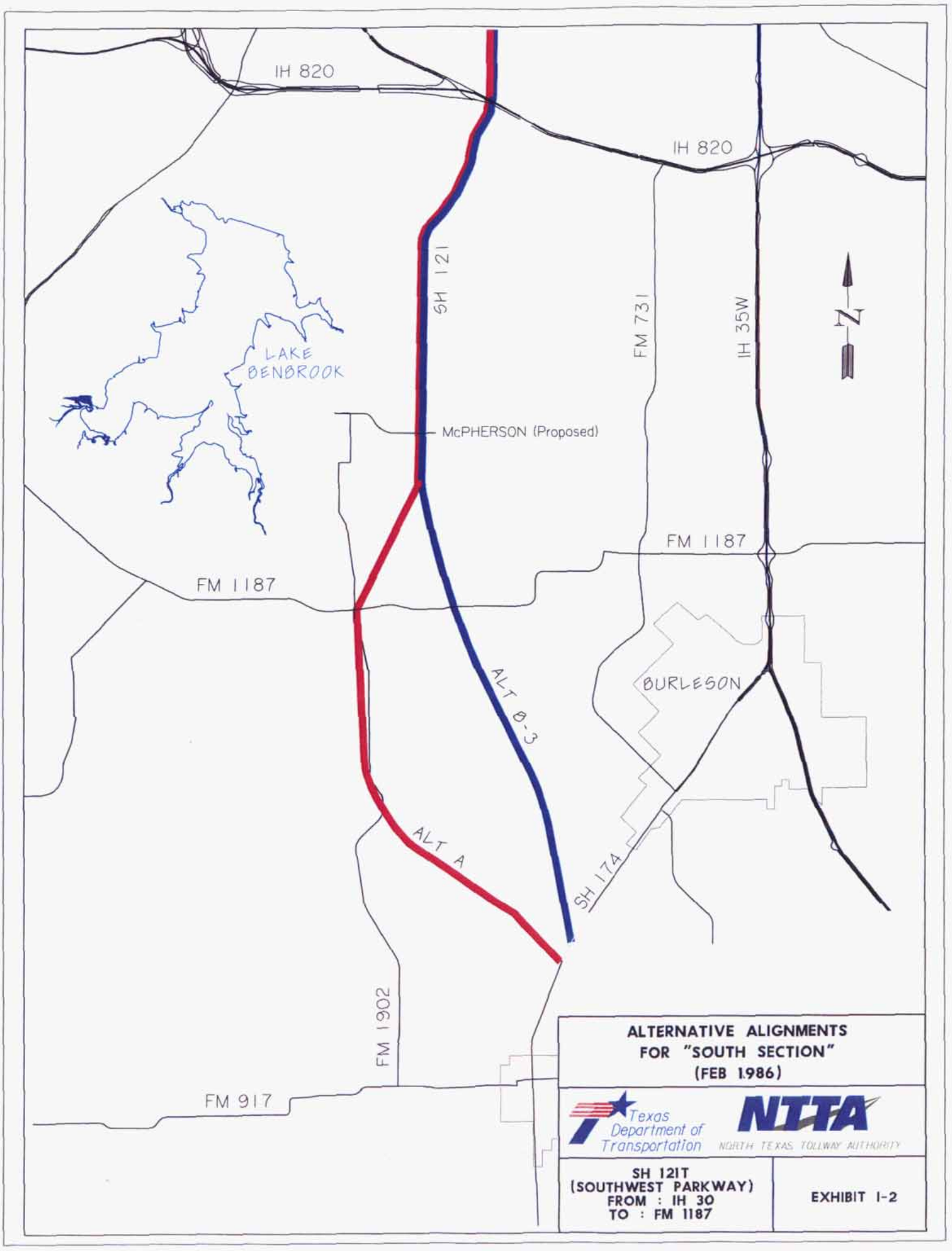
On February 4, 1986, the Regional Transportation Council adopted *Mobility 2000: The Regional Transportation Plan for North Central Texas*, prepared by the NCTCOG. The

Southwest Parkway was included as a *designated* freeway to FM 1187 and as a *proposed* freeway south of FM 1187. TxDOT included SH 121 from IH 35W north of downtown Fort Worth to SH 174 in their 10-year PDP. SH 121 was designated as a project requiring local commitment in order to improve cost effectiveness.

The City of Fort Worth and Tarrant County, having reached consensus on the freeway's route from downtown to McPherson Road, commissioned a location study for the proposed SH 121 between McPherson Road and FM 1187 in order to secure ROW donations. The location study analyzed two routes: A westerly alignment, Alternative A, that crossed FM 1187 along the existing FM 1902 alignment then used major portions of FM 1902 and an existing FM road before connecting to SH 174 (about 1mi. north of Joshua); and an eastern alignment (Alternative B-3) that followed a southeastern direction from McPherson Road and connected to SH 174 about 1.5 mi. north of Joshua. Exhibit I-2 depicts the alignments studied. In February 1986, this study recommended the western alternative as being more cost effective and more conducive to phased construction.

In March 1987, TxDOT engaged the services of a consulting firm to conduct environmental studies and recommend routes for the freeway. During project development, a decision was made to separate the proposed extension of SH 121 into two segments for public involvement and environmental study purposes. A logical point of division was determined to be IH 20, creating a northern section from the junction of IH 35W and SH 121 in the north to just south of Bellaire Street (north of the SH 183/IH 20 interchange), and a southern section from the SH 183/IH 20 interchange to SH 174 or US 67 in Johnson County.

In May 1987, with the intent of accelerating the construction process for the proposed SH 121, the Tarrant County Commissioners proposed the creation of a county tollroad authority named the "Tarrant County Tollroad Authority." The bill proposing the creation of the agency was rejected.


IH 820
IH 820
SH 121
FM 731
IH 35W
N
LAKE BENBROOK
McPHERSON (Proposed)
FM 1187
FM 1187
BURLESON
ALT B-3
ALT A
SH 174
FM 1902
FM 917
ALTERNATIVE ALIGNMENTS
FOR "SOUTH SECTION"
(FEB 1986)
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T
(SOUTHWEST PARKWAY)
FROM : IH 30
TO : FM 1187
EXHIBIT 1-2

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In June 1987, the Fort Worth City Council and the Tarrant County Commissioners Court requested that the Texas Turnpike Authority (TTA) conduct a feasibility study for converting all or portions of the proposed SH 121 into a toll facility. The Texas Highway Commission approved the feasibility study on July 29, 1987. Subsequently, in July 1987, TTA retained a consultant team to study the costs of the project, the location of the tollbooths, and the financial viability of the proposed toll facility. The proposed 9.2 mi long study included a six-lane tollroad from IH 35W north of the Central Business District to Montgomery Street, and a four-lane turnpike to IH 20 near Hulen Street. However, plans to build this segment of SH 121 as a tollroad were stopped in November 1987 when the results of these studies revealed that the proposed tollroad would pay for only 16% of its estimated $315 million dollar cost, rendering the project unfeasible as a tollroad.

As part of the environmental assessment process, TxDOT sponsored a public meeting to discuss suggested routes for the south section of the proposed SH 121. The meeting was held on November 12, 1987, at the First Baptist Church in Crowley. At this meeting, the local governments showed unanimous support for the extension of SH 121. However, the cities adjacent to SH 174 (Burleson, Joshua and Crowley) supported the extension of SH 121 terminating at various points along SH 174. There was no agreement on the location of the southern terminus by these cities. At the November 12, 1987 meeting, the City of Burleson presented two reports entitled: *Analysis of Proposed Extension of Southwest Freeway SH 121* and *Alternative Evaluation for Southern Extension of Southwest Freeway SH 121.* Both of these reports supported an alternative that connects the proposed SH 121 with SH 174 just north of Burleson's city limits between Joshua and Burleson, north of FM 917.

On May 17, 1988, a public meeting was held at the Fort Worth Tarrant County Convention Center to discuss the alternative alignments being studied for the north section. No opposition to the proposed facility was voiced at that time. Specific comments on the alternatives tended to support both the "Red" and "Green" alternatives (See Exhibit I-3). Following the meeting, however, numerous written comments were received by TxDOT,

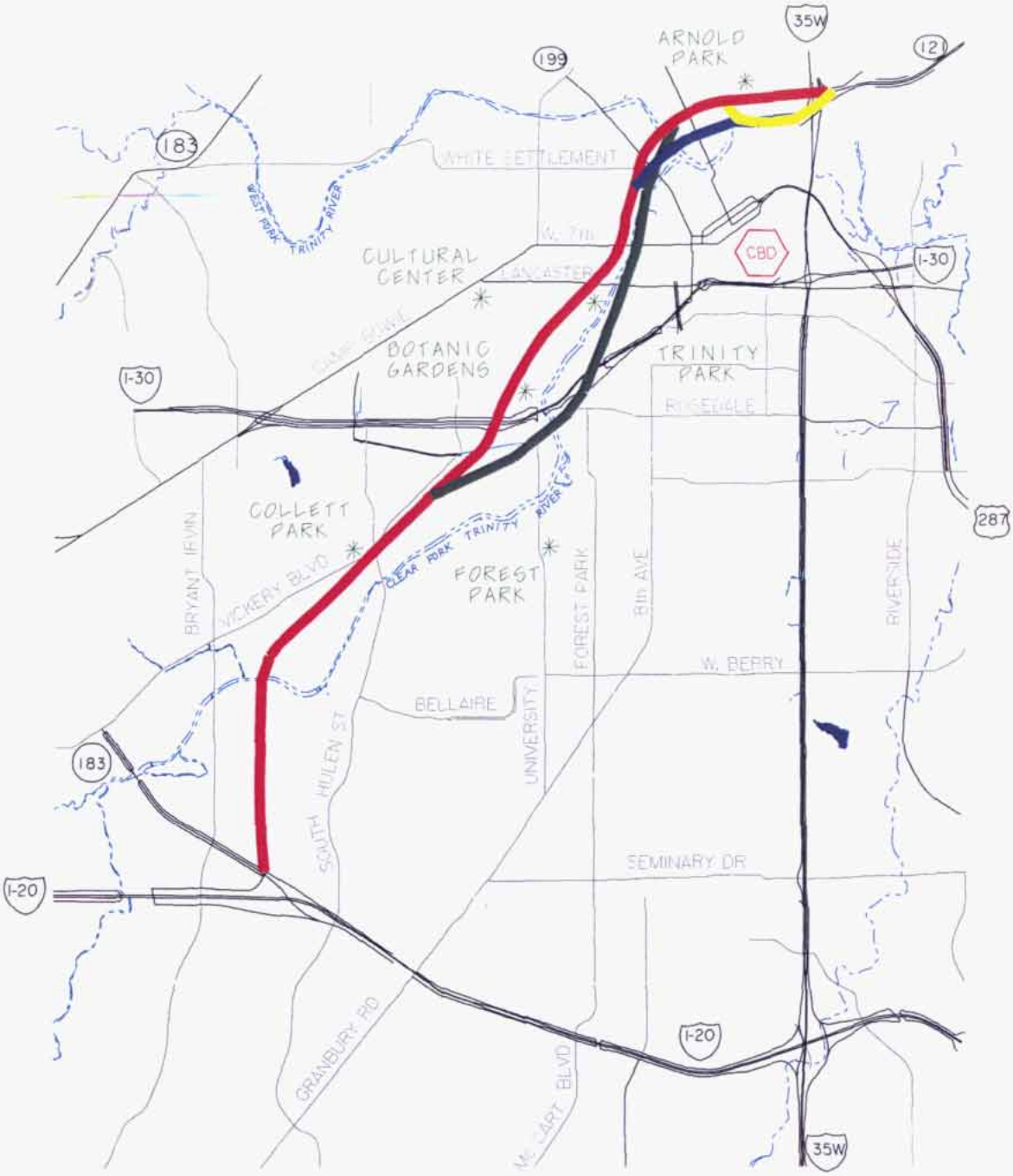
many stating that they had not been adequately informed about the meeting. The majority of the comments received heavily supported the “Green” alternative due to the impacts of the “Red” alternative on the Cultural District.

Environmental Assessment (EA) documents were presented to TxDOT in July 1988 and September 1988 for the south and north sections, respectively. A Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for the south section was published in the Federal Register on August 4, 1988.

On October 12, 1989, a Draft Environmental Impact Statement (DEIS) for the south section was submitted and approved by the FHWA. The proposed action for this section would result in the construction of a four- to six-lane controlled access highway on new location, with frontage roads on each side of the highway, from just north of Bellaire Drive (including the IH 20 interchange) to US 67 in Johnson County.

The EA for the north section was approved by the FHWA for further processing on March 28, 1990. An NOI to prepare an EIS for the north section was published in the Federal Register on April 5, 1990. The proposed action would result in the construction of an eight-lane controlled access highway on new location from IH 20 to IH 35W with frontage roads only in those areas where they would be essential to maintain local street circulation and continuity.

A second public meeting for the north section was held on October 25, 1990, at the Baptist Community Center to discuss the alternative alignments being studied. Most comments supported the "North" alternative, which would extend SH 121 from IH 35W north across Cold Springs Road near Dumpground Road, then north between Poindexter and Pavillion Streets and across North Calhoun and North Main Streets just north of North 6th Street. The alternative would then cross the Trinity River and Henderson Street. The area residents expressed significant opposition to the "Greer Street" alternative (See Exhibit I-4).



RED ALTERNATE

GREEN ALTERNATE

BLUE ALTERNATE

YELLOW ALTERNATE

ALTERNATIVE ALIGNMENTS FOR "NORTH SECTION" (MAY 1988)

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T (SOUTHWEST PARKWAY) FROM : IH 30 TO : FM 1187

EXHIBIT I-3

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1973 APPROVED ROUTE

NORTH ALTERNATE

GREER ST. ALTERNATE

BLACK ALTERNATE

ARNOLD PARK ALTERNATE

SOUTH ALTERNATE

N

REVISED ALTERNATIVE ALIGNMENTS FOR "NORTH SECTION" (OCT 1990)

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T (SOUTHWEST PARKWAY) FROM : IH 30 TO : FM 1187

EXHIBIT I-4

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On January 21, 1993, a public hearing was held for the south section at the First Baptist Church in Crowley. The project was received with minimal opposition.

In July 1993, a DEIS for the north section was also submitted for FHWA review, however, final approval has not been given to date and a public hearing has not been held. TxDOT included the north section in Phase I of the 1993 Transitional PDP to be financed out of Category 3A - National Highway Mobility System when funds become available. This project was included in the NCTCOG 1990 TIP for the Dallas-Fort Worth Metropolitan Area.

The availability of funds for transportation projects was significantly restructured under the Intermodal Surface Transportation Efficiency Act (ISTEA), passed into legislation in December 1991, causing a major shift in the allocation of funding. Faced with reduced opportunities for funding, and a hefty price tag on the proposed freeway facility from IH 35W to US 67 (estimated at over $750 million), a SH 121 Task Force was established to keep the project moving forward. In 1993, a delegation from the City of Fort Worth, Tarrant and Johnson Counties, and the Fort Worth Chamber of Commerce appeared before the Texas Transportation Commission. The delegation proposed several local initiatives, including ROW donations and participation in frontage road construction, to reduce project costs. With a favorable response from the Commission, the project was authorized for further study.

The 1991 ISTEA legislation allowed for tollroad bond funds to be augmented with Federal transportation funds to build tollroads under certain conditions. In light of this new legislation, the concept of building all or part of the proposed SH 121 as a tollroad was revived.

In 1994, the SH 121 Task Force retained a consulting firm to study alternative designs and proposals for the project. The primary goals of this study were to: i) reduce project costs; ii) minimize the number of interchanges; iii) minimize frontage roads; and iv) explore alternative financing options for the facility. Due in large part to the fact that the previously proposed

freeway project would never obtain full funding due to financial constraints, the study resulted in a finding that a toll facility was the only remaining viable option. A detailed feasibility study for the development of SH 121 as a tollroad was commissioned by the Fort Worth City Council in October 1994. To date, the proposal has gained both political and community consensus from all affected local entities.

The feasibility study segmented the route and identified four priority levels for the corridor: *i)* from SH 199 to Overton Ridge Boulevard; *ii)* from Overton Ridge Boulevard to FM 1187; *iii)* from IH 35W at SH 183 to SH 199; and *iv)* from FM 1187 to US 67 in Cleburne. The study also proposed reducing construction costs by minimizing frontage roads and grade-separated intersections while relocating portions of the facility in Johnson County and in the Central Business District (CBD) of Fort Worth.

A detailed tollroad traffic and revenue study was completed in December 1997, for the NTTA (created in 1997). This report investigated the feasibility of constructing a tollroad that would extend from an intersection of IH 30 southwest of the Fort Worth CBD to Alta Mesa Boulevard (8.5 mi). A shorter alternative that would extend from IH 30 to Overton Ridge Boulevard was also investigated. This study was developed in sufficient detail to be used in support of bond financing.

Backed by a positive recommendation by the study, preliminary schematic and environmental work continued on the proposed toll facility, Southwest Parkway (renamed SH 121T). A NOI for the revised project limits (IH 30 to FM 1187), was filed in both the Texas and Federal Registers on May 20, 1998, and May 14, 1998, respectively (see Appendix C). On June 4, 1998, a public meeting was held jointly by the NTTA and TxDOT to discuss the alignment and preliminary environmental issues with citizens. A majority of the comments received were in support of the project. The meeting was adjourned with an assurance from TxDOT and the NTTA that there would be further opportunities for public input throughout the development of the project.

Following the public meetings of 1998, development of the preliminary schematics and environmental studies continued. As the preliminary schematics were developed they were provided to various local agencies for review. During the inter-agency review, City of Fort Worth public officials questioned the plan of the SH 121T/IH 30 interchange. Certain local officials felt the plan was too intrusive to the nearby residential areas, and requested the overall size of the interchange be reduced. As proposed, the SH 121T/IH 30 interchange provided several directional connections between SH 121T, IH 30 and Forest Park Boulevard. The Forest Park Boulevard direct connections were included to accommodate traffic bound to and from the CBD. Earlier traffic analyses indicated IH 30 would be unable to carry those volumes destined for the CBD from SH 121T, and as such Forest Park Boulevard was chosen as an additional route. Although the Forest Park connections appeared to be justified, public officials requested their elimination and proposed the re-evaluation of the interchange in an effort to reduce its size.

In December 1998, at the request of the City of Fort Worth, a CAC was formed to ensure public involvement was provided prior to the Cities' commitment to the final selection of a preferred alternative. The first of a series of meetings was held on March 17, 1999. In all, a total of seven committee meetings were held, culminating in the presentation of recommendations to the City Council in October 1999. Based on these recommendations, the TxDOT/NTTA design team developed and presented a new interchange plan known then as the "Modified Design" to be known henceforth in this document as Alternative B. This plan removed the direct connections between IH 30 and Forest Park Boulevard and replaced the access to Forest Park Boulevard by providing conventional ramps to frontage roads. However, in order to provide access between the CBD and SH 121T, the direct connections between SH 121T and Forest Park Boulevard were retained.

By February 2000, the DEIS was completed and submitted to TxDOT and the FHWA for concurrent review. As the review process began TxDOT/NTTA design team and local officials continued to evaluate the SH 121T/IH 30 interchange.

Unsatisfied with the recommendations of the CAC, the City of Fort Worth formed a PRT to further investigate the SH 121T/IH 30 interchange. The PRT was comprised of engineers and architects specializing in various fields of highway design. The PRT was requested to review the proposed plan developed by TxDOT and NTTA as well as to suggest alternatives or improvements. In April of 2000, the PRT evaluated the proposed alignment of SH 121T and its plan relationships with IH 30, University Drive, and Forest Park Boulevard. By the end of April 2000 the PRT presented their observations and recommendations to the City of Fort Worth resulting in the City of Fort Worth's decision to pursue further detailed study of the PRT's recommendations. In May of 2000 the City of Fort Worth formed a PDT. The PDT was comprised of local community leaders and was responsible for the oversight of the detailed study as well as selecting an independent consultant team to perform the study. This study would re-examine the SH 121T/IH 30 interchange from the City of Fort Worth's perspective, and develop additional alternatives in cooperation with the public.

Over the course of the next six months the City's consultant team evaluated the previous alternatives, developed additional alternatives, and presented their findings before the PDT and the public. Workshops and public meetings were held once a month between August and October 2000 to solicit comment and direction from the PDT and the public.

As the study continued, the scope of the re-evaluation expanded to include the remainder of the project corridor to McPherson Road. In December 2000, the PDT made its recommendations to the Fort Worth City Council. These recommendations included the "A1R1" SH 121T/IH 30 interchange alternative, to be referred to henceforth as Alternative A, with modifications to the typical section of the facility, as well as alternative interchange plan at several of the various grade separations occurring along the corridor. The City Council approved the recommendations and presented their findings to the TxDOT/NTTA design team at the end of December 2000.

Upon review of the PDT recommendations, the TxDOT/NTTA design team determined certain integral plan elements of Alternative A violated safety and design criteria. In an effort to address the PDT's recommendations, the TxDOT/NTTA design team developed an additional alternative comprised of the desirable plan elements from the previously developed alternatives. This "Combination Alternative", to be referred to henceforth as Alternative C, was developed during the spring of 2001.

On June 4th and June 7th, 2001, public meetings were jointly conducted by the NTTA and TxDOT to discuss the current alternatives being studied. The location of the June 4 meeting was Will Rogers Memorial Center-Amon G. Carter Exhibits Hall and that of the June 7 meeting was the Trinity Valley School. Three alternatives were presented to the public and both written and verbal comments were solicited. The alternatives differ in specific design aspects (i.e. interchange configuration), however they share the same horizontal alignment (See Exhibit I-5). The three alternatives presented included Alternative A (the PDT's recommended alternative), Alternative B (the CAC's "Modified" Alternative) and Alternative C (the "Combination" Alternative). The project was met with minimal opposition. Public comment focused on the various plan alternatives throughout the project corridor.

Since the June public meetings the alternatives have been further refined to incorporate and address public comment. The alignment for Alternative C has been relocated south of McPherson to offer the City of Fort Worth flexibility with its zoning plan. In addition, the DEIS has been updated to include a discussion and environmental investigation of Alternatives A, B and C. Overall, the project has continued to receive local support.

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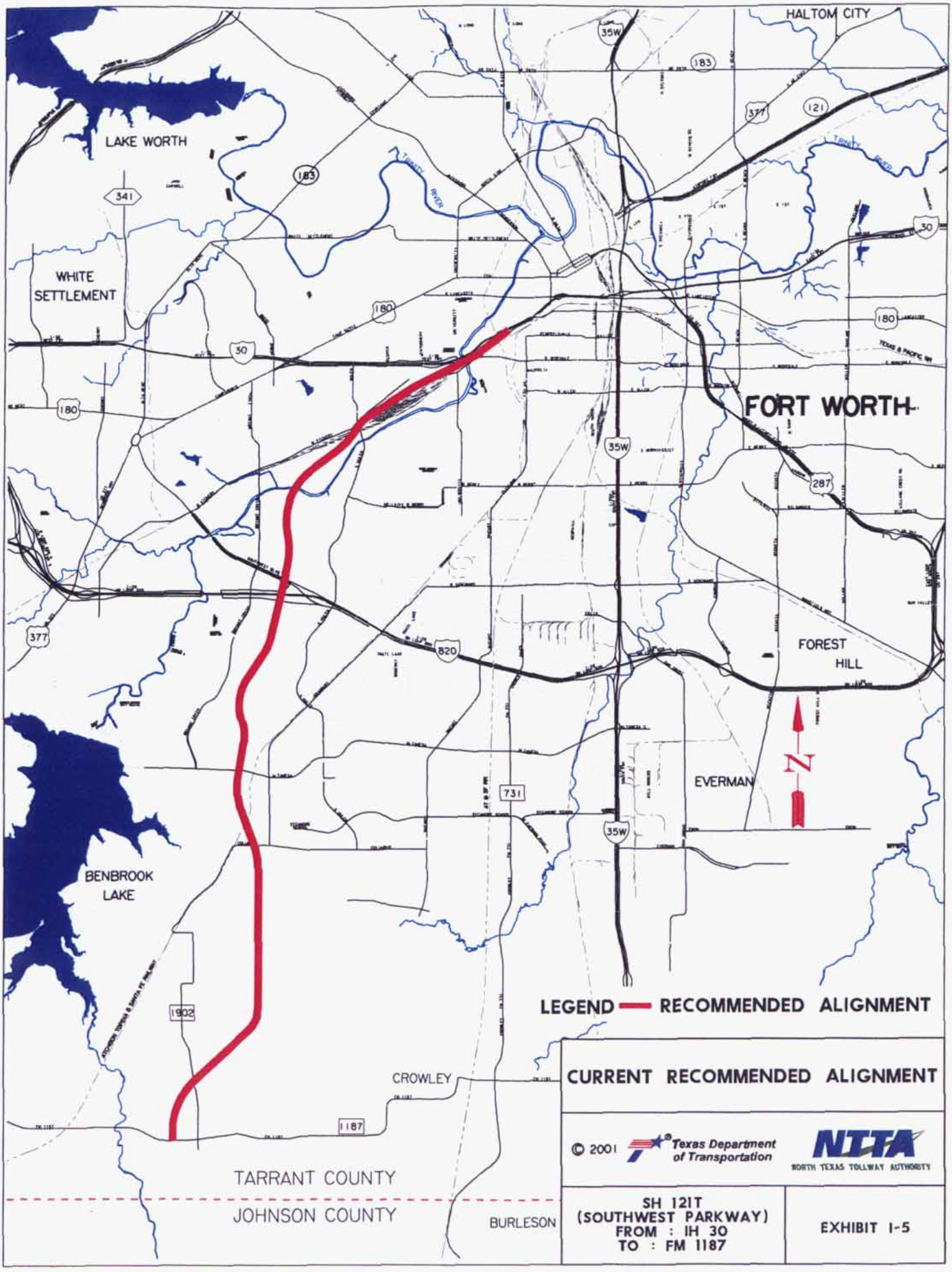
HALTOM CITY
LAKE WORTH
WHITE SETTLEMENT
FORT WORTH
FOREST HILL
EVERMAN
BENBROOK LAKE
CROWLEY
BURLESON
TARRANT COUNTY
JOHNSON COUNTY
TRINITY RIVER
35W
183
377
121
30
180
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287
820
731
1902
1187
N
LEGEND RECOMMENDED ALIGNMENT
CURRENT RECOMMENDED ALIGNMENT
© 2001 Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T
(SOUTHWEST PARKWAY)
FROM : IH 30
TO : FM 1187
EXHIBIT 1-5

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II. PURPOSE AND NEED FOR THE PROJECT

Continued growth and urbanization in the Dallas-Fort Worth region, particularly in Tarrant County, has resulted in the need for more efficient transportation systems to reduce existing congestion and accommodate future traffic demand. According to demographic data from the NCTCOG, the Dallas-Fort Worth Metropolitan Area (Metroplex) is one of the fastest growing areas in the United States, and it is expected that this trend will continue through the year 2025. According to the NCTCOG Research and Information Services Department, the Metroplex population will grow approximately 63% by the year 2025. The region is predicted to add 1.6 million new jobs and 2.8 million new people by 2025. Much of this growth can be attributed to the region being a national leader in the creation of new jobs, corporate relocations, and growth in the technology-based industry. In addition to supporting population and employment growth in the region, the purpose and need for the SH 121T project are both outlined and discussed further in subsequent sections of this chapter.

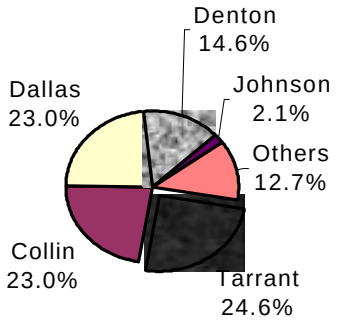
According to the NCTCOG Research and Information Services, the year 2000 total population for the Metroplex is 5,119,950. The region added a record breaking 160,750 new residents in 1999 for its fourth consecutive annual increase of over 100,000 persons. The remarkable growth seen in the last half of the decade has forced the average annual growth to over 100,000 new residents. This decade has brought over one million new people to the region, with 70 percent of that growth occurring over the last five years.

The four NCTCOG core counties, Collin, Dallas, Denton and Tarrant, captured 85 percent of all the regional growth, or 847,100 persons. Tarrant County saw the greatest population increase in the 1990s, adding a total of 240,650 persons. With 63 percent of its growth occurring in the last five years of the decade, Collin County almost doubled its 1990 population, growing by 232,750 persons. Dallas County added 217,900 and Denton County added 155,800 during this 10-year period.

As the Metroplex continues to attract new industry and businesses, the associated increases in population and employment begin to inflict a measurable strain on the existing transportation systems. The latest NCTCOG 2025 demographic forecast estimates employment growth in Tarrant County, between the years 1995 and 2025, at 74 percent. During the same time period, a 63 percent increase in the number of households and a 60 percent population increase is projected.

The NCTCOG 2000 Major Employers List identifies employment establishments in the 16-county North Central Texas region that have a minimum of 400 full-time and part-time workers. The North Central Texas region contains 413 major employer sites of which 71 are located in the City of Fort Worth. Most of the major employers are concentrated in the City's CBD and along Interstate 35W north and south of downtown. Major employment centers that would be served by the proposed facility include the Fort Worth CBD, the West Fort Worth Hospital District and the Southwest Fort Worth market area. Recent 2025 projections indicate a rise in employment will take place in the SH 121T corridor project area—identified as corresponding NCTCOG 2000 Demographic Forecast Districts 225-227, 229, 231, 233 and 241. Employment for the Districts indicated is predicted to grow by 51.60% between 1995 and 2025 (NCTCOG 2000 Demographic Forecast, Research and Information Services). Given the availability of undeveloped land in much of southwest Tarrant County, it is reasonable and likely to expect similar rates of growth in the number of households, and therefore vehicles, within the PSC. Thus, the purpose and need of the project is to serve as a necessary transportation link for newly developed and developing areas in southwest Tarrant County.

Dallas-Fort Worth Metropolitan Area
1996-97 Population Growth



By serving as a direct route to several major new hospitals in southwest Fort Worth, the proposed facility would greatly improve emergency access and health care delivery services. The facility would also increase access to major recreational areas such as Lake Benbrook, Lake Pat Cleburne and Lake Whitney, located south and southwest of Fort Worth.

Rapid growth in the Dallas-Fort Worth area is surpassing the transportation system's ability to accommodate the resulting congestion. Congestion is no longer limited to the traditional peak hour periods or to the CBD. Factors such as population and employment growth, automobile ownership, single-occupant vehicle travel and increased development, have all contributed to the increase in vehicle miles traveled across the region. In 1995, transportation demand for the region was 102.5 million vehicle miles of travel. In the year 2025, this figure is expected to increase to 179.5 million vehicle miles traveled, a 75% increase. With the rising trend of development within the southwestern region of Fort Worth, the average distance traveled per day, increases from approximately 70 mi for a household located in the central city, to 110 mi for a household residing in the outlying rural areas.

In addition to an accelerated pace of growth in and around the Dallas-Fort Worth area, the limited availability of funding sources for surface transportation improvements is yet another impedance in the effort to solve today's congestion problems. Consequently, it is also the purpose of the project, specifically the tollroad alternative, to expedite funding for and construction of this key element of the regional transportation plan. There is currently $25 million earmarked for this project under the "High Priority Projects Program" of the Transportation Equity Act for the 21st Century.

Regional Transportation Plan

The regional transportation plan is Federally mandated and serves as a guide for Federal, State and local transportation expenditures. Beginning in the early 1970s, Metropolitan Planning Organizations (MPOs) have been responsible for developing and maintaining a metropolitan transportation plan. Passage of the Intermodal Surface Transportation

Efficiency Act of 1991 (ISTEA) and its successor, the Transportation Equity Act for the 21st Century (TEA-21), enacted June 9, 1998, greatly advanced the role of MPOs in the overall transportation planning process by placing more emphasis on the need for a centralized mechanism to guide and enhance transportation investments.

NCTCOG, together with the Regional Transportation Council (RTC) serves as the MPO for the Dallas-Fort Worth region. Since the early 1970s, there have been five transportation plans published by NCTCOG. These are, the *Total Transportation Plan for the North Central Texas Region for 1990*, completed in 1974; Mobility 2000 – The Regional Transportation Plan for North Central Texas, completed in 1986; Mobility 2010 - The Regional Transportation Plan for North Central Texas completed in 1990; Mobility 2010 Plan Update, completed in 1993; Mobility 2020 - The Metropolitan Transportation Plan, completed and published in September 1997; and Mobility 2025 Plan Update - The Metropolitan Transportation Plan, completed and published in January of 2000.

Following in the guidelines of the previous plan, Mobility 2020, the current plan, *Mobility 2025 Plan Update*, was developed following completion of the transit and highway model validation for the base year 1995. The plan is based on regional transportation needs identified through the process of forecasting future travel demand, evaluating system alternatives and selecting those options which best meet the mobility needs of the region. A series of travel forecasts were performed including commuter and light rail alternatives, High Occupancy Vehicle (HOV) and express lanes, freeways, tollroads and arterial street improvements. In addition, a system of bicycle and pedestrian facilities was developed. Throughout the planning process, close coordination among local governments, TxDOT, NTTA and transit authorities was maintained.

An evaluation of the 2025 baseline forecast was accomplished to identify future congested locations and quantify transportation system needs. In order to assess regional system performance, and to further assess project specific system performance following

implementation of congestion reduction strategies, a variety of quantifiable performance measures were included in the study. Similarly, Exhibits II-1 and II-2 illustrate the outcome of the No-build scenario in terms of the percentage of roadways congested during the peak hour. The level of service (LOS) is a letter designation that describes a range of operating conditions, from free flow operation at LOS A to forced or breakdown conditions at LOS F. With *Mobility 2025 Plan Update* recommendations (which include SH 121T) in place, peak hour congestion levels will improve as illustrated in Exhibit II-3.

Specific legislative requirements also had to be addressed in the metropolitan transportation plan. The CAAA of 1990 established the requirement that all areas designated as non-attainment for exceeding the National Ambient Air Quality Standards (NAAQS) must make conformity determinations on metropolitan transportation plans and TIPs before they are approved. Collin, Dallas, Denton and Tarrant Counties were all designated non-attainment areas for ground level ozone (O_3). As such, *Mobility 2025 Plan Update* is required to be in conformity with the SIP for air quality. Furthermore, in accordance with Federal regulations, *Mobility 2025 Plan Update* is constrained to available financial resources. Currently, the proposed action is a part of the NCTCOG Regional Transportation Plan (*Mobility 2025 Plan Update*) and is included in the Unified Planning Work Program for North Central Texas. As such, the proposed action would provide a major link in the future regional freeway network.

Mobility 2025 Plan Update is the defining vision for transportation systems and services in the Dallas-Fort Worth Metrolex. In addition to the freeway/tollway and rail proposals, *Mobility 2025 Plan Update* also recommends other improvements in the SH 121T study area, including transportation system management (TSM) and travel demand management (TDM) strategies, and non-motor vehicle alternatives.

In order to aid financing the proposed action, a freeway system evaluation of *Mobility 2025 Plan Update* (see Exhibit II-4) recommended the construction of SH 121T as a “new tollway”

from IH 35W to Alta Mesa Boulevard. The recommendation was based on a tollroad study, submitted to the Texas Transportation Commission in July 1995, in which an alternative financing mechanism was sought for the $750 million proposed freeway facility. The findings of this study, and other alternative analyses, are discussed in subsequent sections of this document.

Transportation Demand (Congestion Management System)

The Congestion Management System (CMS) is a systematic process for managing traffic congestion. The CMS provides information on: transportation system performance; alternative strategies for alleviating congestion; and, enhancing the mobility of persons and goods to levels that meet State and local needs. SH 121T was developed from the Transportation Department of NCTCOG operational CMS, which meets all requirements of CFR 500.109. The CMS was adopted by the Transportation Department of the NCTCOG in 1999.

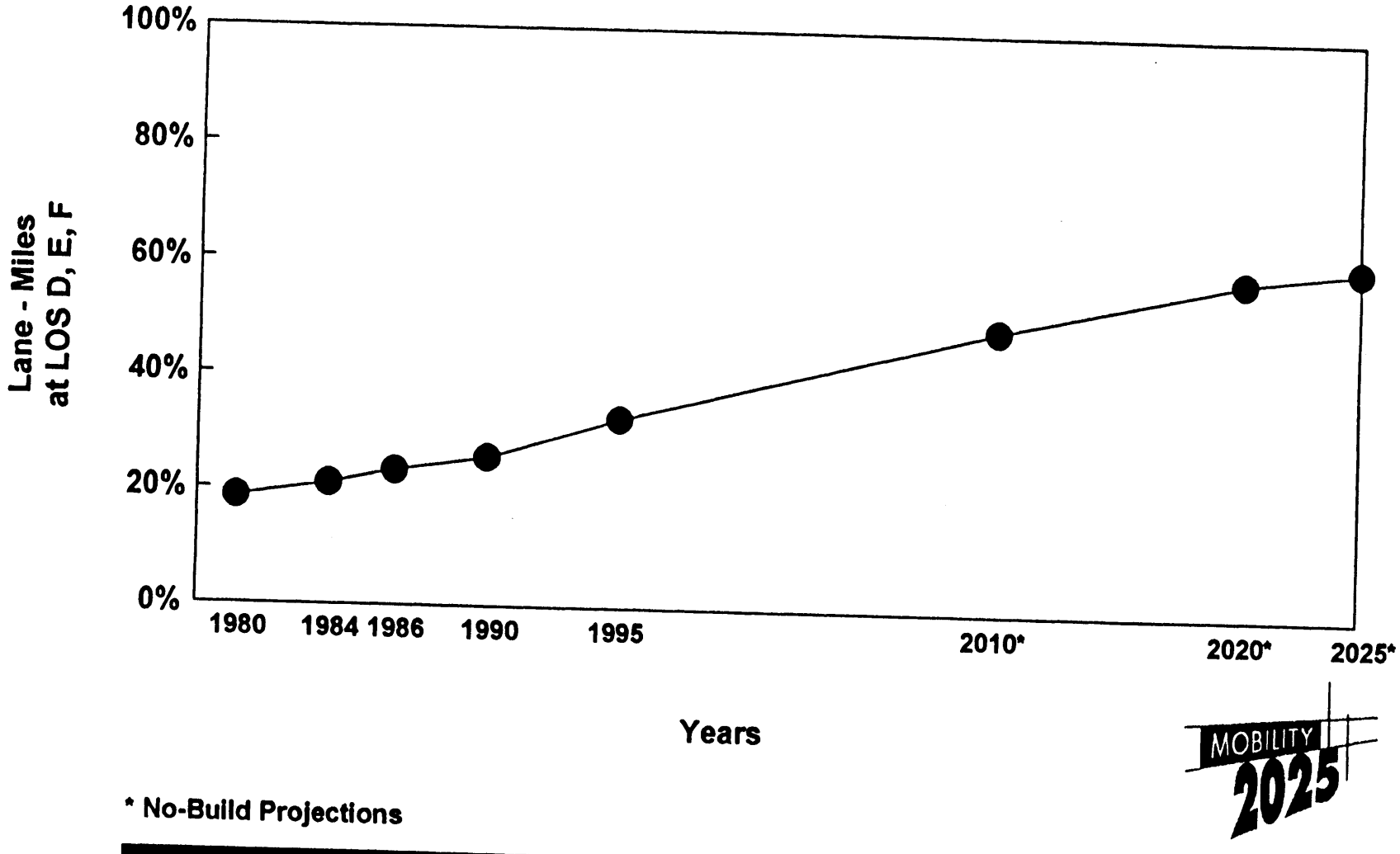
Operational improvements and travel demand reduction strategies are commitments made by the region at two levels: program level and project level implementation. Program level commitments are inventoried in the regional CMS, which was adopted by NCTCOG. They are included in the financially constrained Metropolitan Transportation Plan (MTP). Future resources are reserved for their implementation.

The CMS element of the plan carries an inventory of all project commitments (including those resulting from major investment studies) detailing type of strategy, implementing responsibilities, schedules and expected costs. At the project programming stage, travel demand reduction strategies and commitments would be added to the regional Transportation Improvement Plan (TIP) or included in the construction plans. The regional TIP provides for

EXHIBIT II-1

MOBILITY 2025

REGIONAL PERFORMANCE MEASURES



* No-Build Projections

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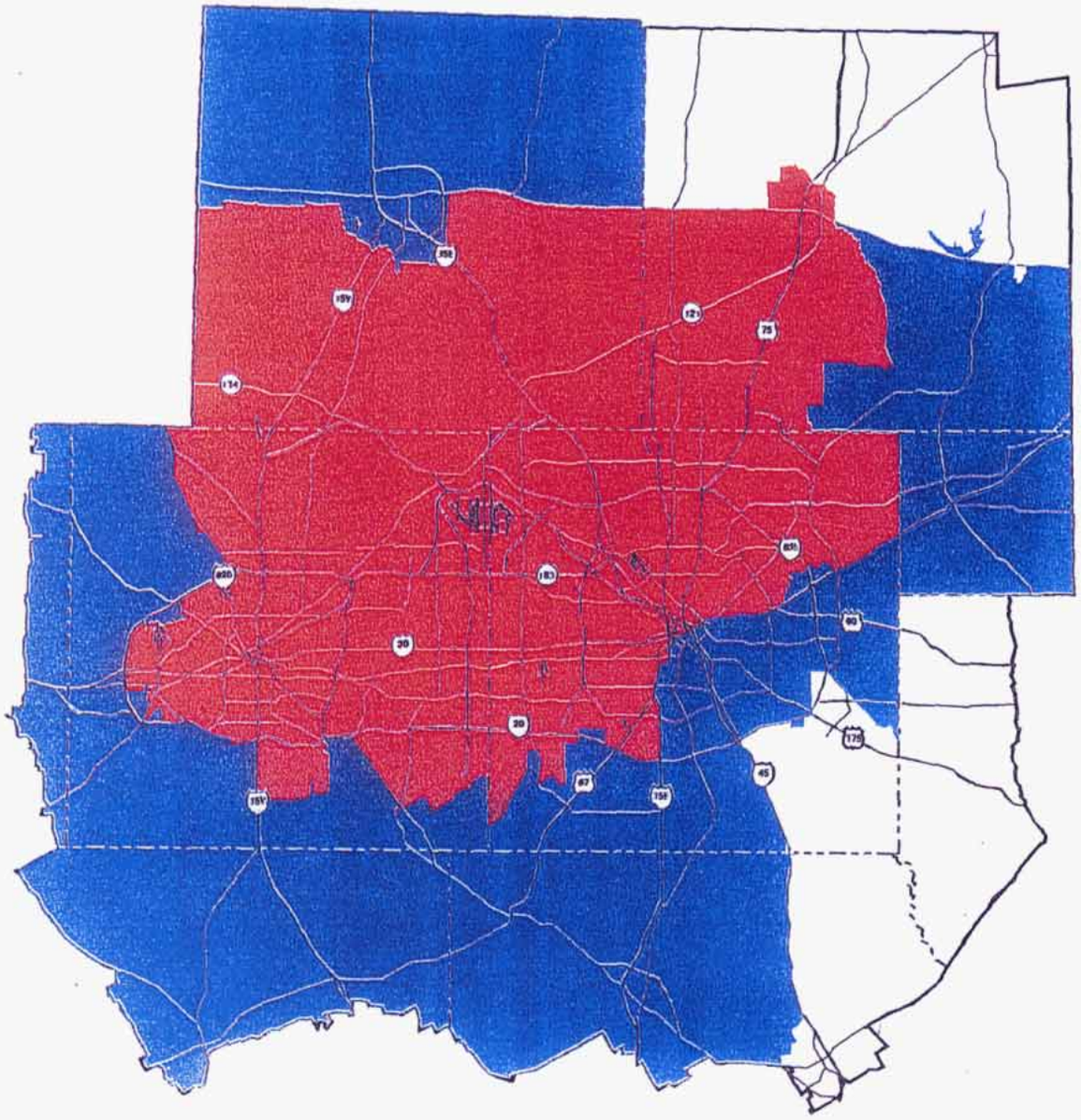
EXHIBIT II-2



2025 Congestion Levels
No Build Scenario

Legend

Areas of Moderate Peak-Period Congestion

Areas of Severe Peak-Period Congestion

Annual Cost of
Congestion = $ 13.9 Billion

MOBILITY 2025

North Central Texas
Council of Governments
Transportation

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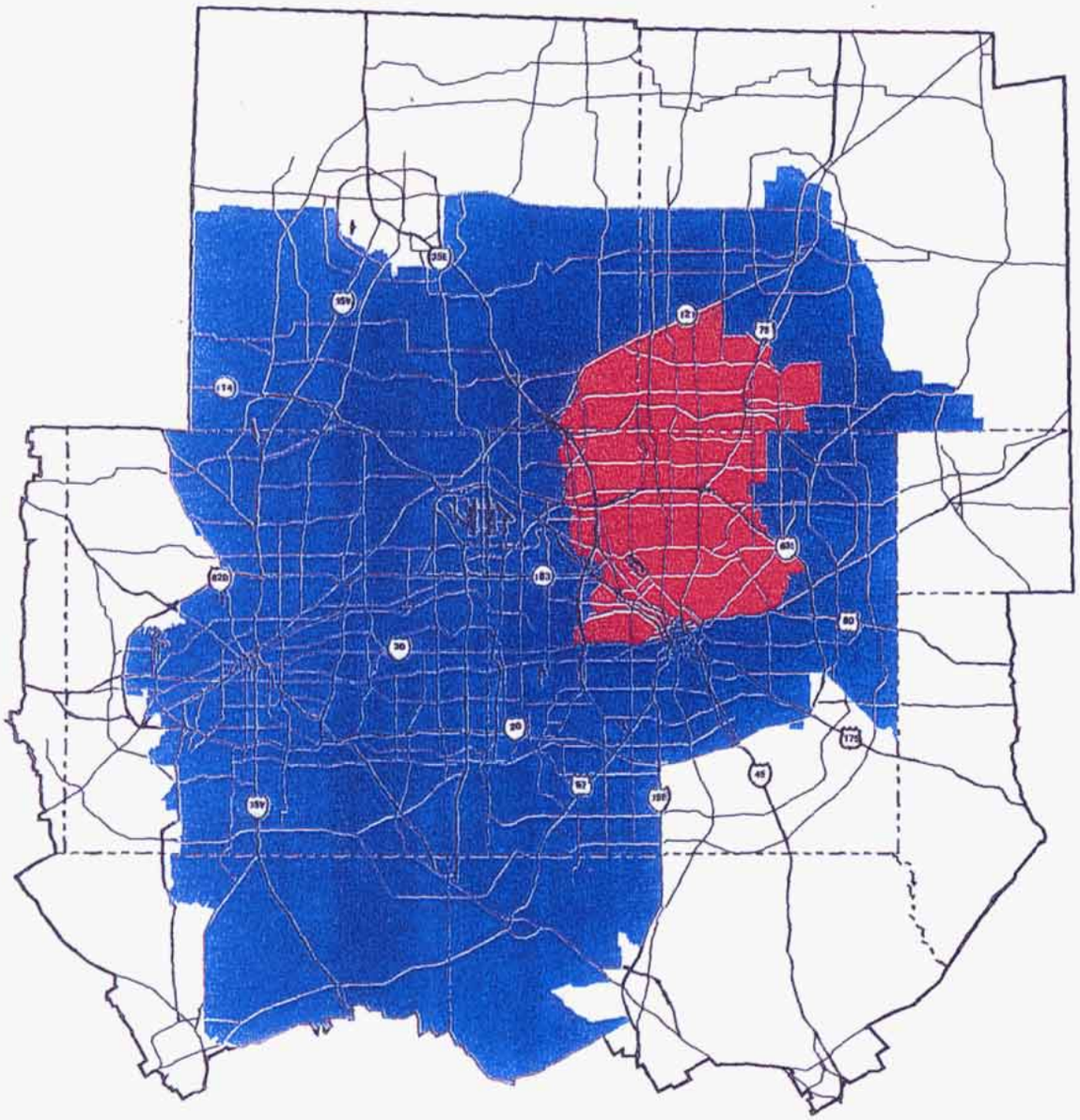
EXHIBIT II-3



2025 Congestion Levels with Mobility 2025 Recommendations

Legend

- Areas of Moderate Peak-Period Congestion
- Areas of Severe Peak-Period Congestion

Annual Cost of Congestion = $ 7.4 Billion

MOBILITY 2025

North Central Texas Council of Governments Transportation

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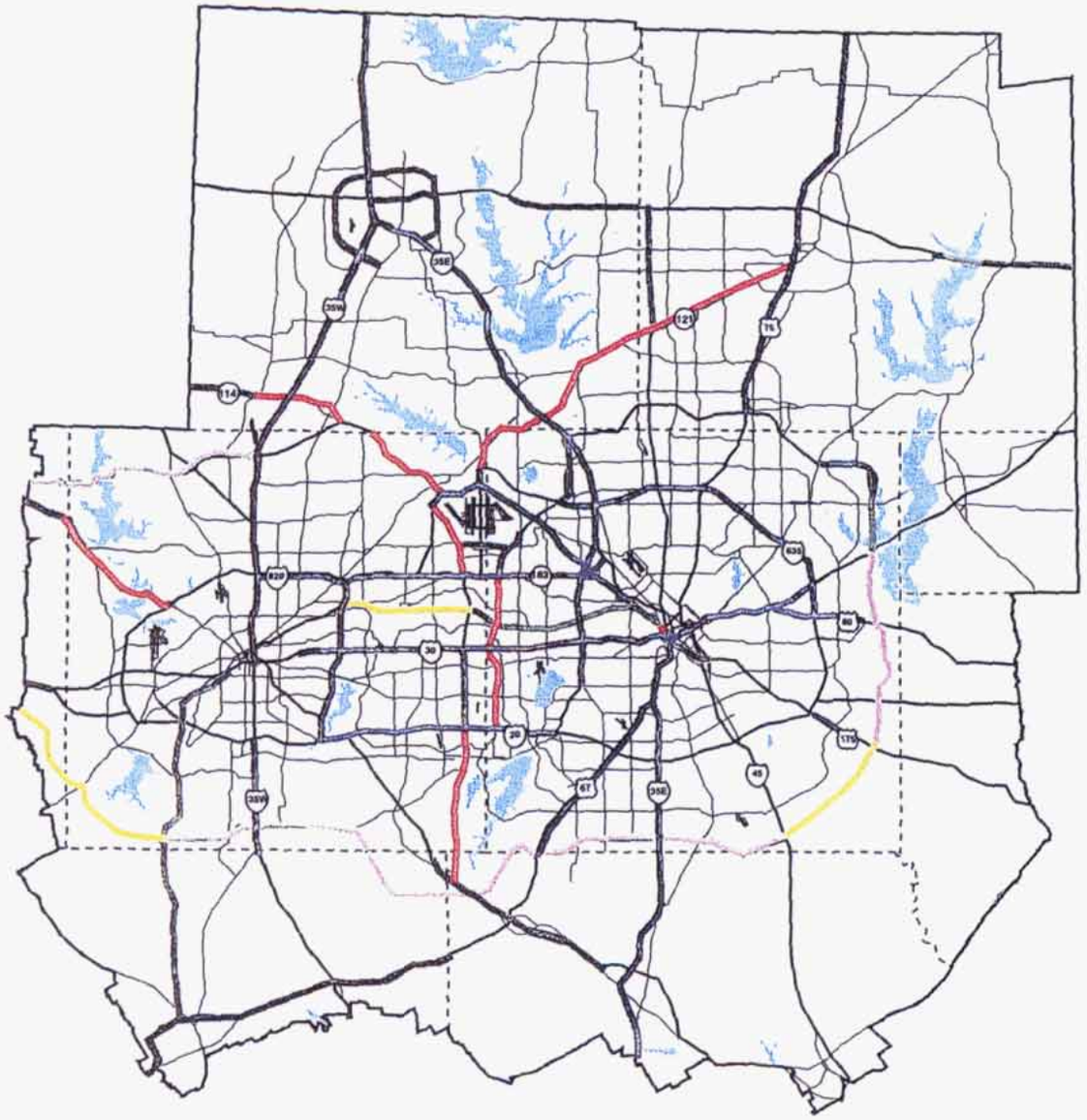
EXHIBIT II-4



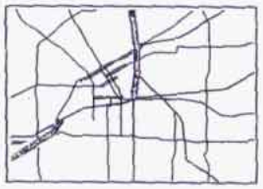
Mobility 2025 Update
Freeway and Tollway System

Legend

- Improve Existing Freeway
- New Staged Freeway
- New Staged Tollway
- New Staged Parkway
- Upgrade to Parkway
- Preserve ROW

Dallas CBD

Fort Worth CBD



Additional and improved freeway interchanges and service roads should be considered on all freeway facilities in order to accomodate a balance between mobility and access needs.

New facility locations indicate transportation needs and do not represent specific alignments.

The need for additonal east/west capacity is identified in the corridor between Northwest Highway and Mockingbird Lane from US 75 to SH 183/IH 35E. Further study is needed to refine alignment and operational characteristics.

MOBILITY 2025 UPDATE

North Central Texas Council of Governments Transportation

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programming of these projects at the appropriate time with respect to the Single Occupancy Vehicle (SOV) facility implementation and project specific elements.

Various strategies, including TSM, TDM, capital improvements, land-use strategies and other transportation control measures were evaluated for their effectiveness and feasibility. Strategies were then recommended based on ease and cost of implementation, congestion benefits, air quality benefits as well as benefit-cost ratios. The evaluation of projects for inclusion in the TIP centered on five criteria: *1)* Current cost-effectiveness; *2)* Air quality and energy conservation; *3)* Local cost participation; *4)* Intermodal/multimodal/social mobility; and *5)* Project inclusion in the Regional CMS or SIP as a Transportation Control Measure.

Several regional and specific strategies to reduce congestion have been considered: operational improvements, traffic flow improvements, HOV lanes, improved transit service facilities, light/commuter rail service, bicycle and pedestrian improvements, travel demand management such as employer trip reduction (ETR) programs, area wide ridesharing (carpooling and van pooling), and voluntary no-drive days. These measures are discussed below. Estimates of each measure's potential effectiveness were based on experience, regional travel demand management (TDM)/transportation system management (TSM) commitments/congestion management systems and *Transportation Control Measures: State Implementation Plan Guidance* (Source: Systems Applications, Inc, 1990 for the EPA).

<u>Operational improvements</u>: Operational improvements can range from implementation of incident detection and management programs to adding capacity. The Congestion Management System (CMS) for the Dallas-For Worth region recommends that electronic surveillance and response technology (including intelligent transportation systems [ITS] and motorists information systems) be installed and operated on freeways to alleviate congestion. In addition, the CMS recommends that motorists assistance teams (i.e., TxDOT Courtesy Patrol) patrol congested freeway corridors during normal peak hours.

TxDOT Courtesy Patrol is presently being used to manage incidents on major freeway sections. Duties of the Courtesy Patrol include aiding stranded motorists (flat tires, fuel, and mechanical problems) and providing traffic control for police and fire departments during freeway accidents. ITS and motorists assistance programs are designed to detect and quickly respond to incidents and accidents in order to lessen the severity of nonrecurring traffic congestion. Additionally, these measures can also be used to manage the freeway system and help it operate more efficiently.

Traffic flow improvements: The objective of traffic flow improvements is to: 1) maximize the carrying capacity of the roadways; 2) reduce the number of vehicles in queues; 3) increase overall speed; 4) increase roadway capacity; and 5) reduce stops and delays. These improvements, also known as TSM improvements, are relatively low cost and easily implemented. Included are items such as: traffic signal retiming/synchronization; restriping to gain additional lanes; adding turning bays; restricting turning movements; and removing bottlenecks. *Mobility 2025 Update* lists specific types of TSMs for the region, which include: retiming/synchronization of traffic signal locations (including across local jurisdictional boundaries); locations for intersection improvements; and freeway bottleneck removal.

HOV lanes: *Mobility 2025 Update* recommends the use of HOV lanes based on current and projected traffic congestion. Candidate HOV corridors were analyzed by forecasting peak hour direction HOV usage for carpools/vanpools and express bus ridership using the Dallas-Fort Worth Regional Travel Model. Upon completion of the HOV forecast, the peak hour direction warrant of 2,200 persons was applied to each candidate HOV facility and then checked for peak hour congestion Level of Service (LOS). TxDOT and NCTCOG will continue to assess the HOV demand throughout the regional planning area.

Light/commuter rail service: *Mobility 2025 Update* recommends the use of light rail as part of

the DART light rail system and commuter rail on the RAILTRAN line. RAILTRAN, a regional commuter rail service, has a planned east-west line through the study area. This service will operate between the Fort Worth and Dallas central business districts. The majority of this commuter line would use the former Chicago Rock Island & Pacific Railroad. Primarily, the line would serve east-west commuters with stations at various locations in the cities of Dallas, Irving, Arlington, Richland Hills, and Fort Worth. In addition to the RAILTRAN line, the Fort Worth and Western line from Dallas-Fort Worth International Airport to the Fort Worth central business district is under study as a possible commuter rail route.

Bicycle and pedestrian improvements: On a regional level, *Mobility 2025 Update* explores the opportunities for integrating bicycle and pedestrian traffic into the overall intermodal network in North Central Texas. National research suggests that bicycle commuting occurs most often for distances of 8.1 kilometers (5 miles) or less from home to work and 1.6 kilometers (1 mile) or less is a reasonable distance for walking from home to work. NCTCOGs modeling shows that approximately 33% of the commuters in the Dallas-Fort Worth Metroplex travel 8.1 kilometers (5 miles) or less to work. Bicycling and walking can also be considered as an effective mode of transportation for home to school, entertainment, shopping, movement between and within residential neighborhoods, and recreation.

Mobility 2025 Update suggests coordinating on-road bikeways with programmed roadway improvements or new construction, and developing a regional veloweb, a companion off-system bicycle system. On-road bicycle provisions do not necessarily mean dedicated lane for bicycle traffic. A 4.27-meter (14-foot) wide outside lane, 3.66-meter (12-foot) wide lane with a 0.61-meter (2-foot) curb offset is beneficial to both bicyclists and motor vehicles. This is considered acceptable for bicycle transportation.

Travel Demand Management (TDM): TDM describes a wide range of actions aimed at improving mobility by lessening the travel demand on the transportation system during peak

periods. TDM is also a tool to reduce air pollution and help solve transportation-related problems at individual work sites. TDM strategies encourage travelers to use other alternatives to driving alone, especially at the most congested times of the day. Examples include congestion pricing schemes, incentives to increase use of alternative modes of travel and employee trip reduction programs. The following describes various TDM strategies being promoted in the Dallas-Fort Worth area.

Employee Trip Reduction (ETR) programs: An ETR program is a concept based on either voluntary or mandatory ETR ordinances to reduce employee commute vehicle trips. Such plans are primarily aimed at public and private employers with at least 100 employees at a single location and are predicted to increase vehicle ridership by 25% among participating employees. ETR programs can include numerous elements such as: variable work hours, telecommuting, carpooling/vanpooling incentives, parking management strategies, pedestrian/bicycle incentives, subsidized transit passes, etc.

Telecommuting: Telecommuting is working at a location other than the conventional office. The place may be a home or an office close to home. Telecommuting odes not necessarily require a computer nor does it have to be a full-time arrangement. One potential problem associated with telecommunicating is the opportunity for increased non-work trips. TxDOT has recently completed a research project to develop a handbook for employers interested in telecommuting. However, little research or data is available to quantify the transportation effects.

Parking Management: Parking management techniques such as priority carpool/vanpool parking and parking pricing/allowance can be incorporated into an ETR program. Parking management, park-and-ride lots, and fringe parking were also considered as options to reduce congestion. Parking management is a set of strategies used to balance the supply and demand for parking while addressing related issues such as traffic congestion, air pollution and commuter mobility. These strategies are applicable in CBD where there is a high density of

employment and parking fees. At this time, there are no ordinances requiring employers to charge for parking, provide bicycle parking or limit parking in the Dallas-Fort Worth region, nor has any local government passed an ordinance stipulating the rates to be charged for parking.

Park-and-Ride Lots: At least two park-and-ride lots have been constructed in the region since 1990 with additional opportunities being investigated. *Mobility 2025 Update* anticipates the construction of additional park-and-ride lots by the year 2025.

Area-wide Ridesharing: Area-wide ridesharing was also considered as a potential reduction measure. The Dallas-Fort Worth CMS cites ridesharing programs as key elements of the regions TDM efforts. Carpooling and vanpooling are likely to be of primary interest to people who live a long way from work - round trips averaging 40 kilometers (25 miles) or more for carpools and 48 kilometers (30 miles) or more for vanpools. For shorter trips, the added time to pick up and drop off passengers and the inconvenience of conforming to a fixed travel schedule will probably outweigh any cost savings or incentives. Home-based work trip information showed round trip work distances of 40 kilometers (25 miles) or more accounted for 40% of the trips in the study area while 33% were 48 kilometers (30 miles) or greater. The availability and cost of parking can be another consideration in the decision to carpool/vanpool.

Vanpool Services Incorporated (VPSI) is a regional vanpool facilitator through the FWTA. Currently, their service provides 15-person passenger vans for vanpools in the study area. FWTA offers rideshare matching services to create compatible rideshare arrangements. Also, through the CMAQ program, FWTA offers incentives to start and maintain vanpools.

In an effort to reduce congestion and the need for SOV lanes in the region, both TxDOT and the NCTCOG would continue to promote appropriate congestion reduction strategies through the CMAQ program, the CMS and the Metropolitan Transportation Plan. According

to NCTCOG, the congestion reduction strategies considered for this project would help alleviate congestion in the SOV study boundary but would not eliminate it.

Therefore, the proposed SH 121T project is justified. The CMS analysis for added SOV capacity projects in the Transportation Management Area (TMA) is on file and available for review at NCTCOG. *Mobility 2025 Plan Update* recommendations in the SH 121T project corridor, including TSM and TDM strategies, are illustrated in Exhibit II-5.

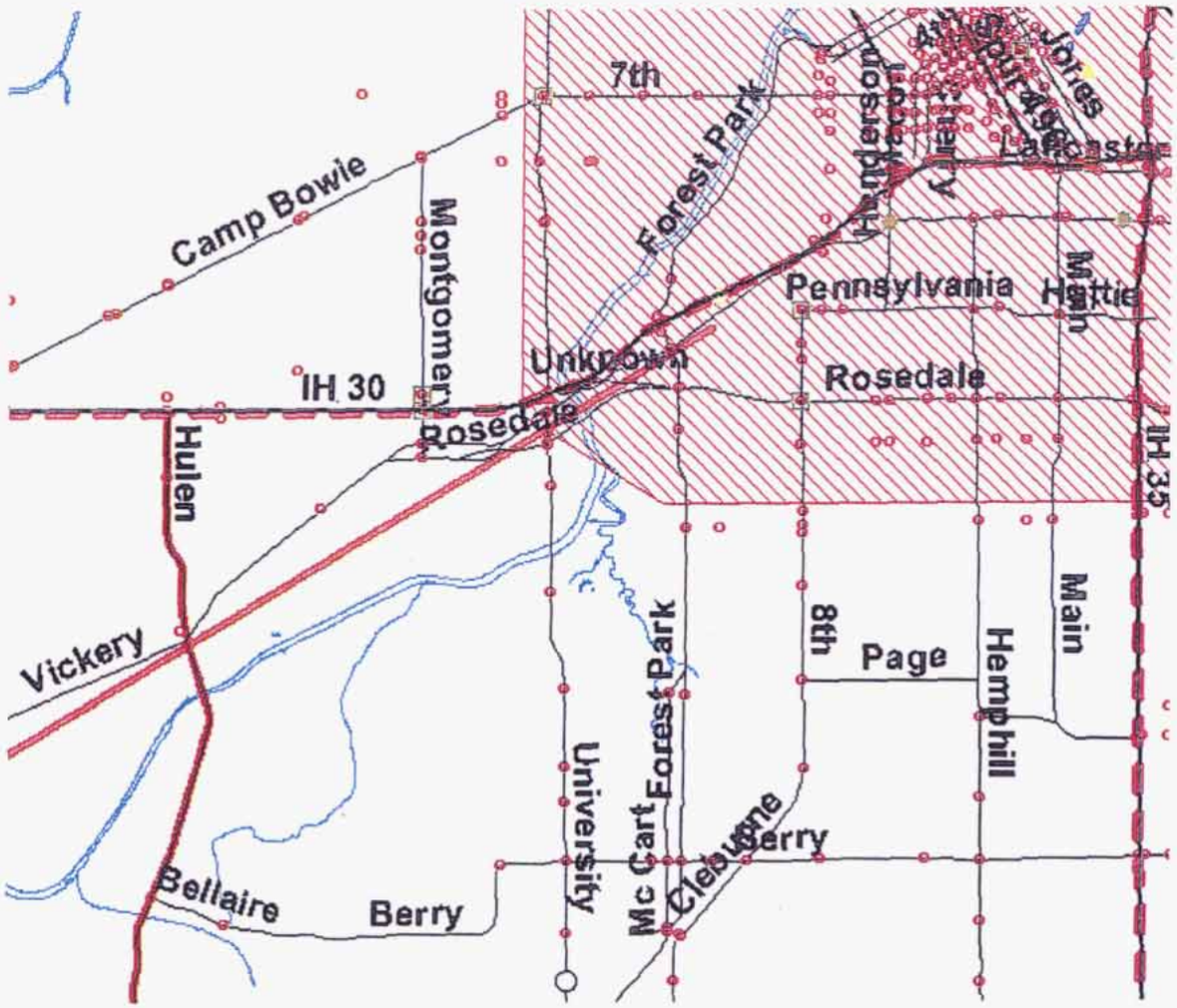
Modal Interrelationships

The proposed action would provide major interchanges with IH 30 and SH 183/IH 20, existing east-west access routes for the Metroplex. The extension of SH 121T toward the southwest would facilitate traffic from southwest Fort Worth to SH 121 and IH 35W thereby improving access to the Dallas/Fort Worth International Airport (DFW), Alliance Airport, Amtrak and the mass transit system in Fort Worth. The proposed action would ultimately provide quicker access for vehicles between major points of interest within the City and outlying suburbs. These would include the north side (stockyard area), the CBD, the Cultural District and the rapidly growing medical complex in southwest Fort Worth.

Transportation Need Due to Growth and Development

Although the project is important to the region as a whole, a primary goal of this project would be to provide the southwest area of Fort Worth a much-needed controlled access freeway connector to the Fort Worth CBD. There is currently no direct route between the Fort Worth CBD and increasing retail, commercial and residential development in the southwestern part of Tarrant County, as well as parts of Johnson County. As mentioned previously, projected increases in employment for the cities of Benbrook, Crowley and Burleson (all located within the project corridor) are 42%, 28% and 135%, respectively, between the years 1995 and 2025. Similar increases in the number of households, and total

EXHIBIT II-5



Legend

- Addition of Lanes
- Bike/Pedestrian
- Bottleneck Removal
- Bus Transit
- Grade Separation
- HOV
- Interchange
- Intersection Improvement
- ITS
- New Roadway
- Park & Ride/Rail Station
- Rail Transit
- Rehabilitation
- Traffic Signal Improvement

Date: 11/2/01

Source: North Central Texas Council of Governments, Transportation Department

The Transportation Improvement Program (TIP) is a staged, multiyear listing of surface transportation projects with committed federal, state, and local funding within the Dallas-Fort Worth Metropolitan Area. The TIP is developed through a cooperative effort of the North Central Texas Council of Governments (NCTCOG), the Texas Department of Transportation, local governments, and transportation authorities. The projects shown above are a partial listing of TIP projects, representing those projects selected by NCTCOG's Regional Transportation Council. Additional project listings will be available in the future.

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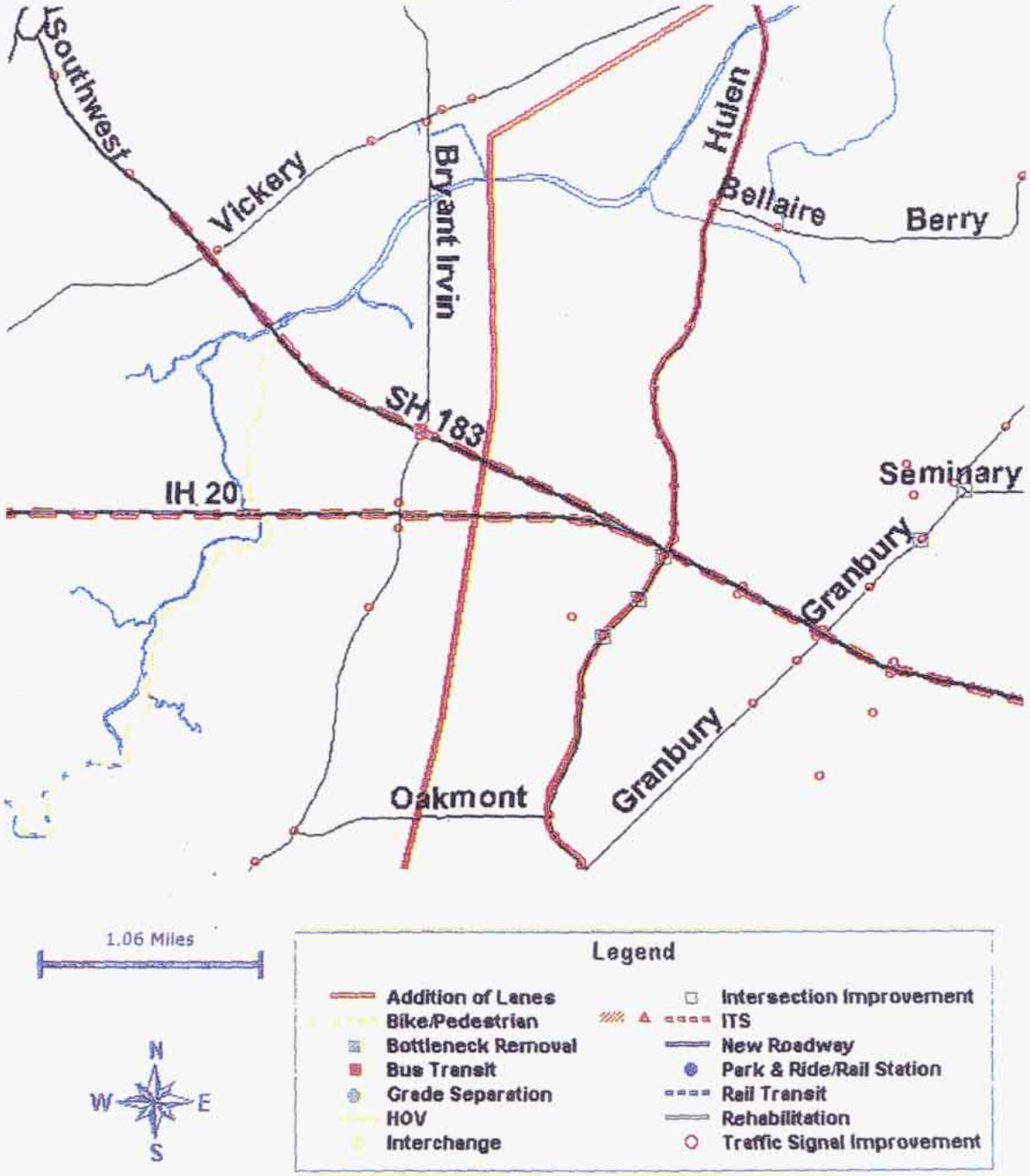
EXHIBIT II-5 (CONTINUED)



Date: 11/2/01

Source: North Central Texas Council of Governments, Transportation Department

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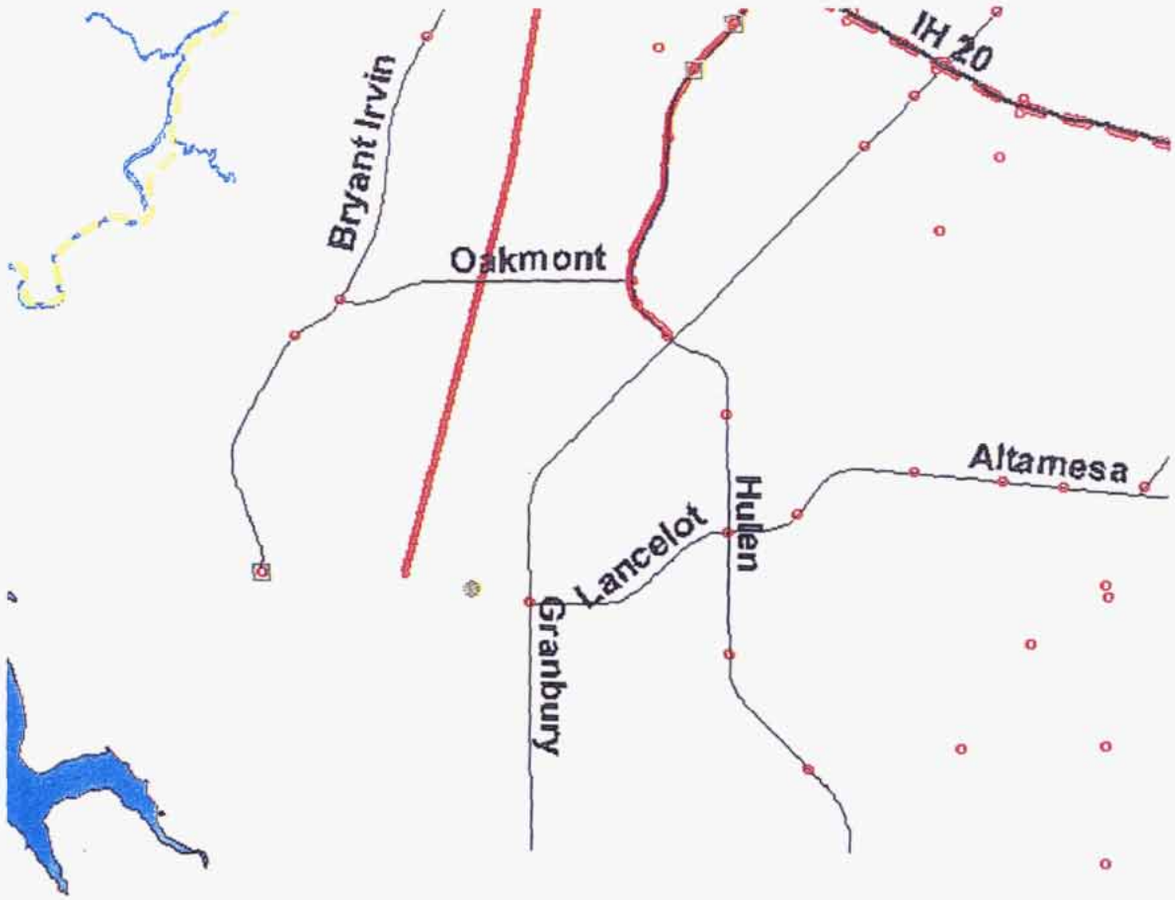
EXHIBIT II-5 (CONTINUED)



1.06 Miles

N
W E
S

Legend

- Addition of Lanes
- Bike/Pedestrian
- Bottleneck Removal
- Bus Transit
- Grade Separation
- HOV
- Interchange
- Intersection Improvement
- ITS
- New Roadway
- Park & Ride/Rail Station
- Rail Transit
- Rehabilitation
- Traffic Signal Improvement

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population, are expected for the same cities over the 25-year period. Based upon these projections and the subsequent traffic growth, the existing arterial system within the project corridor will be unable to provide an acceptable LOS for local circulation. Currently, major arterials within the PSC such as University Drive, South Hulen Street and Bryant Irvin Road are operating at breakdown conditions (i.e., LOS F by Federal and State standards) during peak periods. A new radial freeway in the proposed corridor would relieve traffic congestion on these north/south arterial roadways.

In addition to easing local circulation, studies have shown that SH 121T, if constructed, would provide the typical user an average travel distance savings of 1 to 3 mi, and an average travel time savings of five to ten minutes between the CBD and various points within the PSC. The proposed facility would also benefit the region by reducing congestion on existing facilities thereby reducing the magnitude of air pollution due to carbon monoxide (CO) as well as nitrogen oxides (NOx) and volatile organic compounds (VOCs) that contribute to the formation of ground level ozone (smog).

Traffic Analysis and Results

The proposed facility would facilitate traffic movements between the Fort Worth CBD and newly developed areas in southwest Fort Worth, currently served by IH 35W in the north-south direction and IH 30 and/or IH 20 in the east-west direction. Major arterials that provide north-south access within the immediate study corridor are Bryant Irvin Road and South Hulen Street. Other arterials that provide northeast-southwest access include Vickery Boulevard, Granbury Road and Camp Bowie Boulevard.

Motorists who wish to travel between the Fort Worth CBD and southwest Fort Worth currently use the existing freeway system, in combination with the various other major arterials. These movements are made difficult due to congestion on the freeways, and

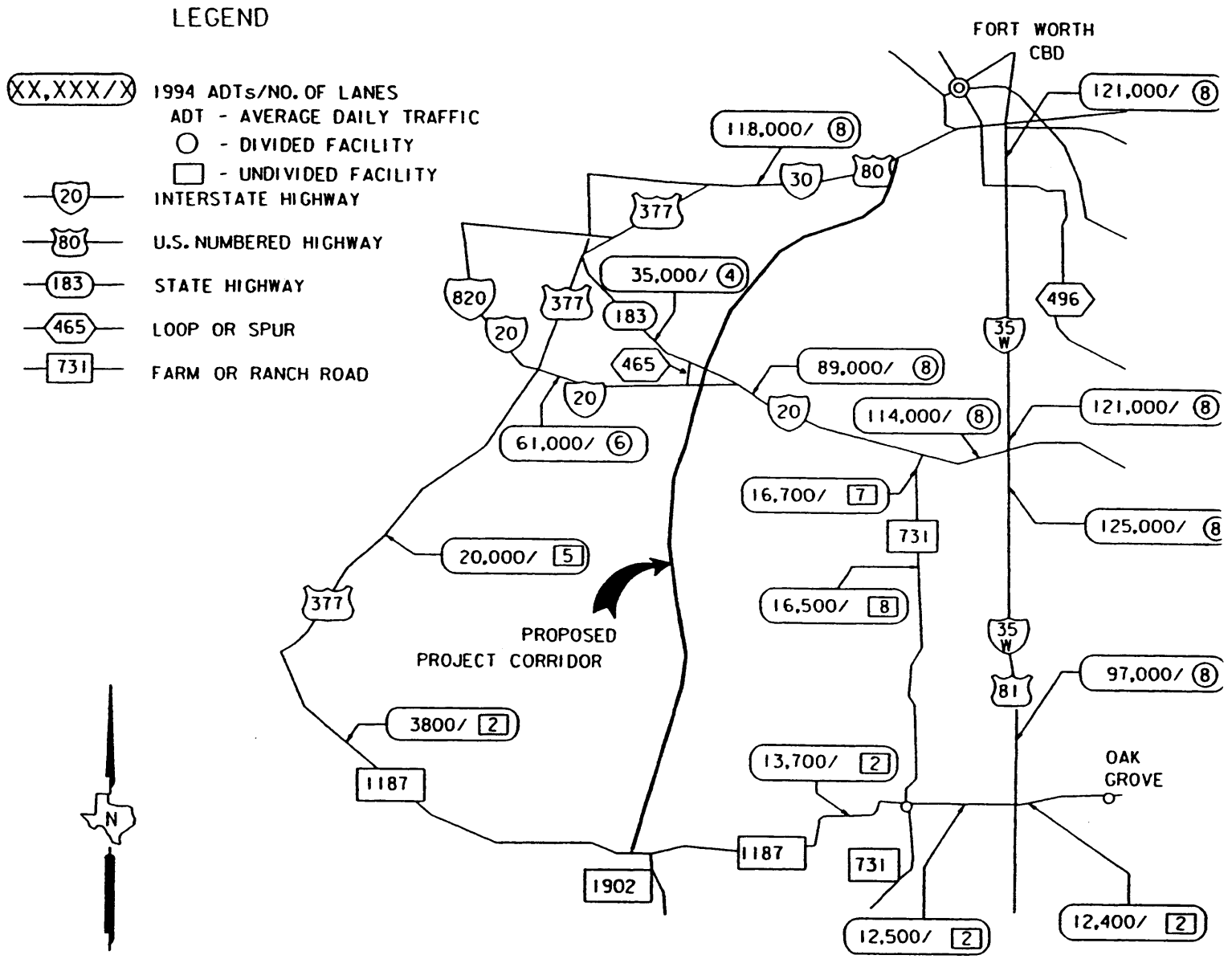
because of frequent traffic lights and slower speed limits along local arterials. Observed traffic patterns on these facilities indicate heavy commuter use, with the average weekday traffic significantly higher than average weekend traffic.

Existing traffic volumes were obtained for the various freeway and arterial facilities serving the project study area. Only traffic data as recent as 1994 (for arterials) and 1996 (for freeways) was available at the time this document was prepared. These are presented in Exhibits II-6 and II-7. The LOS at which various facilities were operating can be determined by referring to the chart in Appendix D, that shows the recommended maximum average daily traffic (ADT) volumes for various facility types at different flow conditions. The chart indicates that in 1994, Bryant Irvin Road, South Hulen Street, University Drive and McCart Avenue (south of IH 20), were operating below acceptable levels of service (i.e., LOS E by Federal and State standards). Assuming an average growth rate of 2 percent per year (conservative, by NCTCOG's estimates), a reasonable deduction can be made that arterials shown in Exhibit II-7 are currently operating below LOS E. Applying a similar rate of growth to interstate and other on-state system facilities results in a similar outlook for these facilities as well.

Safety/Roadway Deficiencies

Similar to most large cities, the existing road, local street, thoroughfare and freeway system in Fort Worth was originally laid out for a historical time period and less spread-out city. Although major reconstruction of the freeway system is occurring, many of the thoroughfares, and local streets forced to serve as thoroughfares, are inadequate in width (capacity), sight distances, safety design features and continuity. There is no direct route of a southwest-to-central orientation similar to what would be provided by the proposed facility.

Additionally, the design limitations of many of these urban roadways cause them to carry substantially more traffic than they were designed for, thus leading to congested conditions. This congestion leads to higher costs to the traveling public.



1996 District Highway Traffic Map. Fort Worth District, Texas Department of Transportation – Transportation Planning and Programming Division.

EXISTING TRAFFIC VOLUMES FOR ON-STATE FACILITIES

EXHIBIT II-6

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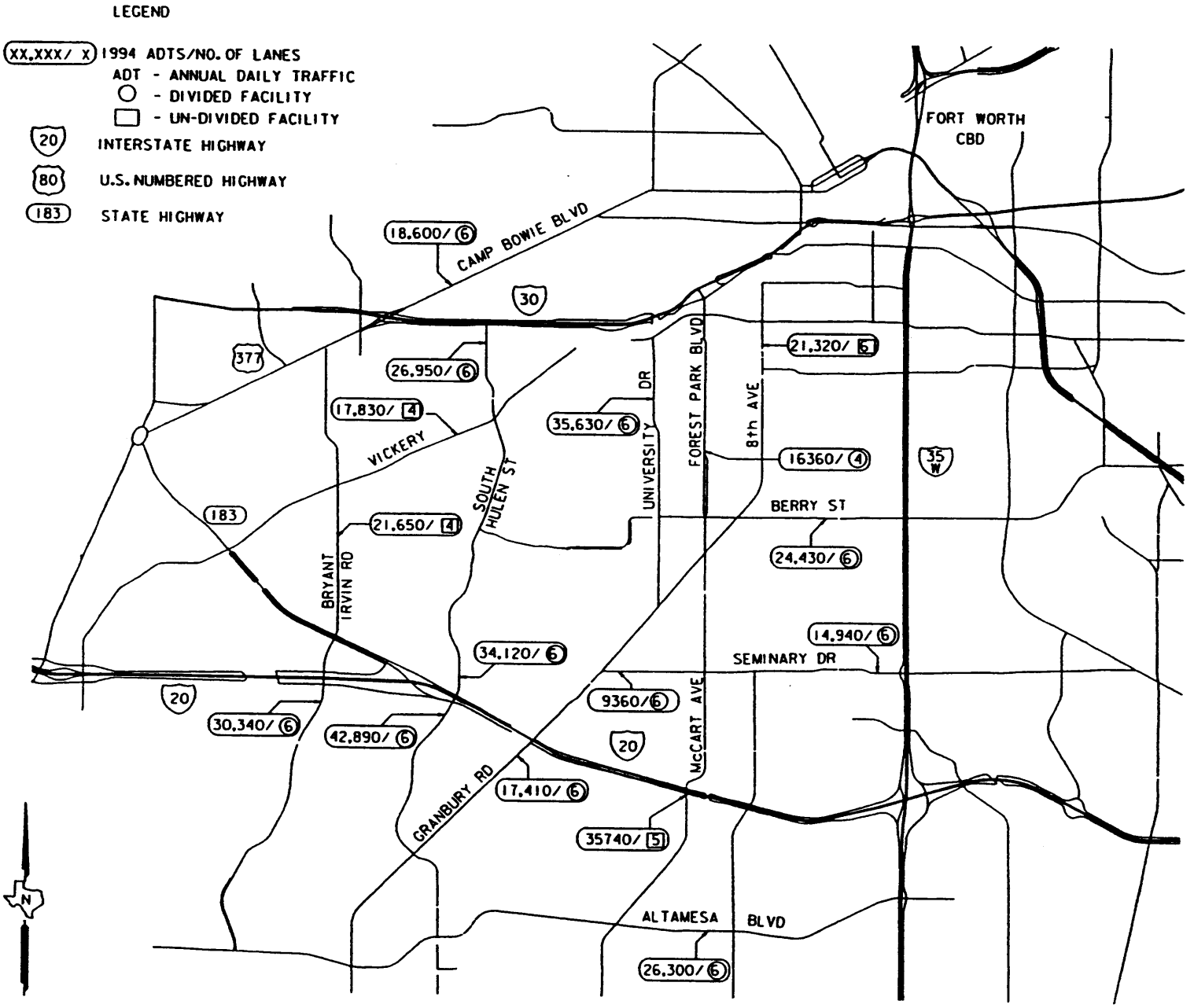

1994 Traffic Map. Fort Worth District, Texas Department of Transportation

EXISTING TRAFFIC VOLUMES FOR MAJOR ARTERIALS

EXHIBIT II-7

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Without major improvements, or disruptive reconstruction of the existing roadway network, the existing system would continue to become more congested. The increased congestion would lead to hazardous and unsafe conditions that would likely result in higher accident rates.

The proposed facility, by providing a direct and continuous southwest-to-central major traffic arterial, would improve access and travel time of public safety vehicles and emergency services. The proposed facility would also provide a controlled access highway that would complement the existing and proposed roadway network.

Funding and Legislation

Section 1602 of the Transportation Equity Act for the 21st Century (TEA-21, P.L. 105-178, June 9, 1998), known as the High Priority Projects Program provides designated funding for specific projects (commonly referred to as demonstration projects) identified by Congress, and is now included in 23 USC. 117. TEA-21 includes 1850 of these projects, each with a specified amount of funding over the 6 years of TEA-21. The designated funding can only be used for the projects as described in the law [1601(a)]. With support from Senator Kay Granger (R-Texas), funding in the amount of $25 million has been earmarked specifically for the construction of SH 121T from IH 30 to the Tarrant/Johnson County Line (plus an additional $7 million to extend to US 67 in Cleburne), under this category of TEA-21.

The SH 121T study was authorized by Minute Orders No. 83516 and 84030, and approved by the Texas Transportation Commission on August 29, 1985, and January 30, 1986, respectively. Minute Order No. 83516 was accepted by the City of Fort Worth on October 15, 1985, by a Fort Worth City Council and Mayor communication (Number G-6454). The Commissioners Court of Tarrant County adopted Minute Order No. 83516 by resolution on November 25, 1985.

Environmental review and approval of the proposed facility is governed by the National Environmental Policy Act (NEPA) and its implementing regulations; regulations and procedural guidelines of the FHWA, TxDOT; and other statutes and regulations.

III. ALTERNATIVES

Development of Route Location

As described in Chapter I, the proposed facility has been studied over a lengthy period of time. Specifically, the need to provide a means for direct access between the CBD of Fort Worth and the suburbs of southwestern Tarrant County has been identified and supported with each successive study. The alignment for the recommended Build alternative is the product of numerous route location studies in which various functional and/or location alternatives were identified to meet a growing transportation need. Over the project's 30-year history, the City's emerging development patterns have eliminated many of the early alternatives. The various agencies responsible for the development of this project have taken great precaution to incorporate and include public input in the development of the recommended alignment. Previous studies have analyzed different alternatives ranging from a freeway facility at differing locations, several tollroad alternatives, a rail alternative, and other strategic initiatives aimed at reducing congestion and optimizing the existing transportation network. Therefore, many modal and Build alternatives have been considered. These studies have culminated with the selection of an alignment capable of meeting the purpose and need and obtaining public support for the project. The following discussion is intended to summarize over three decades' worth of planning and engineering studies that have led to the development of the recommended alignment.

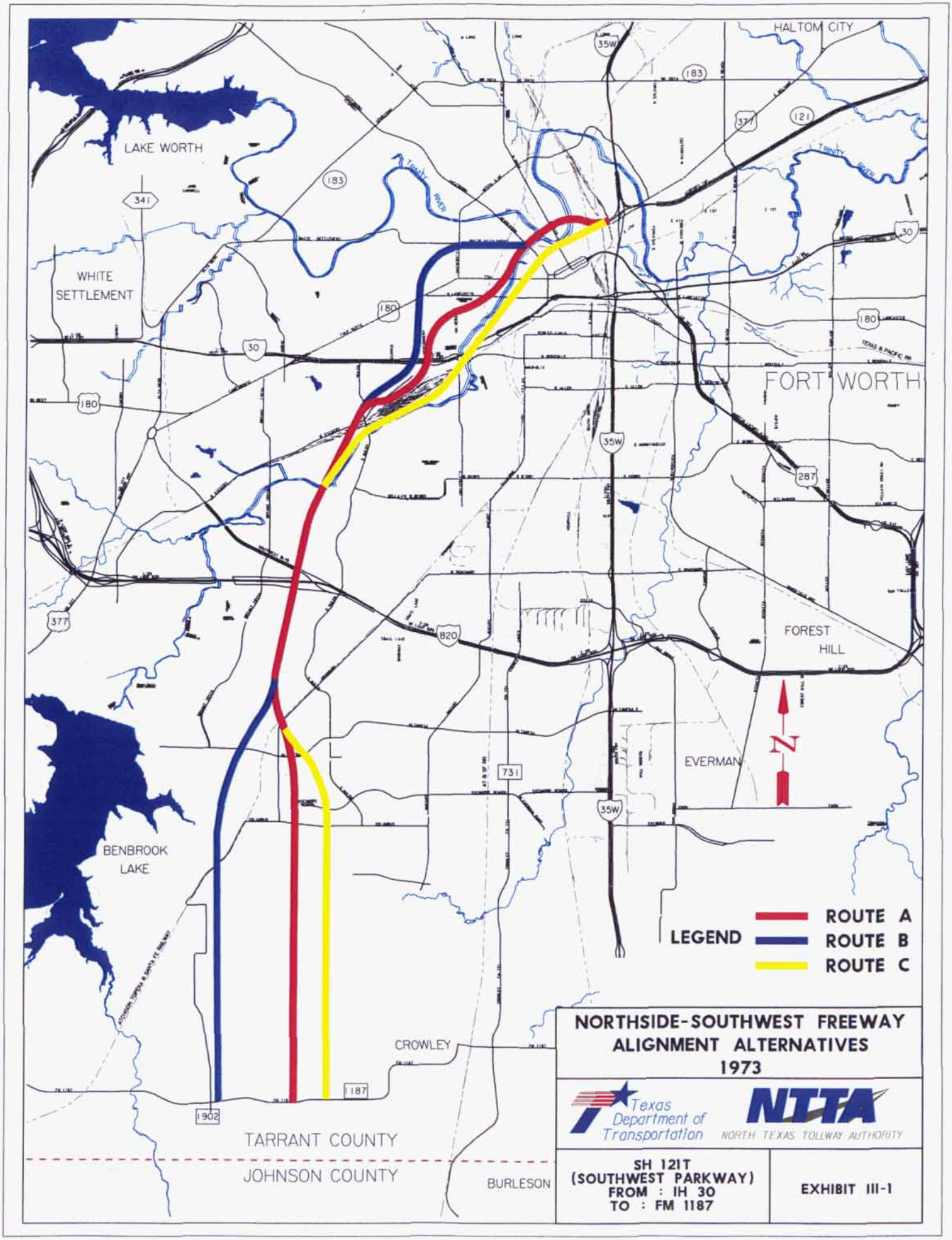
Early 1970's SH 121 Route Location Study

Following the project's inception, circa 1962, the first public hearing was held jointly by the City of Fort Worth, Tarrant County, NCTCOG and TxDOT on May 2, 1973. Three alignments were presented as possible considerations for the proposed "Northside-Southwest Freeway" from IH 35W to the Tarrant-Johnson County Line. These were identified as "Route A", "Route B" and "Route C", shown in Exhibit III-1. The location of the northern terminus did not vary with each alternative and was determined by its logical connection to the existing SH 121. At the interchange with IH 20 (Southwest Loop), the alignment had to be far enough west so as not to

interfere with the existing Hulen/IH 20/SH 183 interchange and far enough east to avoid an existing residential development and the Country Day School. Also, before approval of the geometric design of the existing interchange at IH 20 and SH 183, the FHWA required development of a tentative design for the complete five-legged interchange with the proposed SH 121. Thus, the freeway's northern terminus and the approximate location of its crossing at IH 20 were established as fixed points.

The first set of alignment alternatives for the proposed facility, considered at the 1973 public hearing, were the red, blue and yellow alignments shown in Exhibit III-1. Prior to the emergence of Fort Worth's "Cultural District" in the early 1980s, the red alignment (Route A) was heavily favored as the preferred route location for the following reasons:

- In the northern section, the blue alignment (Route B) cut through a heavily developed residential neighborhood, causing several displacements and resulting in fragmented neighborhoods. This alternative was estimated to cost $10 million more than the proposed red alignment, and would impact/displace over 1,400 families.
- The yellow alignment (Route C) required a significant tunnel section downtown in order to avoid impacts to the Courthouse area. Utility relocations and costly construction were the primary reasons for rejecting this alternative. It would cost $40 million more than the proposed red alignment and would displace 474 families.
- The red alignment (Route A) would run almost parallel to the yellow alignment, but would skirt around the Courthouse area. Fort Worth's Cultural District had not yet evolved, as we know it today. Sites such as Trinity Park, Van Zandt Cottage, Farrington Field and the Botanical Gardens were the principal avoidance concerns and the red alignment would have minimal impact on these sites. The interchange with IH 30 was located at Montgomery Street. At the southern end, the red alignment was recommended because it would provide a desirable balance of land area as compared to the blue and yellow alignments. Fewer families would be displaced by the red alternative (433) and the cost would be significantly lower than the other two alignments.


HALTOM CITY
LAKE WORTH
WHITE SETTLEMENT
FORT WORTH
FOREST HILL
EVERMAN
BENBROOK LAKE
CROWLEY
TARRANT COUNTY
JOHNSON COUNTY
BURLESON
Trinity River
LEGEND
ROUTE A
ROUTE B
ROUTE C
N
NORTHSIDE-SOUTHWEST FREEWAY ALIGNMENT ALTERNATIVES 1973
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T (SOUTHWEST PARKWAY) FROM : IH 30 TO : FM 1187
EXHIBIT III-1

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The red alignment was recommended as the preferred alternative at the 1973 hearing and received overwhelming support from the public. Following the favorable hearing, the Texas Highway Commission adopted the proposed extension of SH 121 as a part of the highway system, previously having merely directed that a study be made for feasibility to be concluded with a public hearing.

As design and ROW studies were being developed for the new freeway, the national economy began to decline, construction costs were inflated and the project was stalled for several years. Meanwhile, downtown Fort Worth began to change its form with the emergence of new developments and attractions. The red alignment would now cut through what was becoming designated as the Cultural District and was subsequently rejected in favor of a new route location study. South of IH 20, new subdivisions began to grow in the corridor with residential, commercial and community facility land uses encroaching into the proposed ROW.

"Southwest Fort Worth Subarea Study"

Growing public concern with the originally proposed alignment for a southwest radial freeway was based on conflicting urban growth following the public hearing in 1973. The NCTCOG later began work on the *Southwest Fort Worth Subarea Study* and a final report was published in April 1984 . The methodology used throughout the study closely parallels the current process of environmental documentation under NEPA regulations, beginning with the development of goals and objectives (i.e., identifying the project's purpose and need), development and analysis of alternatives from a "world of alternatives" to only those considered reasonable and feasible, comprehensive evaluation of remaining alternatives, and finally, identification of a preferred alternative. Due to the depth and quality of information available in the *Southwest Fort Worth Subarea Study*, it has been included in its entirety (Appendix B) and is summarized below. The stated objectives for the study were identified as follows:

1. Identify the desired land use and redevelopment objectives for the southwest quadrant.

2. Estimate the land use and population growth areas and rates.
3. Predict the future transportation demand.
4. Evaluate all feasible transportation solutions including public transit and private automobile solutions.
5. Select an alternative that best accommodates the transportation demand in a cost-effective manner and promotes the land use and environmental objectives.

Based on these objectives, 18 alternatives were developed with input from various citizen groups, including the Southwest Quadrant Transportation Study Citizen Advisory Committee, the Fort Worth City Council, the Fort Worth City Plan Commission, and the Park and Recreational Advisory Board and staff. The set of alternatives included transit and roadway options in various combinations, all falling under the following general descriptions:

- A TSM strategy consisting of signal progression, street widening, intersection grade-separations, high-occupancy vehicle lanes and peripheral parking lots.
- Combinations of the above TSM alternative and three different horizontal parkway alignments.
- A tollroad.
- Four different horizontal freeway alignments of varying lengths.
- A passenger rail line or busway with a feeder bus system.

The freeway alignments were considered in various segments in order to address the appropriate location and phasing of freeway construction. As evident from the list of alternatives, all transportation modes – bus, rail and/or automobile – were included in the analysis. Thus, the recommended solution was obtained only after a thorough examination of all reasonable options.

The first phase of the evaluation procedure reduced the number of alternatives from 18 to 10, considering only transportation performance measures, i.e., the alternative's ability to mitigate anticipated congestion levels. The results of the first phase evaluation are provided in Table

III-1. The second phase added cost considerations, thereby eliminating six of the remaining 10 alternatives due to low benefit-cost ratios. Included in the cost component were the following items: lanes, bridges, frontage roads, toll booths (if applicable), ROW acquisition, relocation, operation and maintenance and retaining walls (if applicable). Benefits were determined in terms of the total vehicle hours of delay reduced performance measure, assuming an average vehicle occupancy of 1.4 persons per vehicle and a per capita wage rate of $3.53 per hour. The results of the second phase of the evaluation procedure are shown in Table III-2.

Phase three evaluated the four remaining alternatives and considered transportation, cost and environmental factors (see Table III-3). This resulted in the selection of a final recommended alternative, the "Freeway-East Alignment" including the "South Alignment North of the CBD," extending from IH 35W/SH 121 south and west to Sycamore School Road (see Exhibit III-2).

TABLE III-1
PHASE I EVALUATION OF ALTERNATIVES

Alternative	**Status**
Freeway IH 35W to ISA Boundary	
1. East / Far North	Low Volume
2. East / North	O.K., Stop at Sycamore School
3. East / South	O.K., Stop at Sycamore School
4. West / North	O.K., Stop at Sycamore School
5. West / South	O.K., Stop at Sycamore School
Freeway without IH 30 to SH 199 Section	
6. East / North	Low Volume
7. West / North	Low Volume
Freeway without IH 30 to IH 35W Section	
8. East	O.K., Stop at Sycamore School
9. West	O.K., Stop at Sycamore School
10. Far West	High residential displacements, difficult to interchange with IH 30 misdirection of travel, no extension possible.
11. Tollroad between IH 30 and IH 20, Parkway or Freeway South of IH 20	O.K.
12. Parkway IH 35W to Sycamore School	Too expensive
13. Parkway IH 30 to Sycamore School	
East	Duplication with Parkway/TSM + Alternative
West	Duplication with Parkway/TSM + Alternative
14. Parkway using Bryant Irvin, Vickery and MH 50	Need existing capacity
15. Parkway using Bryant Irvin, Vickery and Forest Park	Need existing capacity
16. Parkway/TSM +Alternative (Parkway IH 30 to Sycamore School)	
East	O.K.
West	O.K.
17. Rail (8th/Granbury)	Low Ridership
18. Busway (8th/Granbury)	Low Ridership

SOURCE: *Southwest Fort Worth Subarea Study*

TABLE III-2

PHASE II EVALUATION OF ALTERNATIVES

Alternative	**Status**
Existing Plus Committed	Not selected for further evaluation due to unacceptable performance.
Freeway (East/North) (35-SS)	Selected for further evaluation.
Freeway (West/North) (35-SS)	Selected for further evaluation.
Freeway (East/South) (35-SS)	Selected for further evaluation.
Freeway (West/South) (35-SS)	Selected for further evaluation.
Freeway (East) (30-SS)	Not selected for further evaluation as a separate alternative. It will be reexamined as a phasing option.
Freeway (West) (30-SS)	Not selected for further evaluation as a separate alternative. It will be reexamined as a phasing option.
Tollroad (30-20)	Not selected for further evaluation as a separate alternative. It will be reexamined as a phasing option.*
Parkway/TSM + (West) (30-SS)	Not selected for further evaluation due to unacceptable performance.
Parkway/TSM + (West) (30-SS)	Not selected for further evaluation due to unacceptable performance.

SOURCE: Southwest Fort Worth Subarea Study

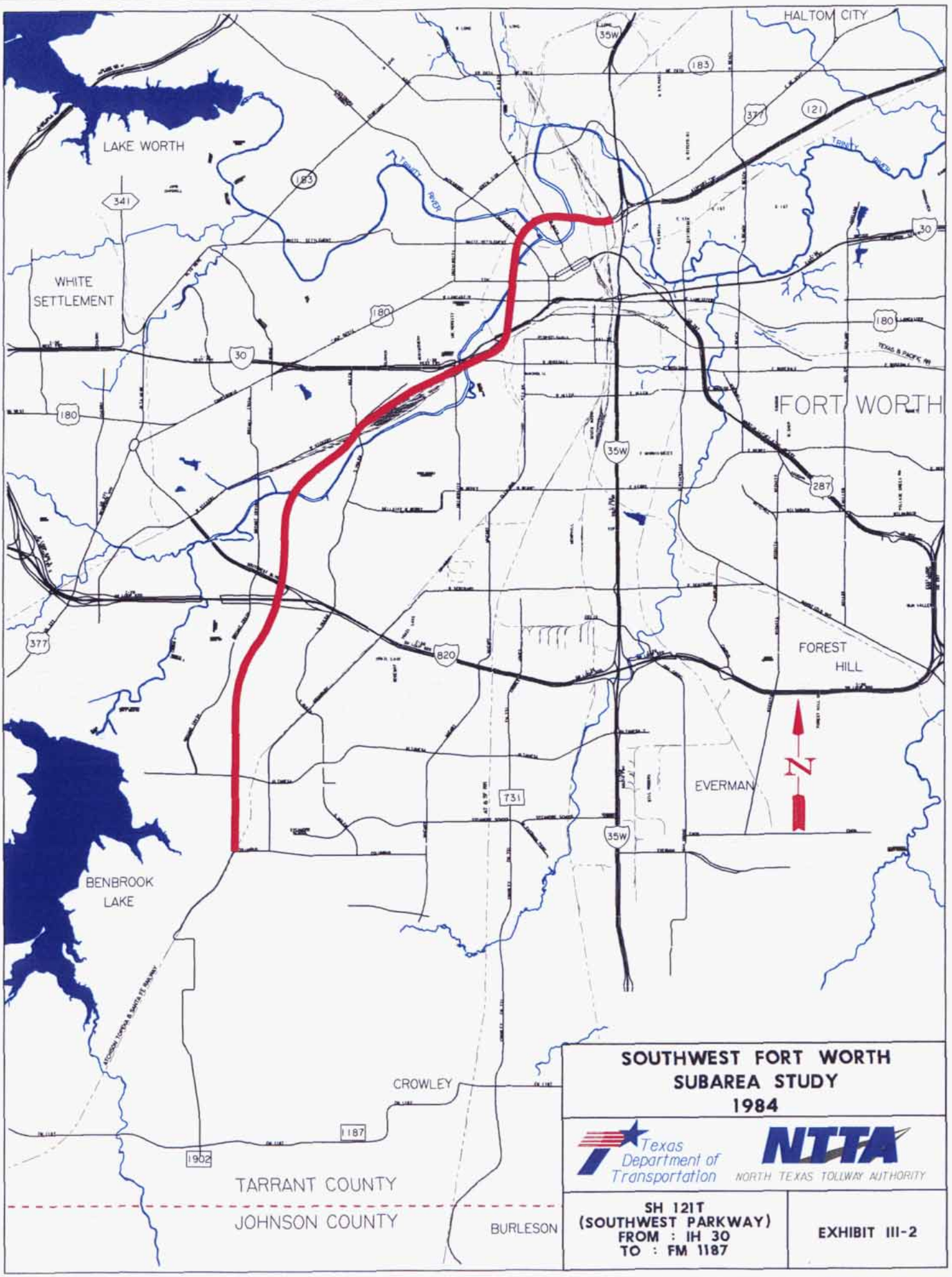
**Note: Subsequent studies have re-evaluated the tollroad option and have found it to be a viable financing option, and as proposed in this study, a preferred alternative that adequately addresses the purpose and need of this project.*

The evaluation criteria used in this phase, similar in scope and content to the various analysis requirements of a NEPA document, are listed below.

TABLE III-3

CRITERIA USED IN PHASE III EVALUATION

Evaluation Criteria	**Performance Measure(s)**
Cost	Annual Capital Costs, ROW Costs, and Operating and Maintenance Costs
Mobility	Total Vehicle Hours of Delay, Vehicle Miles of Travel, Level of Service, Peak-Period Speeds, and Transit Ridership
Environmental Impacts	
• Air Quality	Annual Hydrocarbon Emissions
• Water Quality	Runoff Surface Area (Sq. ft.)
• Biological/Zoological	Extent Impacted
• Visual	Extent Impacted
• Historic Buildings	No. of Historic Bldgs./Extent Impacted
• Noise	Noise levels (dB)
• Energy	Annual Gallons of Fuel Consumed
Business/Residential Neighborhood Impacts	
• Household Displacements	No. of Households Displaced
• Business Displacements	No. of Businesses and Square Footage Displaced
• Disruption/Integrity	Extent Impacted
• Access	Extent Impacted
• Collector Street Travel	Collector VMT/Extent Impacted in Specific Areas
CBD Impacts	CBD Auto Speed
Growth/Redevelopment/Economic Impacts	Extent Impacted
Safety	Annual Property Damage
Construction Disruption	Duration in Days


HALTOM CITY
LAKE WORTH
WHITE SETTLEMENT
FORT WORTH
FOREST HILL
EVERMAN
BENBROOK LAKE
CROWLEY
TARRANT COUNTY
JOHNSON COUNTY
BURLESON
N
SOUTHWEST FORT WORTH
SUBAREA STUDY
1984
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T
(SOUTHWEST PARKWAY)
FROM : IH 30
TO : FM 1187
EXHIBIT III-2

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The recommended alternative would be a 6-lane freeway, 11.7 mi in length, and would cost an estimated $204 million. Of the four "final" alternatives that were considered, this proposed route had the highest benefit/cost ratio at 4.8, and demonstrated substantial improvements in safety, energy consumption and air quality for the southwest region of Fort Worth.

In addition to the proposed route, the following eight recommendations were endorsed by the Fort Worth City Council on January 3, 1984:

1. The southwest quadrant has excellent growth potential. Achieving quality growth with a mix of low, medium and high-density development is in the best interest of Fort Worth, Crowley, Benbrook, Burleson and Edgecliff Village. Through careful planning, such growth would have positive social and economic impacts.

2. A freeway is needed within the next 6 to 8 years to accommodate the transportation needs in the southwest quadrant that will result from the aforementioned growth. This study analyzed several non-freeway alternatives. No single or combination of non-freeway alternatives adequately serves future transportation needs.

3. Several freeway routes were studied and evaluated with respect to engineering feasibility, traffic performance, cost and environmental impacts. The "Freeway-East Alignment" alternative is recommended because of very favorable impacts on performance and cost, while minimizing negative impacts on residential and business neighborhoods, parks, the Cultural District and other community facilities. The "Freeway-East Alignment" produces benefits that best outweigh the direct and indirect costs. A "Freeway-West Alignment" through the Cultural District was also studied as a depressed facility. Compared to the eastern route, this western alternative would have practically the same traffic performance, slightly more cost, but has some significantly higher environmental costs primarily related to business displacement and impact on the existing and future integrity of the Cultural District/Botanic Garden/Trinity Park area.

4. It is recommended that the 11.7 mile continuous "Freeway-East Alignment" including the "South Alignment North of CBD," extending from IH 35W/SH 121 southwest to Sycamore School Road be endorsed and scheduled for construction in the 6 to 8 year time frame. However, if financial constraints necessitate construction phasing, it is recommended that the 8.3 mile stretch between IH 30 and Sycamore School Road be constructed as a first phase while assuring that the ROW between IH 35W/SH 121 and IH 30 be protected for Phase II construction.

5. The need to endorse, fund and implement this freeway is urgent because of heavy demand and also because the ROW is subject to development pressures in the next few years which could preclude the project's feasibility. ROW purchase may be required in the near future in order to keep the project feasible.

6. Funding sources for ROW purchase and construction of this facility should be pursued immediately. An assessment of possible City, County, State, and Federal resources should be conducted. A tollroad facility may be feasible and should be considered as a funding option.

7. It is recommended that the freeway include special design elements to mitigate noise impacts, visual intrusion, etc. Small adjustments in route alignment, grade, construction of noise barriers, amenities to bridge and structural appearance and landscaping should be included as needed.

8. A preliminary engineering study should be conducted on the recommended alternative. This phase of study is the next logical step in a series of steps leading to implementation. Fort Worth, Tarrant County, TxDOT and NTTA resources should be pursued in order to continue the process leading to the implementation of the recommended alternative.

Consequently, the proposed SH 121 was included in *Mobility 2000: The Regional Transportation Plan for North Central Texas* which was adopted in February 1986. The plan showed the proposed facility as a designated freeway from IH 35W to FM 1187 and as a future proposed freeway south of FM 1187.

1987 SH 121 Study: Development of the "North" and "South" Alignment Segments

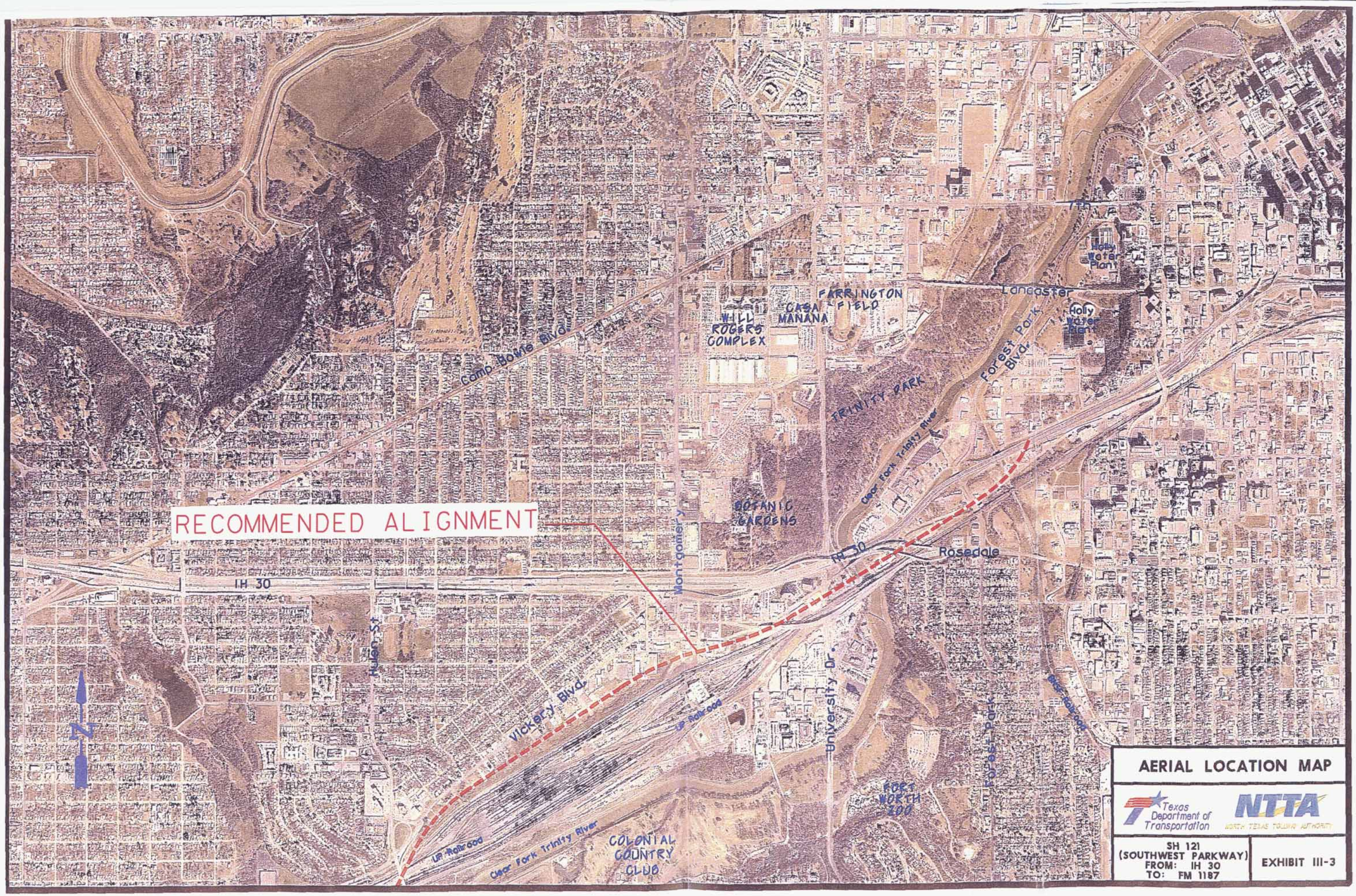
In March 1987, a consultant firm was contracted by TxDOT to conduct preliminary engineering studies for the proposed freeway. The general alignment for the proposed SH 121 was not changed significantly from what was recommended in the *Southwest Fort Worth Subarea Study*. During the years of environmental document preparation, schematic development and public participation that followed, a total of four (4) alignment variations each were developed for the "north" and "south" sections (Chapter I). By the early to mid-1990s, it became apparent that the high cost of such a proposed freeway facility would never be funded for construction under available resources, and further development of the project would be fruitless unless alternative financing mechanisms were secured. A tollroad traffic and revenue study was subsequently conducted and completed in December 1997, with funding from the NTTA. With support from TxDOT, the City of Fort Worth, Tarrant County and the NCTCOG, the project continued to receive local support for consideration as a proposed tollroad.

The project was divided into two segments (a "North" and "South" section) and continued with schematic development and environmental documentation accordingly. With increasing density of development and population and a growing need for the facility, drastic changes to and/or re-evaluation of previously studied alternatives was not considered reasonable or prudent. The recommended alignment, from the NCTCOG and City's studies, was used as the basis for the north and south section schematics, with some alternatives identified for the sections through downtown Fort Worth and south of FM 1187.

Within the current project limits, i.e., IH 30 to FM 1187, there were no additional alternatives identified that would be considered reasonable and/or feasible. Land use patterns have been heavily influenced by the proposed freeway corridor (see Exhibits III-3 through III-7), whereby several residential and commercial developments have been built, or are planned to be built, in anticipation of the proposed facility along the current alignment.

Federal guidelines have been put in place to discourage the selection of alignment alternatives based on preservation of land (whether dedicated by local government, donated by individuals or acquired through advanced or hardship acquisition) in an effort to maintain a sense of equal and non-biased representation for all citizens. At the same time, developers, city planners and transportation officials have continued to work cooperatively to preserve a general highway corridor for the proposed facility in order to minimize, as much as possible, future relocations and/or neighborhood fragmentation. The proposed alignment has been included in various Fort Worth sector plans and land use maps since the City's endorsement of the route location in 1985. As early as July 1983, several development plats in the southern section of the project corridor (IH 20 to Dirks Road) were approved on the basis of the proposed alignments for Bryant Irvin Road and SH 121.

The aerial maps shown in Exhibits III-3 to III-7 illustrate some of the land uses that have taken shape along the project corridor. The current alignment alternative was developed in close cooperation with the City of Fort Worth's planning department, resulting in a fairly restrictive undeveloped corridor suitable for highway use. The proximity of two major arterials, i.e., Hulen Street and Bryant Irvin Road, on either side of the proposed corridor, added to the limitations in the selection of alignment alternatives. South of Altamesa Boulevard, the alignment was located within the limited corridor available with the planned extensions of Bryant Irvin Road to the west and Granbury Road to the east.



AERIAL LOCATION MAP

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121
(SOUTHWEST PARKWAY)
FROM: IH 30
TO: FM 1187

EXHIBIT III-3

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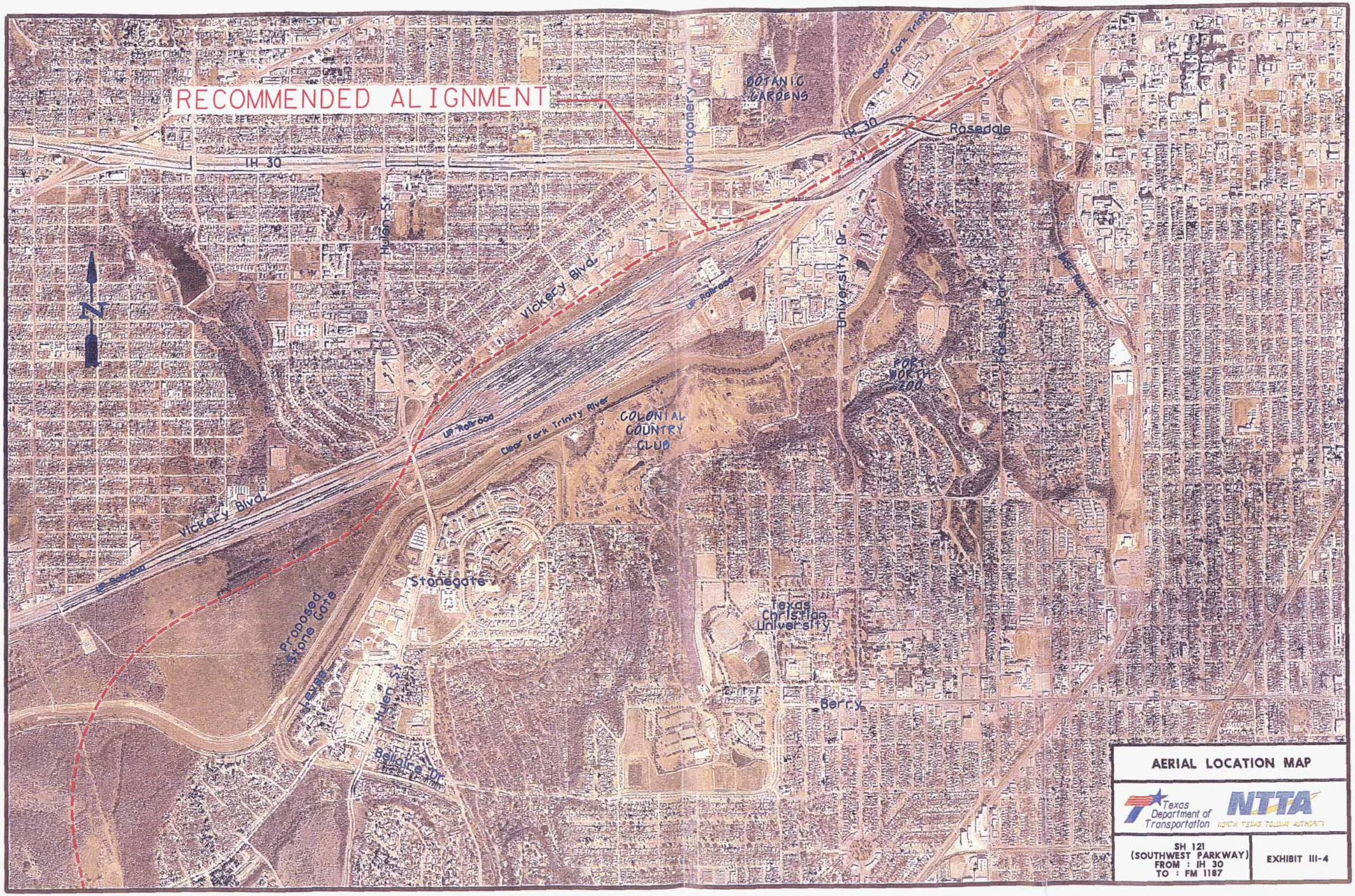

AERIAL LOCATION MAP

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121
(SOUTHWEST PARKWAY)
FROM : IH 30
TO : FM 1187

EXHIBIT III-4

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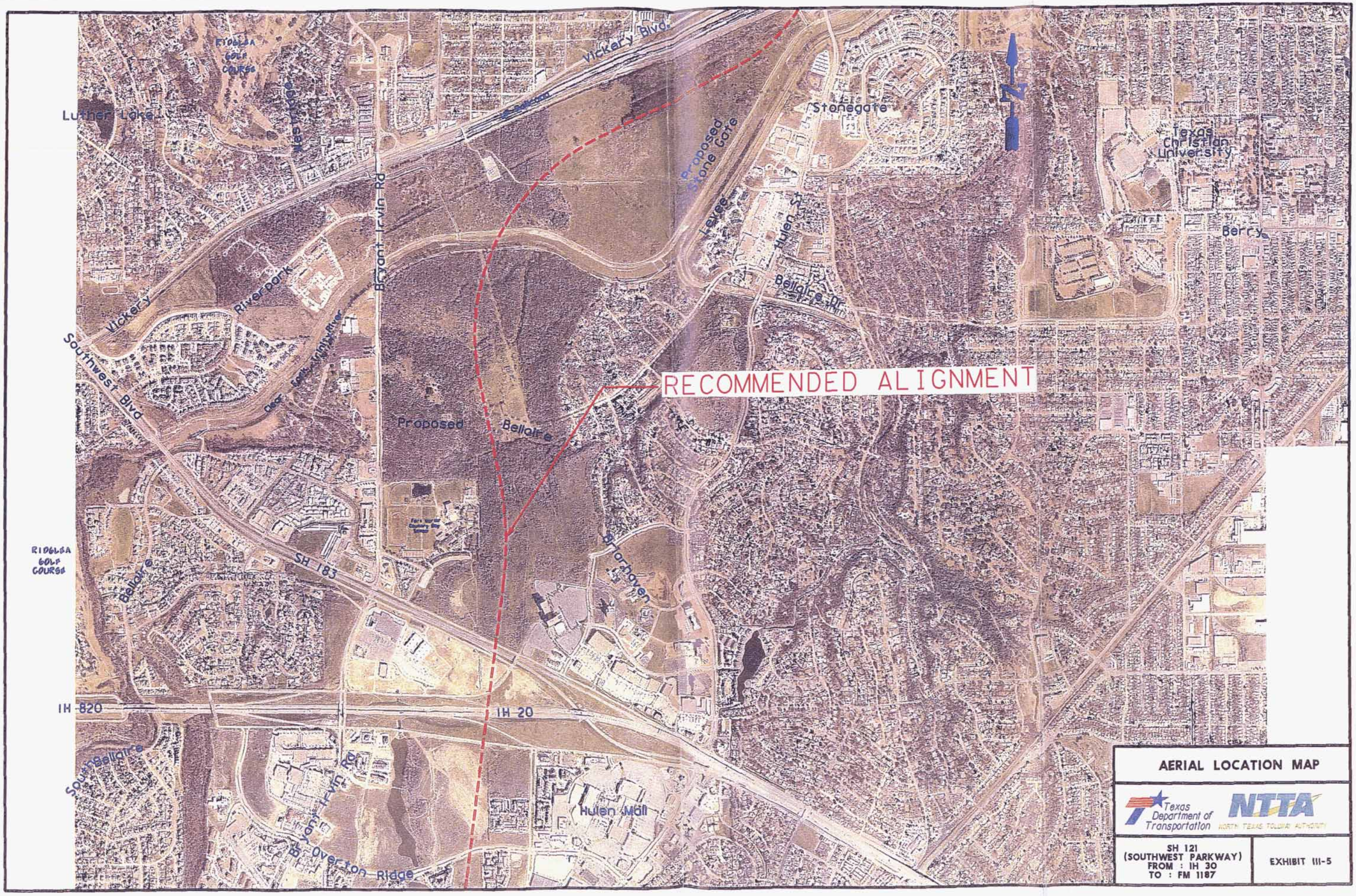

AERIAL LOCATION MAP

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121 (SOUTHWEST PARKWAY) FROM : IH 30 TO : FM 1187

EXHIBIT III-5

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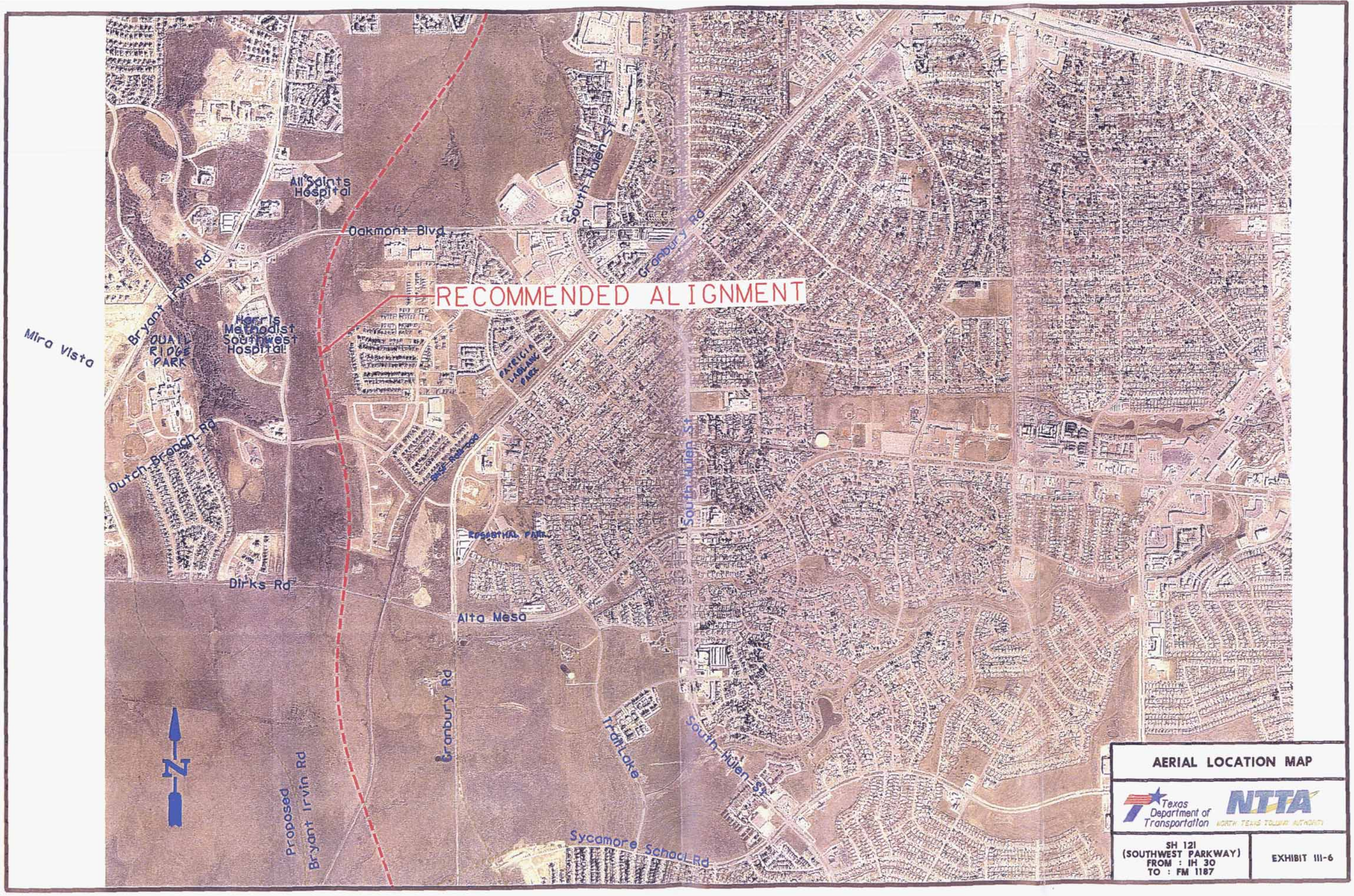

AERIAL LOCATION MAP

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121
(SOUTHWEST PARKWAY)
FROM : IH 30
TO : FM 1187

EXHIBIT III-6

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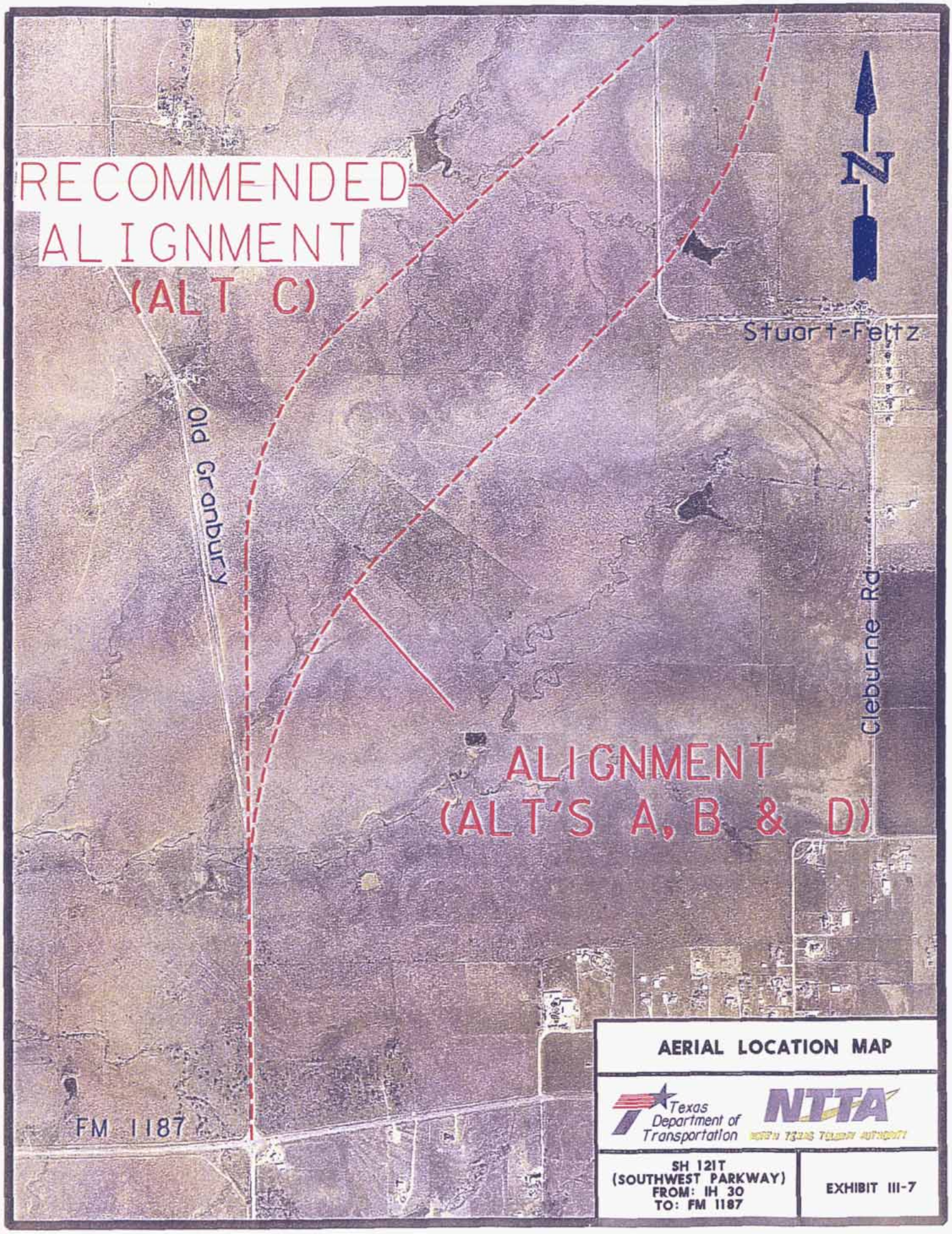

AERIAL LOCATION MAP

Texas Department of Transportation

NTTA North Texas Tollway Authority

SH 121T
(SOUTHWEST PARKWAY)
FROM: IH 30
TO: FM 1187

EXHIBIT III-7

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"121T – Southwest Parkway" Texas Transportation Commission Proposal

In 1993, a delegation from the City of Fort Worth, Tarrant and Johnson Counties and the SH 121 Task Force (composed of local governments, private property owners and State agencies), appeared before the Texas Transportation Commission. Following a favorable response from the Commission to continue planning of the SH 121T project, the "*121T – Southwest Parkway*" study was completed in July 1995. The purpose of the study was to evaluate ways to reduce the project's high cost by recommending design changes and/or alternative financing methods.

The study recommended continued development of TxDOT's proposed alignment, with only minor modifications through Johnson County and downtown Fort Worth. No feasible alignment alternatives could be identified for the section between IH 30 and FM 1187. The Task Force resolved that further study of previously identified routes was not considered reasonable, practical or cost-effective. Also, relocation of the proposed alignment would violate cooperative development efforts between transportation planners and residential/commercial developers on both sides of the proposed highway corridor. Therefore, the route location of the proposed action has remained relatively unchanged since that time.

Further Alternative Development

In October 1994 a detailed feasibility study was commissioned by the Fort Worth City Council to investigate the development of SH 121T as a tollroad. The feasibility study attempted to reduce construction costs of the project by minimizing frontage roads and grade-separated intersections as well as realigning the route location within Johnson County and through downtown Fort Worth. After completion of a detailed tollroad traffic and revenue study in December 1997, it was recommended that work continue to develop the facility as a tollroad. As the plan development progressed, a public meeting was held jointly by the NTTA and TxDOT on June 4, 1998 in order to present Alternative D and to discuss the alignment and preliminary environmental issues related to the project.

The further development of alternatives subsequent to the June 1998 public meeting is presented in Chapter I-Project History. The integral stages of the development process are summarized below.

In December 1998 the Fort Worth City Council endorsed the continued development of the project and passed a resolution appointing the CAC. Through a series of public meetings and by coordinating with the TxDOT/NTTA design team, the CAC presented recommendations that led to the development of Alternative B. This alternative reduced the overall size of the SH 121T/IH 30 interchange, but retained the SH 121T direct connections to and from Forest Park Boulevard.

Unsatisfied with certain aspects of Alternative B, the City of Fort Worth assembled the PRT to investigate the SH 121T/IH 30 interchange plan and to recommend improvements and/or additional alternatives. Having made the decision to pursue further study of the PRT's recommendations, the City of Fort Worth formed the PDT to oversee the performance of the study. After six months of evaluation and public involvement, the PDT recommended Alternative A as its preferred alternative and presented Alternative A to the Fort Worth City Council in December 2000. The Fort Worth City Council approved the recommended alternative and submitted Alternative A to the TxDOT/NTTA design team for review. The TxDOT/NTTA design team commented that some elements did not meet minimum design criteria, and/or violated standard operational design practice(s) for a facility functionally classified as an urban freeway.

In an effort to further the development of the project, the TxDOT/NTTA design team developed a new alternative, Alternative C, which incorporated plan components from the previous alternatives. Alternative C was developed to accommodate the issues expressed during the PDT evaluation process.

Description of the Build Alternatives

Typical Section

The proposed facility would ultimately be a six/four-lane urban tollroad and would include frontage roads only in those locations where they would be essential to maintain local street circulation and continuity. Based on current traffic projections, the facility would ultimately provide a six-lane section from IH 30 to just south of IH 20, and a four-lane section from this point to the project's terminus at FM 1187.

Initially the facility would be constructed as a four-lane urban tollroad from IH 30 to just south of IH 20 and a two-lane rural highway section from south of IH 20 to the southern terminus, FM 1187. This initial phase of construction would include the acquisition of the ultimate ROW to allow for future widening to the ultimate 6/4-lane section. South of IH 20 the two-lane rural highway section would serve as the interim facility until such time that funding becomes available to construct the ultimate four-lane tollway section.

Horizontal/Vertical Alignment

Due to the lengthy development of the project, and subsequent land use patterns that have evolved, the proposed Build alternatives are essentially confined to the same horizontal alignment with the vertical profile varying among the alternatives. In addition to vertical profile modification there are various locations where different plan concepts have been proposed depending on the alternative. These plan concepts, for the most part, are limited to variances in the typical section and variances in the plan of several of the proposed interchanges located along the project. These design concepts were proposed by different agencies or studies. As such, four distinct Build alternatives were identifiable based on an agency or study recommendation. Thus, although the proposed alternatives share the same alignment, the varying design concepts have established independent alternatives identified by the design team and have been presented to the public as Alternatives A, B, C and D. Geometric plan elements and aesthetic components from any of the four alternatives can be combined.

As stated, the alternatives share approximately the same horizontal alignment and, therefore, the following alignment description is applicable to all four alternatives: The proposed tollroad project would begin west of Summit Avenue at IH 30 with a tie-in to Forest Park Boulevard. It would proceed west between Vickery Boulevard and the Union Pacific Railroad, crossing under the Hulen Street Bridge and over the Trinity River before proceeding south to the confluence of the SH 183/IH 20 interchange. From this point the alignment would proceed south to its terminus at the intersection of FM 1187 and FM 1902. The route locations of the Build alternatives are depicted on Exhibits III-3 through III-7. Although the Build alternatives generally share the same horizontal alignment, plan concepts particular to each Build alternative affect the width of the typical sections as well as the interchange capabilities between the SH 121T facility and the various existing roadways along the project corridor. As such, the following is a discussion of the four Build alternatives in terms of their typical sections and the interchanges that occur along the proposed alignment. A comparative analysis of interchange options at each affected cross street for all four alternatives is provided below and in Exhibit III-8. Exhibit III-9 illustrates the typical roadway sections for all four alternatives.

Alternative A

This alternative is the product the City of Fort Worth's PDT's Southwest Parkway's Study. The proposed alternative was developed to provide a "park like" facility, and includes design concepts not usually proposed for an urban highway facility. Plan concepts unique to this alternative include; wide median and ROW buffers to enhance aesthetic measures, lowering/recessing/depressing the main lane profile as much as possible and implementing other forms of aesthetic measures such as surface and structural treatments. Connections to future and existing roadways were minimized to address the PDT's perceived idea that this alternative would generate additional traffic on the local roadway network. Both the design speed and posted speed were reduced from 70 mph to 60 mph and 65 mph to 55 mph, respectively.

EXHIBIT III-8

	ALTERNATIVE A "PDT"	ALTERNATIVE B "MODIFIED"	ALTERNATIVE C "COMBINED"	ALTERNATIVE D "ORIGINAL"
I-30	This alternative proposes a three level interchange at IH 30 to accommodate the various connections between SH 121T, IH 30 and Forest Park Blvd. Direct connections provided would include the WB IH 30 to SB SH 121T connection as well as the NB SH 121T to EB IH 30 connection.	This alternative proposes a three level interchange at IH 30 to accommodate the various connections between SH 121T, IH 30 and Forest Park Blvd. Direct connections provided would include the WB IH 30 to SB SH 121T connection as well as the NB SH 121T to EB IH 30 connection.	This alternative proposes a three level interchange at IH 30 to accommodate the various connections between SH 121T, IH 30 and Forest Park Blvd. Direct connections provided would include the WB IH 30 to SB SH 121T connection as well as the NB SH 121T to EB IH 30 connection.	This alternative proposes a three level interchange at IH 30 to accommodate the various connections between SH 121T, IH 30 and Forest Park Blvd. The interchange would provide SH 121T with full directional connections to IH 30 and Forest Park Blvd.
SUMMIT INTERCHANGE	This alternative would begin west of Summit Avenue. An existing WB exit ramp would provide access from IH 30 to Summit. Access would be provided to and from both WB/NB SH 121T as well as WB/EB IH 30. A continuous frontage road would be provided between Summit Avenue and Forest Park Boulevard in both the EB and WB directions. The confluence of SH 121T and IH 30 would underpass Summit Avenue.	An existing WB exit ramp would provide access from IH 30 to Summit and an existing EB entrance ramp would provide access from Summit to EB IH 30. SB SH 121T and WB IH 30 would not be accessible to WB frontage road traffic from Summit. Continuous WB and EB frontage roads would be provided between Summit Avenue and Forest Park Boulevard. Summit Avenue would not be accessed by NB SH 121T. Summit would not be directly accessed by EB IH 30 traffic, but would initially pass through the Forest Park intersection. At Summit Avenue, IH 30 would be an underpass.	An existing WB exit ramp would provide access from IH 30 to Summit and an existing EB entrance ramp would provide access from Summit to EB IH 30. Summit would be directly accessed from NB SH 121T and EB IH 30. The WB entrance ramp from Summit to IH 30 would be removed. Traffic would now pass through the Forest Park intersection before entering WB IH 30.	An existing WB exit ramp would provide access from IH 30 to Summit and an existing EB entrance ramp would provide access from Summit to EB IH 30. SB SH 121T and WB IH 30 would not access WB frontage road traffic from Summit. Continuous WB and EB frontage roads would be provided between Summit Avenue and Forest Park Boulevard. Summit Avenue would not be accessed by NB SH 121T. Summit would not be directly accessed by EB IH 30 traffic, but would initially pass through the Forest Park intersection. At Summit Avenue, IH 30 would be an underpass.
FOREST PARK	Full access to both SH 121T and IH 30 would be provided by this alternative. NB SH 121T to NB Forest Park movement would be provided as a direct connection as well as the SB Forest Park to SB SH 121T connection. Access to and from IH 30 would be provided by a diamond interchange. In order to provide the connections to and from SH 121T an undesirable degree of curve for the proposed design speed would be required. In addition this design would realign Forest Park to eliminate an undesirable curve following the north side of the interchange. This realignment would be located above a former municipal landfill. Both SH 121T and IH 30 would overpass Forest Park.	NB and SB SH 121T movements would be provided access to Forest Park by direct connect (fly-over) ramps. This alternative would not propose the re-alignment of Forest Park. Ramp access would be provided from Forest Park to WB IH 30 and from EB IH 30 to Forest Park. Both SH 121T and IH 30 would overpass Forest Park.	This alternative would provide EB and WB IH-30 ramps to Forest Park Blvd. A WB entrance ramp from Forest Park would be provided, however, EB traffic from Forest Park would pass through the Summit intersection prior to entering EB IH 30. SH 121T would tie into Forest Pak with signalized intersection.	NB and SB SH 121T movements would be provided access to Forest Park by direct connect (fly-over) ramps. This alternative would not propose the re-alignment of Forest Park. Ramp access would be provided from Forest Park to WB IH 30 and from EB IH 30 to Forest Park. Both SH 121T and IH 30 would overpass Forest Park.

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EXHIBIT III-8 (CONTINUED)

UNIVERSITY DRIVE	Access to and from IH 30 would remain unchanged. Access would be provided to and from SH 121T with the exception of the SB SH 121T movement. This movement would be accommodated by the existing IH 30 interchange. SH 121T would overpass University.	SH 121T would overpass University Drive. No change in access to and from IH 30 is proposed. Traffic would be provided ramp access to and from NB SH 121T. Traffic from University Drive would be provided ramp access to SB SH 121T, however no access would be provided for SB SH 121T traffic to University Drive. A continuos EB frontage road would link the proposed Montgomery Street to University Drive	Access to and from IH 30 would remain unchanged. Access would be provided to and from SH 121T with the exception of the SB SH 121T movement. This movement would be accommodated by the existing IH 30 interchange. SH 121T would overpass University.	SH 121T would overpass University Drive. No change in access to and from IH 30 is proposed. Traffic would be provided ramp access to and from NB SH 121T. Traffic from University Drive would be provided ramp access to SB SH 121T, however no access would be provided for SB SH 121T traffic to University Drive. A continuous EB frontage road would link the proposed Montgomery Street to University Ave.
MONTGOMERY BOULEVARD	A new interchange is proposed at SH 121T as well as the proposed realignment of Montgomery Boulevard. The NB SH 121T movement would be provided access to Montgomery as well as access from Montgomery to SH 121T. SH 121T would underpass Montgomery Boulevard.	Montgomery Boulevard is a proposed new location roadway, that SH 121T would underpass. Ramp access is proposed to provide movement from NB SH 121T to Montgomery and from Montgomery to SB SH 121T.	SH 121T would underpass the proposed Montgomery Boulevard.	SH 121T would underpass Montgomery Blvd. Ramp access is proposed to provide movement from NB SH 121T to Montgomery and from Montgomery to SB SH 121T.
HULEN STREET	SH 121T would underpass Hulen and no interchange is proposed. Ramps would not be provided.	SH 121T would underpass Hulen and no interchange is proposed. Ramps would not be provided.	SH 121T would underpass Hulen and no interchange is proposed. Ramps would not be provided.	SH 121T would underpass Hulen and no interchange is proposed.
STONEGATE	Stonegate is a proposed new location arterial intended to serve future traffic demands south of Hulen. A proposed diamond interchange would provide access to and from SH 121T. This alternative proposes SH 121T to underpass Stonegate.	SH 121T would overpass the proposed Stonegate.	SH 121T would overpass the proposed Stonegate.	SH 121T would overpass the proposed Stonegate.
BELLAIRE	Bellaire Drive is a proposed new location arterial intended to serve east/west bound traffic between Hulen and Bryant Irvin Road. SH 121T is proposed as an underpass and there would be no interchange movements between SH 121T and Bellaire.	Bellaire Drive is a proposed new location arterial intended to serve east/west bound traffic between Hulen and Bryant Irvin Road. SH 121T would overpass Bellaire with full access provided by a proposed diamond interchange.	SH 121T is proposed as an underpass with no interchange movements provided between SH 121T and Bellaire.	SH 121T would overpass Bellaire with full access provided by a proposed diamond interchange.
IH 20/SH 183 INTERCHANGE	This interchange would facilitate movements among three urban freeways. Access between IH 20 and SH 121T would be provided. This movement would be provided via the WB SH 183 to NB SH 121T connection. A frontage road network connecting the frontage roads for the three freeways would be provided.	The direct connectors of this interchange would provide movements between SH 121T and two urban freeways. Full access would be provided between IH 20 and SH 121T. A frontage road network connecting the frontage roads for the three freeways would be provided. Between SH 183 and SH 121T, traffic would be	Fully directional interchange.	Fully directional interchange.

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EXHIBIT III-8 (CONTINUED)

	The SB SH 121T movement to EB SH 183 would be provided. Indirect frontage road access between SH 183 and SH 121T would be provided.	provided access from EB SH 183 to SB SH 121T and from NB SH 121T to WB SH 183.		
OVERTON RIDGE	A proposed half-diamond interchange would provide access to and from Overton Ridge. SH 121T would underpass Overton Ridge. The overall interchange grade separation would be lowered.	SH 121T is proposed to overpass Overton Ridge. A proposed diamond interchange would provide access to and from Overton Ridge. Proposed locations for toll plazas would include an entrance ramp from Overton Ridge to SB SH 121T and the exit ramp from NB SH 121T to Overton Ridge.	SH 121T is proposed to overpass Overton Ridge. A proposed diamond interchange will provide access to and from Overton Ridge. Proposed locations for toll plazas would include an entrance ramp from Overton Ridge to SB SH 121T and the exit ramp from NB SH 121T to Overton Ridge.	SH 121T is proposed to overpass Overton Ridge. A proposed diamond interchange would provide access to and from Overton Ridge. Proposed locations for toll plazas would include an entrance ramp from Overton Ridge to SB SH 121T and the exit ramp from NB SH 121T to Overton Ridge.
OAKBEND TRAIL	SH 121T would underpass Oakbend Trail and no interchange or connections are proposed.	SH 121T would underpass Oakbend Trail and no interchange or connections are proposed.	SH 121T would underpass Oakbend Trail and no interchange or connections are proposed.	SH 121T would underpass Oakbend Trail and no interchange or connections are proposed.
OAKMONT BOULEVARD	SH 121T would underpass Oakmont Boulevard, and a proposed diamond interchange would provide access to and from Oakmont. Proposed locations for toll plazas include the entrance ramp from Oakmont to SB SH 121T and the exit ramp from NB SH 121T to Oakmont Boulevard.	SH 121T would underpass Oakmont Boulevard, and a proposed diamond interchange would provide access to and from Oakmont. Proposed locations for toll plazas include the entrance ramp from Oakmont to SB SH 121T and the exit ramp from NB SH 121T to Oakmont Boulevard.	SH 121T would underpass Oakmont Boulevard, and a proposed diamond interchange would provide access to and from Oakmont. Proposed locations for toll plazas include the entrance ramp from Oakmont to SB SH 121T and the exit ramp from NB SH 121T to Oakmont Boulevard.	SH 121T would underpass Oakmont Boulevard, and a proposed diamond interchange would provide access to and from Oakmont. Proposed locations for toll plazas include the entrance ramp from Oakmont to SB SH 121T and the exit ramp from NB SH 121T to Oakmont Boulevard.
DUTCH BRANCH	The profile of Dutch Branch would be lowered and SH 121T would overpass Dutch Branch. No interchange access is proposed.	SH 121T would overpass Dutch Branch with no interchange access proposed. Dutch Branch would remain at grade.	SH 121T would overpass Dutch Branch with no interchange access proposed. Dutch Branch would remain at grade.	SH 121T would overpass Dutch Branch with no interchange access proposed. Dutch Branch would remain at grade.
DIRKS ROAD ALTA MESA	SH 121T would underpass Dirks Road. A NB connection to SH 121T from Dirks road and a SB connection from SH 121T would be provided.	SH 121T is proposed to overpass Dirk's Road. Ramp access would be provided for traffic movements from Dirk's Road to NB SH 121Tand from SB SH 121T to Dirks Road.	SH 121T would underpass Dirks Road. A NB connection to SH 121T from Dirks road and a SB connection from SH 121T would be provided.	SH 121T is proposed to overpass Dirk's Road. Ramp access would be provided for traffic movements from Dirk's Road to NB SH 121Tand from SB SH 121T to Dirks Road.
SYCAMORE SCHOOL ROAD	The proposed Sycamore School Road is an extension of an existing roadway that currently ends east of the proposed interchange. SH 121T would overpass Sycamore School Road with full access provided by a diamond interchange.	The proposed Sycamore School Road is an extension of an existing roadway that currently ends east of the proposed interchange. SH 121T would overpass Sycamore School Road with full access provided by a proposed diamond interchange.	The proposed Sycamore School Road is an extension of an existing roadway that currently ends east of the proposed interchange. SH 121T would overpass Sycamore School Road with full access provided by a diamond interchange.	The proposed Sycamore School Road is an extension of an existing roadway that currently ends east of the proposed interchange. SH 121T would overpass Sycamore School Road with full access provided by a diamond interchange.

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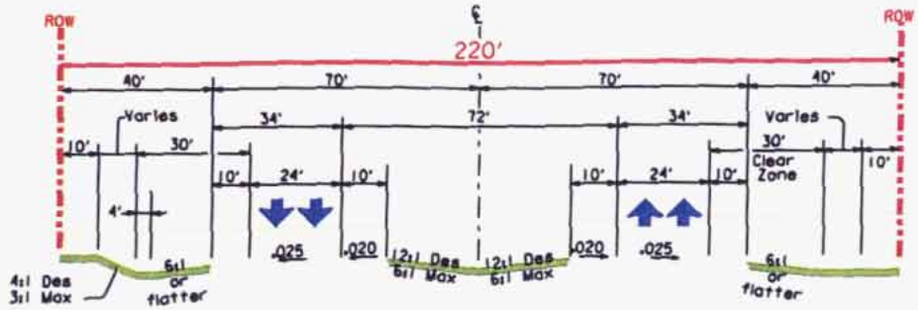
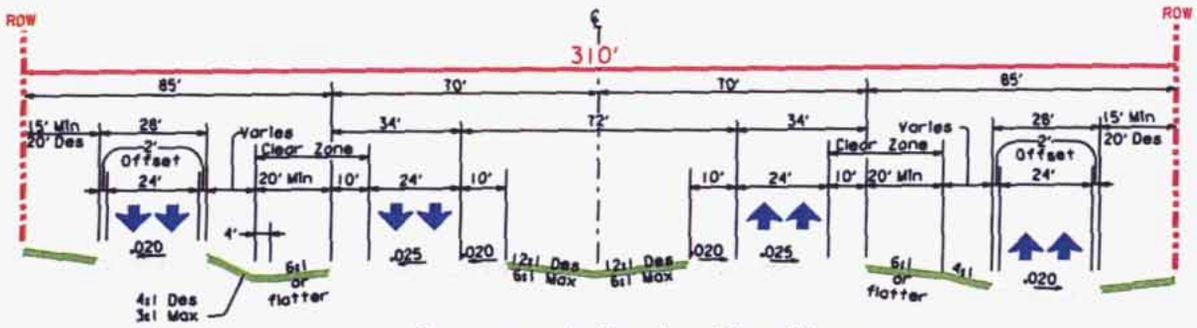
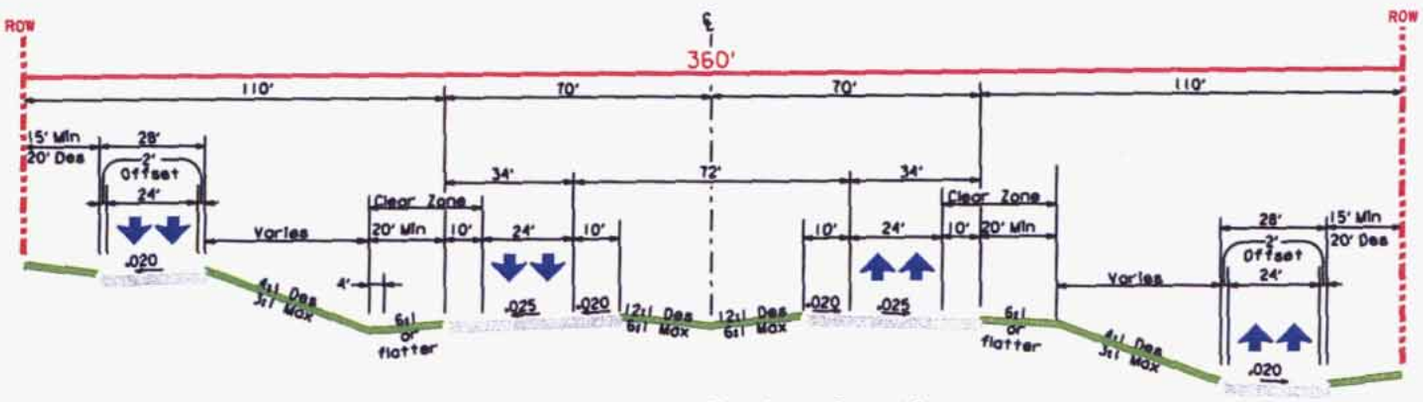


Proposed Typical Section
2 Through Lanes



Proposed Typical Section
2 Through Lanes
with Frontage Roads



Proposed Typical Section
2 Through Lanes
with Frontage Roads
(Interchange Widening)

TYPICAL SECTIONS
ALTERNATIVES B & D

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T (SOUTHWEST PARKWAY) FROM : IH 30 TO : FM 1187	EXHIBIT III-9

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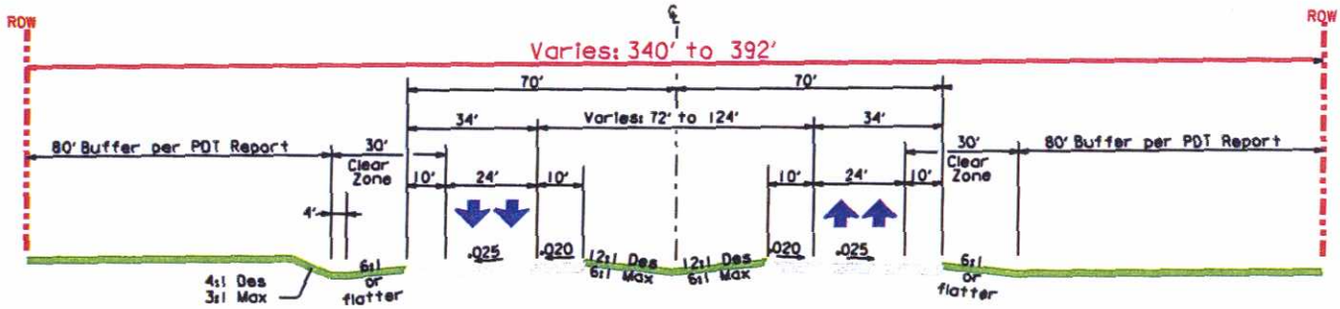
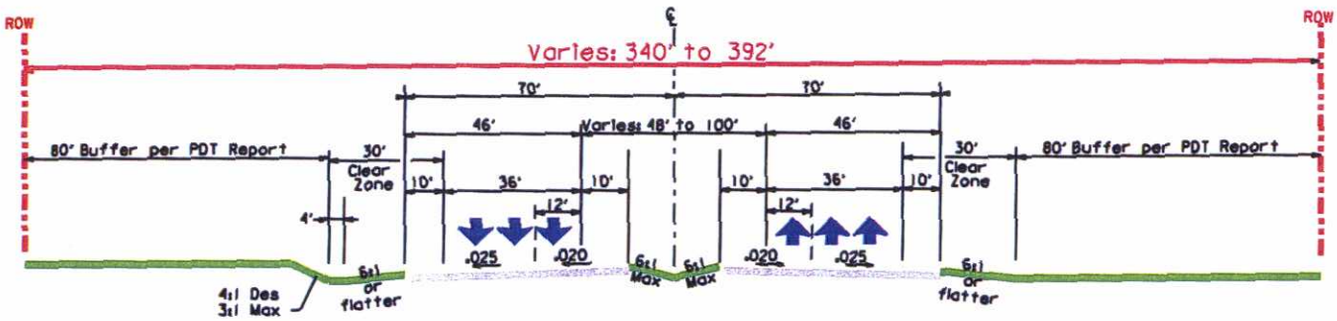


Proposed Typical Section
2 Through Lanes



Future Typical Section
3 Through Lanes

TYPICAL SECTIONS
ALTERNATIVE A & C

Texas Department of Transportation

NTTA
NORTH TEXAS TOLLWAY AUTHORITY

SH 121T (SOUTHWEST PARKWAY) FROM : IH 30 TO : FM 1187	EXHIBIT III-9 CONT.

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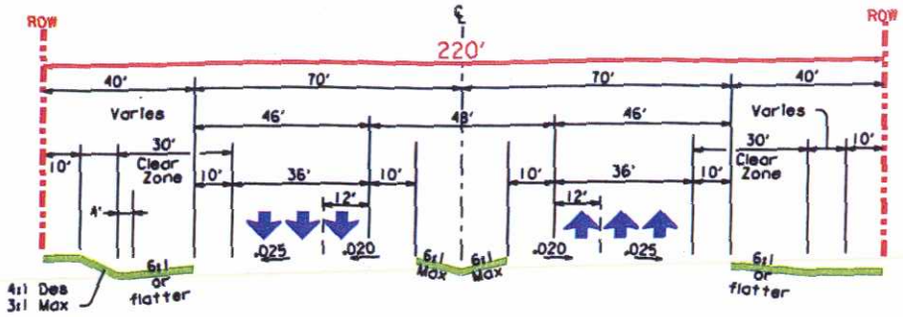
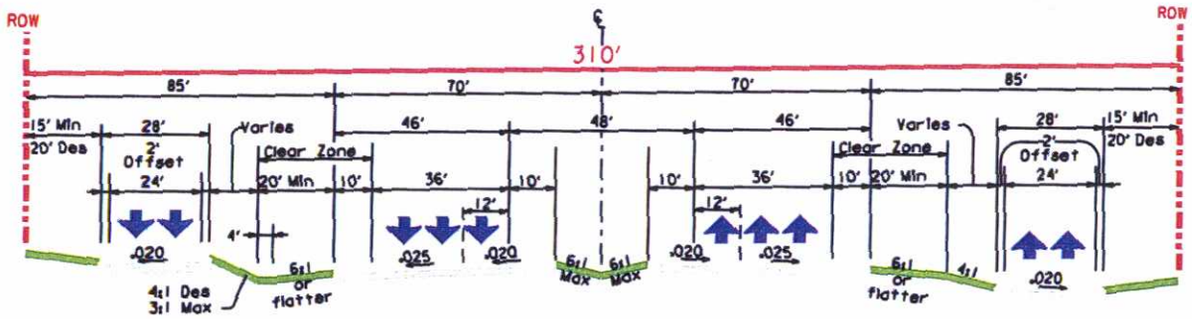
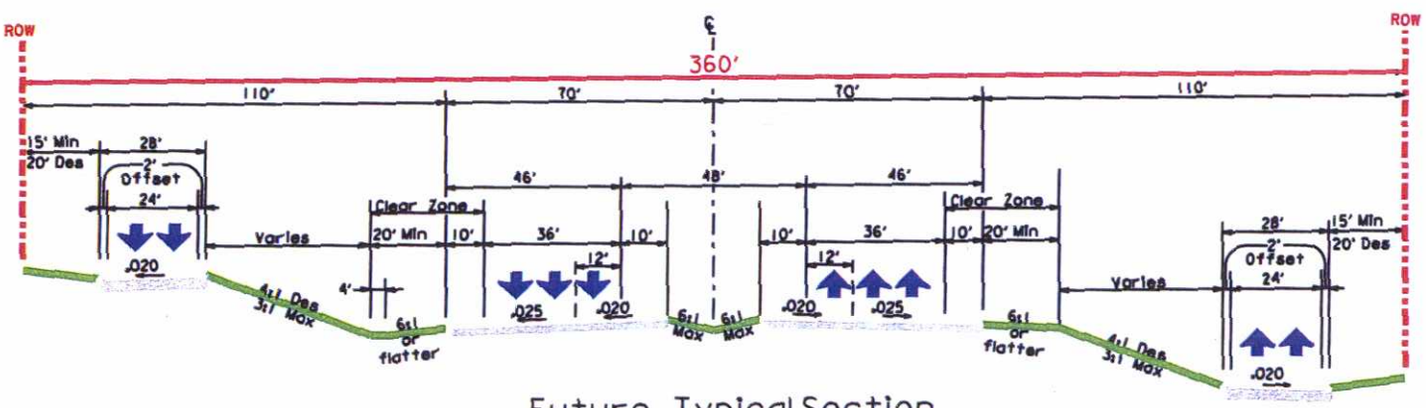


Future Typical Section
3 Through Lanes



Future Typical Section
3 Through Lanes
with Frontage Roads



Future Typical Section
3 Through Lanes
with Frontage Roads
(Interchange Widening)

TYPICAL SECTIONS
ALTERNATIVES B & D

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T (SOUTHWEST PARKWAY) FROM : IH 30 TO : FM 1187	EXHIBIT III-9 CONT.

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Typical section ROW for this alternative varies from 340 ft for the typical main lane section to 392 ft at the interchanges. The typical section of this alternative differs from the other alternatives in two ways. First, a wide median to incorporate aesthetic measures has been proposed. The initial four-lane facility will include a median varying from 72 ft to 124 ft. While the ultimate six-lane facility will provide a median varying from 48 ft to 100 ft. Second, eighty-foot buffers from the outside edge of the clear zone to the proposed ROW were included.

Alternative B

As stated, all the alternatives follow the same basic horizontal alignment. Therefore, Alternative B is similar to Alternative A above. Alternative B is identical to Alternative A with the exception of the Northern terminus at the Forest Park and IH-30 Interchange. The traffic emerging from downtown would have ramp access to both westbound IH 30 and southbound SH 121T. Eastbound IH 30 and northbound SH 121T would be provided ramp access to downtown Fort Worth. A direct connection would link westbound IH 30 traffic to southbound SH 121T and another would link northbound SH 121T traffic to eastbound IH 30. From IH 30 to Hulen Street the Build alternatives would follow along the property line of the existing Union Pacific Railroad Yard. Alternative B would then traverse, for the most part, undeveloped parcels of land from the Hulen Street Bridge to FM 1187.

Alternative C

From the northern terminus, west of Summit Avenue along IH 30 to Hulen Street, Alternative C would follow along the property line of the existing Union Pacific Railroad Yard. Alternative C would then traverse, for the most part, undeveloped parcels of land from the Hulen Street Bridge south to the IH 20 interchange, and continue for the most part, across undeveloped parcels of land from that point to FM 1187. The alignment of Alternative C deviates from the other alternatives. South of McPherson road, the alignment would curve towards the west to a greater degree than the other alignments before heading south and tying into the southern terminus at the intersection of FM 1187 and FM 1902. The deviation in

alignment would occur over a length of approximately 2 mi and is located approximately 2,640 ft further to the west of the other Build alternatives. The recommended alternative for the proposed SH 121T project is Alternative C.

Alternative D

Alternative D would begin just north of IH 30 with a tie-in to Forest Park Boulevard just south of the Lancaster Avenue Bridge. A partial interchange would be provided at IH 30, with direct connections to the proposed SH 121T from the north to the west and from the south to the east as well as direct connections to the alternative from the east to the south and from the west to the north. The proposed alignment would then cross over IH 30 and Forest Park south of IH 30, under the existing Rosedale connectors to IH 30, over University Drive and under the Vickery Boulevard connectors to Rosedale. It would then continue southwest between Vickery Boulevard and the Union Pacific Railroad, crossing under the extension of Montgomery Street and over Hulen Street. Direct access from the alternative to SH 183 would be provided from the south to the west and from the east to the south, with other access via service roads. Full access would be provided between the alternative and IH 20, from the north and south to the east and west. The alternative would then approaches the southern terminus, FM 1187, with a temporary tie-in to the existing FM 1902 at its intersection with FM 1187.

Alternatives A, B, C, and D are plan alternatives within the same basic horizontal alignment. As such, plan elements and aesthetic components could be combined.

Alternative Modes of Transportation

The NCTCOG's Mobility 2020 plan addresses several CMS strategies found to be effective transportation measures for southwest Fort Worth. However, most of these were recommended in conjunction with a freeway/tollway facility serving the same corridor. In addition to these CMS recommendations, a discussion on rail/transit-oriented strategies to reduce congestion on area freeways, and to serve future demand in the areas of southwest Fort Worth, is presented below.

As discussed in Mobility 2025 Plan Update, and in the sections that follow, the option to provide commuter rail service in the study corridor was found to be a legitimate component of the overall transportation system proposed for southwest Fort Worth. As such, each of the following strategies will be considered components of - rather than alternatives to - the overall project objectives. They are not carried further into the alternative evaluation discussions of this document, but will be considered part of the No-build alternative as components of the committed improvements for the region.

Transportation Systems Management/Travel Demand Management (TSM/TDM) Strategies

TSM/TDM strategies utilize the existing transportation system and incorporate features to maximize or increase its efficiency. The project limits include urbanized (Fort Worth) and rural areas. A regional CMS plan, that incorporates various TSM/TDM strategies, was prepared by NCTCOG and has been operational since October 1, 1997. The CMS is a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of traffic to levels that accommodate State and local needs. The regional CMS includes commitments for TDM, TSM, Advanced Transportation Management (ATM), Bicycle/Pedestrian facilities and arterials widening (see Exhibit II-5 for programmed projects in the PSC).

Travel Demand Management

The Regional Employer Trip Reduction Program is one strategy that is being implemented as a transportation control measure. The program involves continued annual operation of the existing program as a public/private cooperative effort between NCTCOG, Dallas Area Rapid Transit (DART) and the Fort Worth Transportation Authority (FWTA). This voluntary program targets the region's large employers, focusing both inside and outside of transit

service areas. The effectiveness of this strategy will be demonstrated by the program's success in reducing single occupant vehicle travel.

Ridesharing programs are key elements of any region's TDM effort. The vanpool program is a strategy aimed at increasing average vehicle occupancy during peak travel periods. It is implemented through public agencies, public/private Transportation Management Associations and/or individual private sector employers. The program targets long work commute trips. Public subsidy, directed to vanpool riders, targets one-to two-year start-up costs.

Park-and-Ride facilities serve as collection areas for persons transferring to higher occupancy vehicles. Strategies for the PSC include: *i)* continued operation of existing Park-and-Ride facilities; *ii)* consideration of candidate future sites; and *iii)* location and design of facilities that are conducive to bus transit, vanpools and carpools.

Transportation Systems Management (TSM)

The various TSM strategies in the PSC are aimed at identifying improvements to new and existing facilities of an operational nature. These include intersection improvements, such as the installation of traffic control devices, traffic channelization, grade separations and addition of turning lanes. Several such projects are currently programmed and included in the TIP. Another strategy that falls under the TSM category is signalization improvements. Programmed projects are included in the TIP, with future projects to include signal optimization, signal upgrades and system interconnection.

Special Events Management

Special events management strategies, such as pre-trip and en-route information dissemination plans, travel demand management and transportation system management, may be used to minimize traffic disruption and enhance mobility before, during and after special events.

Examples of these special events in the general project area include the Southwestern Expo and Livestock Show at the Will Rogers Memorial Coliseum and the Fort Worth Cowtown Marathon and Pioneer Days in the Fort Worth Stockyard District.

Advanced Transportation Management

The ATM program is aimed at reducing delay on the freeway system due to traffic incidents such as crashes or stalled vehicles. An Advanced Traveler Information System (ATIS) is recommended as part of this program to provide real-time information on traffic conditions and travel opportunities throughout the region.

A Tarrant County steering committee has recently completed the Fort Worth Regional Intelligent Transportation System Plan. The traffic monitoring and incident detection/response system currently operates on IH 35W south of IH 30, IH 820 south loop, IH 20 east of IH 35W, SH 360: IH 20 to SH 183, and SH 183 east of SH 360. A Traffic Management Center currently manages this system. Mobility Assistance Patrols service most of the Tarrant County freeway system.

Another recommendation is the Advanced Traffic Management Systems (ATMS). This system promotes the integration of freeways and tollroads, high occupancy vehicle lanes and strategic arterials across jurisdictional lines. Recommendations included in the ATMS include: operation of changeable message signs to divert traffic around traffic incidents; closed circuit television for traffic monitoring; incident verification and clearance; lane control signals for incident management; and automated ramp metering systems to regulate freeway system access during peak travel periods. Many of these services can be, and have been, integrated with the ATIS under the collective title, Intelligent Transportation Systems (ITS). ITS projects will strive for consistency with National ITS Architecture and Structures recommendations (FHWA 1998).

An Advanced Public Transportation System (APTS) is recommended. The aim of this system is to use available technology to enhance transit service, increase the safety of riders and to support greater levels of service to transit riders.

Bicycle & Pedestrian Facilities

In an effort to increase the regional level of bicycle and pedestrian trips, various strategies are recommended for immediate and future implementation. Bicycle and pedestrian facilities are generally developed to serve commuter trips of less than 5 mi in length, especially in high-density areas and along congested travel corridors.

In order to facilitate off-street bike commuter travel and pedestrian access, the Veloweb Project, a proposed interconnected system of paved routes with signing and grade separated crossings to facilitate bicycle commuter travel was presented in Mobility 2025 Plan Update. The Veloweb is essentially a series of small roads designated for use by fast-moving bicyclists. Primary considerations of the Veloweb include:

- Markings and travel speeds to meet minimum safety standards (proposed design speed of 25 mph).
- Long-lasting impervious pavement surface.
- Grade-separated crossings of roadways with significant traffic and traffic circle intersections with minor roadways.
- Limited signalized or stop sign intersections.
- Easy access from roadways and to common trip destinations.

In addition to the Veloweb, other recommendations to create a safer environment for bicycle commuting were presented. An on-street bicycle and pedestrian access program, that involves the widening of outside lanes on arterial streets, was presented. Also proposed, was a system of improvements intended to promote bicycle commuting as a more viable mode of travel. Examples of such improvements might include signed on-and-off street routes, bicycle parking in

front of retail and business centers, bicycle storage facilities and various other amenities for commuters. Central Fort Worth is a candidate area for future implementation and development assistance for bicycle commuting. A greater emphasis on the planning of pedestrian facilities across the region serving major activity and transit centers is also recommended, particularly in combination with additional or proposed light rail, commuter rail, and high occupancy vehicle lanes.

Arterial improvements were identified in *Mobility 2025 Plan Update,* and are scheduled for development in conjunction with the TIP. These improvements would augment the Build alternative, but would have insufficient capacity to serve as a replacement for the proposed SH 121T.

Rail/Transit-Oriented Strategies

The transit component of the *Mobility 2025 Plan Update* includes local bus, express bus, commuter rail, light rail and rail technologies yet to be determined. The discussion of this alternative is based solely on *Mobility 2025 Plan Update's* analysis of current conditions, discussion of the various alternatives that were identified for evaluation and the results of this evaluation.

To provide a baseline, with which all of the *Mobility 2025 Plan Update* alternatives could be compared, a future year committed network was developed. The components of this system include the Trinity Railway Express Commuter Rail Line from Dallas to Fort Worth with a peak headway of 10 minutes and an off peak head-way of 50 minutes. A network of local and express buses designed to serve the two transit authority service areas and the rail system was also included. Freeway, arterial and high occupancy vehicle (HOV) lane assumptions were held constant for all of the transit forecasts.

All transit forecasts developed for *Mobility 2025 Plan Update* used the same baseline fare assumptions, based on current fare structures for both DART and FWTA. A fare structure for the Trinity Railway Express was based on the anticipated travel distance. Forecasts were then simulated using the year 2025 demographic scenario. Possible rail alternatives for the Metroplex were identified based on previous system planning work, completed major investment studies and information obtained from the Regional Commuter Rail Feasibility Study (NCTCOG, 1995). The focus was mainly on the evaluation of rail alternatives with the bus system serving as a background feeder system.

A series of 10 different rail forecasts were developed to use in the evaluation and identifications of recommendations for Mobility 2025 Plan Update. Mobility 2020 rail equity warrants were used to review Mobility 2025 Plan Update rail forecasts.

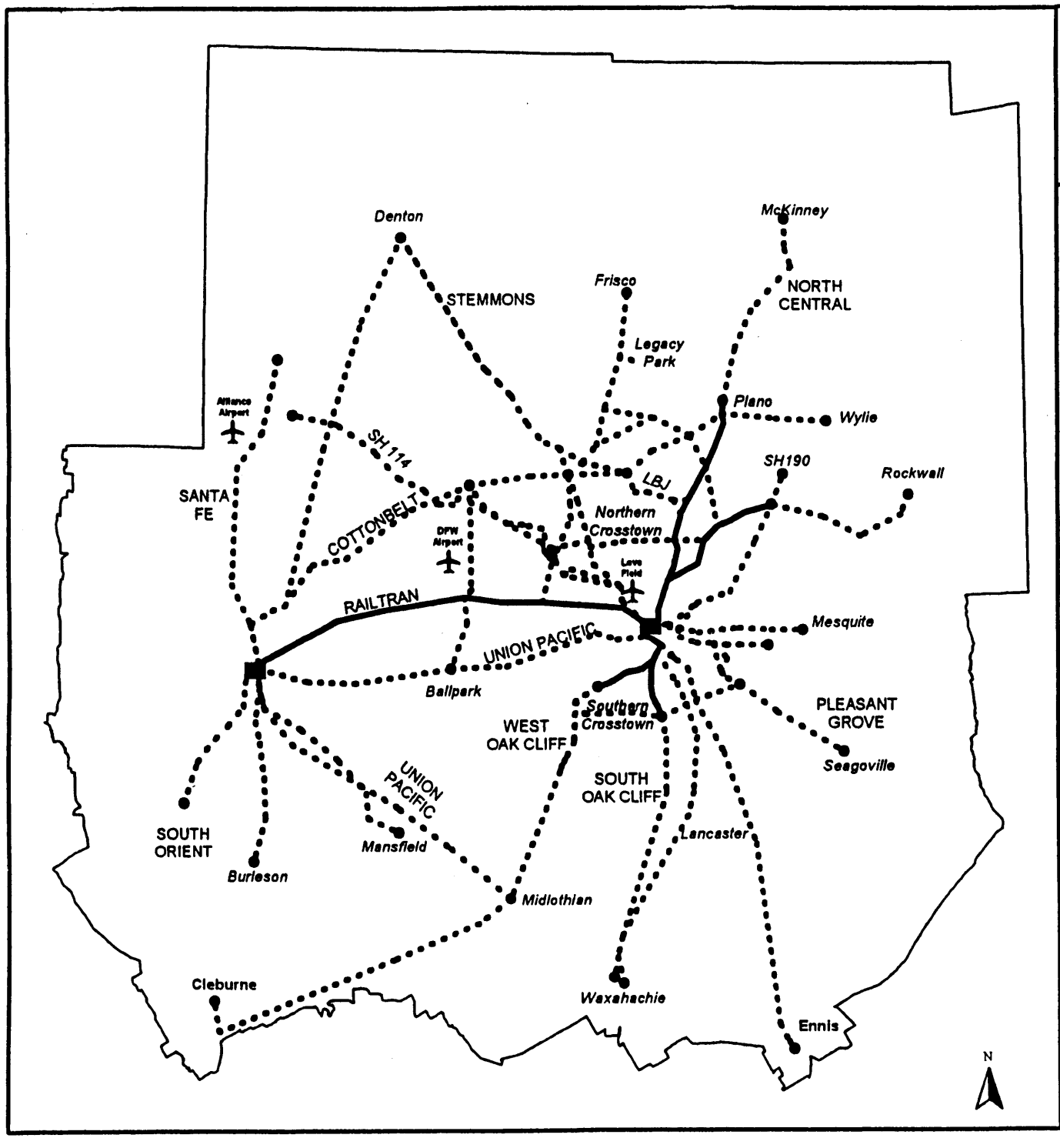
Exhibit III-10 shows the full range of corridors that were identified as alternative rail options for analysis. In cases where the rail corridors had no interaction with one another, such as the extension of rail into southwest Fort Worth, the rail options were simulated in the same alternative. The South Orient rail component in Fort Worth, that would serve the SH 121T PSC, is analyzed as a commuter rail system in the forecasts.

The evaluation of various rail forecasts to determine those sections of the rail alternatives that might be warranted was based on a set of rail system warrants. The rail capital cost per mile was compared with the per mile cost of reconstructing a freeway and the per lane person carrying capacity of a freeway, to result in the daily rail passenger warrants. Due to the realization that the *Mobility 2020* warrants were high in comparison with the actual ridership that was observed on the existing DART rail system, a set of "rail equity warrants" were developed to account for this discrepancy.

Projected ridership for segmented links of the rail systems in each of the 16 forecast simulations was obtained for the year 2020. Exhibit III-11 is a transit projection list intended to demonstrate

MOBILITY 2025

RAIL ALTERNATIVES



LEGEND

RAIL ALTERNATIVES

COMMITTED RAIL

EXHIBIT III-10

MOBILITY 2025

All existing railroad rights-of-way should be monitored for potential future transportation corridors.

New facility locations indicate transportation needs and do not represent specific alignments.

North Central Texas Council of Governments Tranportation

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MOBILITY 2025 RAIL ALTERNATIVES

ALTERNATIVE	LINES	TYPE	DESCRIPTION
PROGRAMMED SYSTEM (PROGRM25)	TRINITY RAILWAY EXPRESS	CRT	FORT WORTH T&P TO UNION STATION
	STEMMONS	CRT	NORTH CARROLLTON TO DALLAS CBD
	MANANA	CRT	N. IRVING TC TO DALLAS CBD
	NORTH CENTRAL	LRT	PLANO TO DALLAS CBD
	NORTHEAST	LRT	ROWLETT TO DALLAS CBD
	PLEASANT GROVE	LRT	BUCKNER TO DALLAS CBD
	SOUTH OAK CLIFF	LRT	CAMP WISDOM TO DALLAS CBD
	WEST OAK CLIFF	LRT	WESTMORELAND TO DALLAS CBD
ALTERNATIVE 1	PROGRAMMED SYSTEM	LRT, CRT	COMMITTED
	SOUTH ORIENT	CRT	OLD GRANBURY RD TO FORT WORTH T&P
	SPECIAL EVENTS	CRT	TX MOTOR SPEEDWAY TO FORT WORTH T&P
	SANTA FE	CRT	DENTON TO FORT WORTH T&P
	STEMMONS	CRT	DENTON TO DALLAS CBD
	BURLINGTON NORTHERN	CRT	FRISCO TO S. IRVING TC
	NORTHEAST TARRANT/COTTONBELT	CRT	FORT WORTH T&P TO ROWLETT
	NORTH CROSSTOWN	CRT	DFW NORTH TO SH190 TO LBJ
	NORTH CROSSTOWN	CRT	DFW NORTH/ FRISCO/LBJ
	LBJ	LRT	STEMMONS TO NORTH CENTRAL
	NORTH CENTRAL	LRT	PROGRAMMED EXTENDED TO MCKINNEY
	NORTHEAST	LRT	PROGRAMMED EXTENDED TO ROCKWALL
	SH190	LRT	SH190 TO DALLAS CBD
	SCYENE BRANCH	LRT	MESQUITE TO DALLAS CBD
	PLEASANT GROVE	LRT	PROGRAMMED EXTENDED TO SEAGOVILLE
	SP	CRT	ENNIS TO DALLAS CBD
	SOUTH OAK CLIFF	LRT, CRT	PROGRAMMED EXTENDED TO WAXAHACHIE
	WEST OAK CLIFF	LRT, CRT	PROGRAMMED EXTENDED TO MIDLOTHIAN/CLEBURNE
	UNION PACIFIC	CRT	FORT WORTH T&P TO UNION STATION
	UNION PACIFIC	CRT	MIDLOTHIAN TO FORT WORTH T&P
	SH114	LRT	DFW NORTH TO LOVE FIELD AP
	NORTHERN CROSSTOWN	LRT	N. IRVING TC TO NORTHEAST
	SOUTHERN CROSSTOWN	LRT	LOOP 12 TO ELAM ROAD
	DOROTHY SPUR	CRT	CENTERPORT/TRE TO UNION PACIFIC
	DFW CIRCULATOR	LRT	NORTH DFW AP TO CENTERPORT/TRE
	FORT WORTH TROLLEY	LRT	FORT WORTH CBD TO FORT WORTH CBD
	MCKINNEY AVENUE TROLLEY	LRT	DALLAS CBD TO DALLAS CBD
ALTERNATIVE 2	PROGRAMMED SYSTEM	LRT, CRT	COMMITTED
	SOUTH ORIENT	CRT	WEDGEMONT CIR TO FORT WORTH T&P
	STEMMONS	CRT	DENTON TO LEWISVILLE
	STEMMONS	LRT	LEWISVILLE TO DALLAS CBD
	BURLINGTON NORTHERN	CRT	FRISCO TO S. IRVING TC
	NORTHEAST TARRANT/COTTONBELT	CRT	FORT WORTH T&P TO DFW NORTH
	NORTH CROSSTOWN	CRT	DFW NORTH TO NORTH CENTRAL
	NORTH CROSSTOWN	CRT	DFW NORTH TO LEGACY TO LBJ
	LBJ	LRT	STEMMONS TO DALLAS CBD
	NORTH CENTRAL	LRT	PROGRAMMED EXTENDED TO ALLEN
	NORTHEAST	LRT	PROGRAMMED EXTENDED TO ROWLETT
	PLEASANT GROVE	LRT	PROGRAMMED EXTENDED TO IH20
	SP	CRT	HUTCHINSON TO DALLAS CBD
	UNION PACIFIC	CRT	WAXAHACHIE TO DALLAS CBD
	WEST OAK CLIFF	LRT,CRT	PROGRAMMED EXTENDED TO MIDLOTHIAN
	UNION PACIFIC	CRT	MANSFIELD TO FORT WORTH T&P
	SH114	LRT	DFW NORTH TO LOVE FIELD AP
	NORTHERN CROSSTOWN	LRT	STEMMONS TO NORTHEAST
	DOROTHY SPUR	CRT	CENTERPORT/TRE TO DIVISION
	DFW CIRCULATOR	LRT	NORTH DFW AP TO CENTERPORT/TRE
	FORT WORTH TROLLEY	LRT	FORT WORTH CBD TO FORT WORTH CBD
	MCKINNEY AVENUE TROLLEY	LRT	DALLAS CBD TO DALLAS CBD

EXHIBIT III-11

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ALTERNATIVE 3	PROGRAMMED SYSTEM	LRT, CRT	COMMITTED
	SOUTH ORIENT	CRT	WEDGEMONT CIR TO FORT WORTH T&P
	STEMMONS	LRT	DENTON TO DALLAS CBD
	BURLINGTON NORTHERN	CRT	FRISCO TO S. IRVING TC
	NORTHEAST TARRANT/COTTONBELT	CRT	FORT WORTH T&P TO DFW NORTH
	NORTH CROSSTOWN	CRT	DFW NORTH TO LEGACY TO LBJ
	LBJ	LRT	STEMMONS TO DALLAS CBD
	NORTH CENTRAL	LRT	PROGRAMMED EXTENDED TO MCKINNEY
	NORTHEAST	LRT	PROGRAMMED EXTENDED TO ROWLETT
	SCYENE BRANCH	LRT	MESQUITE TO DALLAS CBD
	UNION PACIFIC	CRT	LANCASTER TO DALLAS CBD
	WEST OAK CLIFF	LRT	PROGRAMMED EXTENDED TO DUNCANVILLE
	UNION PACIFIC	CRT	LOOP12 TO UNION STATION
	SH114	LRT	DFW NORTH TO LOVE FIELD AP
	DOROTHY SPUR	CRT	CENTERPORT/TRE TO DIVISION
	DFW CIRCULATOR	LRT	NORTH DFW AP TO CENTERPORT/TRE
	FORT WORTH TROLLEY	LRT	FORT WORTH CBD TO FORT WORTH CBD
	MCKINNEY AVENUE TROLLEY	LRT	DALLAS CBD TO DALLAS CBD
ALTERNATIVE 4	PROGRAMMED SYSTEM	LRT, CRT	COMMITTED
	SOUTH ORIENT	CRT	WEDGEMONT CIR TO FORT WORTH T&P
	STEMMONS	LRT	DENTON TO DALLAS CBD
	BURLINGTON NORTHERN	CRT	LBJ/LEG/S.IRVING TC
	NORTHEAST TARRANT/COTTONBELT	CRT	FORT WORTH T&P TO ADDISON TC
	LBJ	LRT	ADDISON TC TO DALLAS CBD
	NORTHEAST	LRT	PROGRAMMED EXTENDED TO ROCKWALL
	WEST OAK CLIFF	LRT	PROGRAMMED EXTENDED TO DUNCANVILLE
	UNION PACIFIC	CRT	FORT WORTH T&P TO UNION STATION
	SH114	LRT	ALLIANCE AP TO DFW AP TO MANANA
	DOROTHY SPUR	CRT	CENTERPORT/TRE TO DIVISION
	DFW CIRCULATOR	LRT	NORTH DFW AP TO CENTERPORT/TRE
	FORT WORTH TROLLEY	LRT	FORT WORTH CBD TO FORT WORTH CBD
	MCKINNEY AVENUE TROLLEY	LRT	DALLAS CBD TO DALLAS CBD
ALTERNATIVE 6	PROGRAMMED SYSTEM	LRT, CRT	COMMITTED
	SOUTH ORIENT	CRT	WEDGEMONT CIR TO FORT WORTH T&P
	STEMMONS	CRT	DENTON TO BELT LINE
	STEMMONS	LRT	BELT LINE TO DALLAS CBD
	BURLINGTON NORTHERN	CRT	COTTONBELT/ LEG/ S. IRVING TC
	NORTHEAST TARRANT/COTTONBELT	CRT	FORT WORTH T&P TO DFW NORTH
	NORTH CROSSTOWN	CRT	DFW NORTH TO ADDISON TC
	LBJ	LRT	ADDISON TC TO DALLAS CBD
	WEST OAK CLIFF	LRT	PROGRAMMED EXTENDED TO DUNCANVILLE
	UNION PACIFIC	CRT	FORT WORTH T&P TO UNION STATION
	SH114	LRT	DFW AP TO DFW AP TO MANANA
	DOROTHY SPUR	CRT	CENTERPORT/TRE TO UNION PACIFIC
	DFW CIRCULATOR	LRT	NORTH DFW AP TO CENTERPORT/TRE
	FORT WORTH TROLLEY	LRT	FORT WORTH CBD TO FORT WORTH CBD
	MCKINNEY AVENUE TROLLEY	LRT	DALLAS CBD TO DALLAS CBD
ALTERNATIVE 8	PROGRAMMED SYSTEM	LRT, CRT	COMMITTED
	SOUTH ORIENT	CRT	WEDGEMONT CIR TO FORT WORTH T&P
	STEMMONS	CRT	DENTON TO FRANKFORD
	STEMMONS	LRT	FRANKFORD TO DALLAS CBD
	BURLINGTON NORTHERN	CRT	LBJ/LEG/BELTLINE/S.IRVING TC
	NORTHEAST TARRANT/COTTONBELT	CRT	FORT WORTH T&P TO DFW NORTH
	NORTH CROSSTOWN	CRT	DFW NORTH TO ADDISON TC
	LBJ	LRT	ADDISON TC TO DALLAS CBD
	WEST OAK CLIFF	LRT	PROGRAMMED EXTENDED TO DUNCANVILLE
	UNION PACIFIC	CRT	FORT WORTH T&P TO UNION STATION
	MANANA	LRT	STEMMONS TO NORTH IRVING TC
	DOROTHY SPUR	CRT	CENTERPORT/TRE TO UNION PACIFIC
	DFW CIRCULATOR	LRT	NORTH DFW AP TO CENTERPORT/TRE
	FORT WORTH TROLLEY	LRT	FORT WORTH CBD TO FORT WORTH CBD
	MCKINNEY AVENUE TROLLEY	LRT	DALLAS CBD TO DALLAS CBD

EXHIBIT III-11 (Continued)

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ALTERNATIVE 9	PROGRAMMED SYSTEM	LRT, CRT	COMMITTED
	SOUTH ORIENT	CRT	WEDGEMONT CIR TO FORT WORTH T&P
	STEMMONS	CRT	DENTON TO FRANKFORD
	STEMMONS	LRT	FRANKFORD TO DALLAS CBD
	BURLINGTON NORTHERN	CRT	LBJ/LEG/BELTLINE/S.IRVING TC
	NORTHEAST TARRANT/COTTONBELT	CRT	FORT WORTH T&P TO DFW NORTH
	NORTH CROSSTOWN	CRT	DFW NORTH TO ADDISON TC
	LBJ	LRT	ADDISON TC TO DALLAS CBD
	WEST OAK CLIFF	LRT	PROGRAMMED EXTENDED TO DUNCANVILLE
	UNION PACIFIC	CRT	FORT WORTH T&P TO UNION STATION
	SH114	LRT	DFW AP TO DALLAS CBD
	DOROTHY SPUR	CRT	CENTERPORT/TRE TO UNION PACIFIC
	DFW CIRCULATOR	LRT	NORTH DFW AP TO CENTERPORT/TRE
	FORT WORTH TROLLEY	LRT	FORT WORTH CBD TO FORT WORTH CBD
	MCKINNEY AVENUE TROLLEY	LRT	DALLAS CBD TO DALLAS CBD
ALTERNATIVE 10	PROGRAMMED SYSTEM	LRT, CRT	COMMITTED
	SOUTH ORIENT	CRT	WEDGEMONT CIR TO FORT WORTH T&P
	STEMMONS	CRT	DENTON TO FRANKFORD
	STEMMONS	LRT	FRANKFORD TO DALLAS CBD
	BURLINGTON NORTHERN	CRT	LBJ/LEG/BELTLINE/S.IRVING TC
	NORTHEAST TARRANT/COTTONBELT	CRT	FORT WORTH T&P TO DFW NORTH
	NORTH CROSSTOWN	CRT	DFW NORTH TO ADDISON TC
	LBJ	LRT	ADDISON TC TO DALLAS CBD
	WEST OAK CLIFF	LRT	PROGRAMMED EXTENDED TO DUNCANVILLE
	UNION PACIFIC	CRT	FORT WORTH T&P TO UNION STATION
	SH114	LRT	DFW AP TO DALLAS CBD
	DOROTHY SPUR	CRT	CENTERPORT/TRE TO UNION PACIFIC
	DFW CIRCULATOR	LRT	NORTH DFW AP TO CENTERPORT/TRE
	FORT WORTH TROLLEY	LRT	FORT WORTH CBD TO FORT WORTH CBD
	MCKINNEY AVENUE TROLLEY	LRT	DALLAS CBD TO DALLAS CBD

EXHIBIT III-11 (Continued)

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output relevant to southwest Fort Worth. Based on these forecasts, recommendations were made that included the recommendation to form a "Tarrant Rail Evaluation Task Force" to evaluate the engineering feasibility and environmental implications of commuter rail service along Cottonbelt, from DFW International Airport through the Fort Worth CBD to the South Orient line in southwest Fort Worth.

Preliminary Screening of Alternatives

The following is a comparative analysis of the Build (toll facility) and the No-build alternatives. The benefits and costs of each were screened in terms of their affect on overall mobility, environmental impacts, cost of ROW and construction as well as time required for implementation. The results are depicted in Table III-4.

TABLE III-4

COMPARATIVE ANALYSIS OF FEASIBLE ALTERNATIVES

	No-build	**Build (Toll Facility)**
Mobility	• No improvement to traffic capacity. • Fails to provide adequate service and access for area residents. • Increases congestion on existing freeways and other major arterials. • Fails to provide adequate access for emergency vehicles, such as fire, police and ambulance services.	• Provides a major link in the regional freeway network. • Improves access to major regional airports and employment centers. • Provides a needed alternate relief route for other congested freeways and arterials in the study area. • Offers travel-time savings.
Environmental Impacts	• Requires no displacements or use of land for additional ROW. • Has no impact on vegetation or wildlife habitat. • Fails to provide for efficient traffic flow, a necessary condition for reduced air pollution due to carbon monoxide.	• Requires some displacements and additional ROW, though not as substantial as required under the freeway alternative. • Impacts to possible historic structures. • Short-term air, noise and possible water pollution impacts during construction. • Increased noise levels in the corridor. • Improved air quality in the long term.
Cost	• No associated construction cost, and minimal maintenance costs.	• Estimated costs: Phase I - $230 million Phase II - $60 million (ROW cost, approx. $35 million)
Time to Implement	• No implementation time required	• 5-10 years

Alternative Evaluation Process

As demonstrated in the preceding sections, the identification of a preferred route alignment from among the alternatives proposed was the result of an interactive process. A thorough evaluation of each alternative was performed at each level of study. Further evaluation of the Build/No-build alternatives is presented in Chapter V. The recommended alternative is based on the findings in this chapter; however, a final decision will not be made until a public hearing is held and all interested parties have had an opportunity to comment. A total of 20 environmental, socioeconomic and engineering feasibility factors were included as part of the list of selection criteria for recommending an alternative. The ability of each of the alternatives to meet these criteria, both individually and in total, was instrumental in the selection process. The selection criterion by title and explanation of each are as follows:

- Socioeconomic Selection Criteria
  1. Land Use Impacts. Positive and negative impacts upon existing land use, planned future land use and potential for accelerating changes.
  2. Community Cohesion Impacts. Instances where the new limited access roadway might split an existing neighborhood or might act as a barrier between two neighborhoods where none previously existed.
  3. Environmental Justice Impacts. Impacts on specific social groups such as the elderly, handicapped, minority, economically depressed or transit-dependent.
  4. Traffic and Transportation Impacts. Potential for serving as a planned, vital link or element in the local and regional transportation system, as well as potential impacts on pedestrian and bicycle uses.
  5. Publicly Owned Property and Public Services Impacts. Potential for improving or degrading safety, vehicle mobility and emergency response time, access to public property/schools/ hospitals and to non-interchange roads and streets. Impacts upon existing utilities (water, sewer, telephone, electrical distribution or transmission lines, pipelines, etc.) that would be required to be moved, re-routed, re-constructed or protected.

6. Recreational Facilities Impacts. Any requirement for taking land from publicly-owned parks, recreation areas, or wildlife and waterfowl refuges of National, State, or local significance, or any land from historic or archeological sites of National, State, or local significance, in accordance with 23 USC. §138 (Section 4{f}).
7. Relocation Impacts. The numbers and types of displacees (residences, businesses, etc.) likely to be caused by construction of SH 121T. Includes consideration as to whether the ROW to be acquired is developed or not, and if developed, the intensity and quality of developments, and necessary displacements.
8. Economic Impacts. Includes construction costs, ROW costs, probable relocation costs, and long-term maintenance/operation costs. Potential for both positive and negative impacts upon short and long-term public and private economic activity in the PSC.
9. Noise Impacts. Impacts of noise levels in the PSC, in accordance with FHWA Noise Abatement Criteria (NAC) and 23 CFR §772.
10. Aesthetic Value Impacts. Impacts upon the aesthetic quality and identity of the environment caused by the construction of SH 121T.
11. Public Safety Impacts. Impacts upon the safety of the traveling public caused by the construction of the SH 121T.
12. Historical and Archeological Impacts. Impacts on archeological and historic resources in accordance with the National Historic Preservation Act (NHPA), the Archeological and Historic Preservation Act (AHPA), the Archeological Resource Protection Act (ARPA), the Texas Antiquities Code, and 36 CFR § 800.

- Natural Environmental Selection Criteria
  1. Soils and Geology Impacts. Impacts on and taking of prime and/or unique farmlands as defined by the Farmland Protection Policy Act (FPPA), 7 CFR §§ 4201-4209, 658. Temporary impacts due to construction activities while building the roadway.
  2. Air Quality Impacts. Impacts on the air quality of the PSC, pursuant to the NAAQS and 23 CFR § 770.

3. Groundwater Impacts. Probable impact of the facility on streams, drainage channels, wetlands, surface water supplies, etc., as the result of construction and operation of the roadway. Impacts upon floodplains and Regulatory Floodway Zones and the probable necessity for USACE Section 404 permits and USCG navigational clearance permits.
4. Vegetation and Wildlife Impacts. Impacts upon the flora and fauna, habitats and possibly threatened or endangered species in the PSC.
5. Hazardous Materials Impacts. Impacts on potential or known hazardous waste sites.

- Engineering Selection Criteria
  1. ROW. Amount of new ROW required, including expansion of existing road right-of-way and new ROW through open land.
  2. Geometry/Design. Includes, in addition to ROW requirements and environmental constraints:
     Û Physical constraints (water, topography, railroad and highway crossings, etc.)
     Û Design speed.
     Û Required cross section, grading, etc.
  3. Traffic Operation. Includes LOS, merge/diverge and weaving movements, traffic control devices, convenience and driver safety.

Length, Cost and ROW Acreage Among Alternatives

As previously discussed in Chapter II, the option to construct this facility as a freeway was rejected after years of study indicated the cost was going to be prohibitively high. The most current estimates for the *freeway* alternative indicate a proposed ROW requirement of approximately 1,084 acres and a total cost of $750 million for the entire 32-mile facility from IH 35W to US 67 (including construction and ROW).

Preliminary ROW and cost estimates for the proposed *toll* facility were prepared in conjunction with the schematic plan for the project. The total project length from IH 30 to FM 1187 is 15.1 mi, which would include an 8.4-mile turnpike section and a 6.7-mile non-toll facility. Total ROW

acreage required for this facility is 635 acres, at a cost of approximately $35 million. The total cost for the ultimate facility (6 lanes from IH 30 to Alta Mesa Boulevard, 4 lanes from Alta Mesa Boulevard to FM 1187), construction and ROW included, is approximately $290 million. Costs associated with the No-build alternative would include routine maintenance and minor reconstruction activities on existing facilities, in addition to various CMS actions identified by NCTCOG.

Traffic Operation Comparison Among Alternatives.

Traffic forecasts for the proposed toll facility are based on the volume of traffic that would be diverted from existing parallel routes in the travel corridor, plus induced traffic resulting from the implementation of the facility itself. The travel demand analysis for the proposed facility made use of the model developed by NCTCOG, created to provide the maximum level of zone and link detail within the PSC. The model was based on demographic data developed from the 1990 Census and the 2000 census where available.

A crucial element in the development of traffic and toll revenue estimates is an analysis of the sensitivity of potential users to pay the recommended tolls for use of the facility. A report published by the NTTA in December 1997 entitled, "*Traffic and Revenue Study: Proposed Southwest Parkway*", established an optimum toll rate and corresponding traffic projections for the purpose of obtaining bond financing for the proposed facility. Further evaluation of traffic estimates by NCTCOG resulted in the use of less conservative projections for plan and analysis purposes. The plan and environmental impact analysis of the project was based on traffic projections assuming a $1.00 toll, whereby the toll rate is held constant over time with no adjustments for inflation.

Analysis of the No-build condition involved careful consideration of future demographics in the PSC. Population, household and employment demographic data in the SH 121T study area, were developed through a regional process. It is important to note here that the NCTCOG Performance District-level allocations used in the EMPAL (Employment Allocation Model)

Demographics in the S.H. 121/Southwest Parkway Corridor

District	Area (Sq. Miles)	1970	1980	1990	2000	2010	2020	1990
Households								
PERF 1	1.75			899	958	1,013	1,039	
PERF 5	37.15			47,849	50,628	53,373	55,333	
PERF 7	293.84			26,368	30,718	34,142	39,122	
PERF 13	66.78			32,453	38,838	45,153	51,324	
PERF 5 + 13	103.93	50,967	61,038	80,302	89,466	98,526	106,657	80,302
RIS Districts	72.39	48,616	58,223					76,598
Metro Area	4,980			1,408,859	1,676,784	1,989,994	2,282,593	
Population (in households)								
PERF 1				1,572	1,645	1,701	1,706	
PERF 5				115,772	118,327	120,306	121,001	
PERF 7				74,523	84 695	90,559	100,674	
PERF 13				81,803	96,131	107,024	118,683	
PERF 5 + 13		147,824	153,085	197,575	214,458	227,330	239,684	197,575
RIS Districts		141,883	146,932					189,634
Metro Area				3,710,659	4,315,097	4,942,763	5,542,414	
Total Employment								
PERF 1				46,838	51,162	56,069	58,092	
PERF 5				80,422	104,043	126,638	139,810	
PERF 7				25,018	31,129	36,829	44,197	
PERF 13				14,573	19,248	23,580	30,796	
PERF 5 + 13		60,847	78,878	94,995	123,291	150,218	170,606	94,995
RIS Districts		57,863	75,009					90,336
Metro Area				2,106,768	2,618,641	3,158,529	3,770,087	

SOURCE: North Central Texas Council of Governments

EXHIBIT III-12

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and Disaggregated Residential Allocation Model (DRAM) for Year 2020 projections, were based on the same NCTCOG Performance District-to-District travel time assumptions used for the 2010 allocations and are supplemented with 2025 projections. These travel times were derived from the output of the Dallas-Fort Worth Regional Travel Model (DFWRTM), in which the modeled network represented the "Existing and Committed 2010" network. Within the PSC, this included SH 121T as a frontage road only, from just south of IH 30 to Alta Mesa Boulevard. Therefore, the following comparative analysis of Build versus No-build traffic operations does not assume any affect on demographic growth based on the existence of a facility such as that which is proposed.

Previously, NCTCOG's Mobility 2020 performance districts depicted certain demographic trends for the 104 square-mile area within the SH 121T PSC. When compared to similar data for the entire Metroplex, the following results were observed:

- From 1990 to 2020, the Metroplex increases 62 percent in households, 49 percent in population and 79 percent in employment.
- From 1990 to 2020, the corridor increases 33 percent in households, 21 percent in population and 80 percent in employment.
- The corridor share of the Metroplex households was 5.7 percent in 1990 and 4.7 percent in 2020. For population, the shares were 5.3 percent in 1990 and 4.3 percent in 2020.
- The corridor share of the Metropolitan Area employment was 4.5 percent in both 1990 and 2020.

Thus, a general observation was made that the demographics for the SH 121T corridor were relatively conservative. The rate of growth in population and households was slower than that for the entire Metropolitan Area, while the rate of growth in employment was similar to the rate for the entire Metropolitan Area. (Note, Exhibit III-12 includes demographic data from 1970 to 2020 to illustrate the general trends in growth). Recent data from Mobility 2025 Plan Update indicates that growth for the region continues as illustrated in Table III-5 below.

TABLE III-5

2025 REGIONAL DEMOGRAPHICS

Regional Demographics	1999	2025
Population	4,535,962	6,671,237
Total Employment	2,690,903	3,907,346

Population = 47.07% growth Employment = 45.21% growth

Recent data with 2025 projections also indicate that a similar rise in population, households and employment will take place for the SH 121T PSC—identified as corresponding NCTCOG 2000 Demographic Forecast Districts 225-227, 229, 231, 233, and 241.

TABLE III-6

PROJECTED POPULATION GROWTH 2025

District	POP 1995	POP 2025	POP Growth	% Growth
225.0	15,300	24,050	8,750	57.20%
226.0	25,100	27,700	2,600	10.40%
227.0	14,200	19,250	5,050	35.60%
229.0	3,150	11,950	8,800	279.30%
231.0	11,350	11,400	50	0.40%
233.0	5,750	11,850	6,100	106%
241.0	10,550	14,350	3,800	36%
Total	**85,400**	**120,550**	**35,150**	**41.20%**

(Derived from NCTCOG 2000 Demographic Forecast, Research and Information Services)

TABLE III-7

PROJECTED HOUSEHOLD GROWTH 2025

District	Hhold 1995	HHold 2025	HH Growth	% Growth
225.0	8,200	13,700	5,500	67%
226.0	9,850	11,250	1,400	14.20%
227.0	5,050	7,550	2,500	49.50%
229.0	1,250	4,500	3,250	260%
231.0	4,800	5,000	200	4.20%
233.0	3,100	6,350	3,250	104.80%
241.0	5,250	6,850	1,600	30.50%
Total	**37,500**	**55,200**	**17,700**	**47.20%**

(Derived from NCTCOG 2000 Demographic Forecast, Research and Information Services)

TABLE III-8

PROJECTED EMPLOYMENT GROWTH 2025

District	Employment 1995	Employment 2025	Employment Growth	% Growth
225.0	6,150	10,700	4,550	74%
226.0	4,800	8,300	3,500	73%
227.0	1,150	3,750	2,600	226.10%
229.0	200	1,800	1,600	800%
231.0	7,200	12,250	5,050	70.10%
233.0	4,700	8,150	3,450	73.40%
241.0	20,150	22,300	2,150	10.70%
Total	**44,350**	**67,250**	**22,900**	**51.60%**

(Derived from NCTCOG 2000 Demographic Forecast, Research and Information Services)

Exhibit III-13 briefly describes three alternatives as delineated by NCTCOG. For example, Alternative BYB indicates the assumptions made include design Alternative B (B) with the Bellaire interchange (Y) and the SH 183/Bellaire ramp revisions of Alternative B (B). Exhibit III-14 illustrates the projected effect on various performance measures of selecting the No-build verses the Build scenarios. The scenarios presented in the exhibit depict the SH 121T corridor as represented by Subarea, compared to the entire NCTCOG area represented as Regional.

The impact on the existing network of freeways, arterials and collectors in the PSC can be measured in terms of the percentage of lane miles in that particular Performance District operating at a LOS D, E or F. In comparing *Percent Lane Miles* at LOS D, E or F for the Subarea between the No-build, 'interim' Build and the ultimate build-out scenarios, the following was found:

- Under the No-build alternative, 64.2% of the network in the Subarea would operate at poor LOS D, E or F.
- The difference between the No-build and Build alternatives would show a change in LOS of 12.09% to 13.0% for the Subarea, indicating an improvement in LOS for the PSC.

Average travel speed is represented by the average speed of the traffic streams traveling in both directions over a section of highway. With a reduction in the *Percent Lane Miles* at LOS D, E or

F there is an improvement in the average speed throughout the network. In comparing the average speeds for the Subarea, between the No-build, and Build, the following was found:

- Average speeds for the Subarea with the No-build alternative would be 29.45 mph.
- The difference between the No-build and the Build scenarios would be an improvement of 4.31 mph to 4.08 mph.

Based upon the numbers for average speed, it was found that the average speed would improve overall between the No-build and the Build alternatives.

Percent Vehicle Hours of Delay, represents the average delay of all motorists in a platoon, expressed as a percentage of the total travel time on a given section of highway. Delay is considered to have occurred if motorists are traveling behind a platoon leader at headways less than 5 seconds and at speeds less than their desired speed. Comparing the *Percent Vehicle Hours of Delay* for the Subarea between the No-build and the Build scenarios, the following was found:

- The No-build alternative would cause 40.31% vehicle hours of delay in the Subarea.
- The difference between the No-build and the Build scenarios would be a reduction in vehicle hours of delay of between 6.37% and 6.78%.

EXHIBIT III-13

SH 121 - SOUTHWEST PARKWAY
2025 FINAL ALTERNATIVE ANALYSIS

	ASSUMPTIONS	ALTERNATIVE		
		BYB	ANA	CNA
	Design			
A	A1-R1		X	
B	C&B Modified	X		
C	Combo of A1-R1 and Modified			X
	Bellaire Interchange			
Y	Yes	X		
N	No		X	X
	SH183 / Bellaire Ramp Revisions			
A	A1-R1		X	X
B	C&B Modified	X		
C	Combo of A1-R1 and Modified			
	Hulen ramp deletions	YES	YES	YES
	Arterial Improvements			
	Additional arterials near Belliare Interchange	YES	YES	YES
	Speed Limits			
	55 mph (IH30 - Altamesa Blvd)	YES	YES	YES
	60 mph (Altamesa Blvd - US67)	YES	YES	YES

Source: North Central Texas Council of Governments

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EXHIBIT III-14

SH121 - Southwest Parkway
2025 Roadway Performance Summary

Subarea

Performance Measures	No Build	* BYB	* ANA	* CNA
Vehicle Hours of Traffic Control Delay	35,653	32,674	32,742	32,733
Vehicle Hours of Congestion Delay	115,523	80,907	82,777	82,601
Total Vehicle Hours of Delay	151,176	113,581	115,519	115,334
Percent Vehicle Hours of Delay	40.31	33.94	34.35	34.29
Average Loaded Speeds	29.45	33.76	33.53	33.58
Vehicle Miles of Travel	11,044,231	11,299,116	11,276,815	11,294,039
Percent Lane Miles of Level of Service D, E, & F	64.20	52.11	51.20	51.42

Regional

Performance Measures	No Build	* BYB	*ANA	* CNA
Vehicle Hours of Traffic Control Delay	213,599	211,731	210,245	210,494
Vehicle Hours of Congestion Delay	2,585,911	2,529,712	2,530,457	2,536,066
Total Vehicle Hours of Delay	2,799,510	2,741,443	2,740,702	2,746,560
Percent Vehicle Hours of Delay	49.16	48.74	48.72	48.76
Average Loaded Speeds	29.25	29.54	29.55	29.52
Vehicle Miles of Travel	166,550,592	166,156,688	166,222,128	166,246,208
Percent Lane Miles of Level of Service D, E, & F	64.46	62.32	62.39	62.32

Regional Demographics	1999	2025
Population	4,535,962	6,671,237
Total Employment	2,690,903	3,907,346

**See Exhibit III-13 for explanation of alternatives.*

Source: North Central Texas Council of Governments

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TABLE III-9

TIME-DISTANCE COMPARISONS DURING PEAK-PERIOD

Proposed 121 Toll Road (IH 30 to Alta Mesa Boulevard)

Typical Destination Points	Facility Used	Distance Miles (km)	Time (minutes)	Average Speed mph (km/hr)
Fort Worth CBD (IH 30 and IH 35W)	121-T	12.7 (20.4)	13.2	58 (93)
And				
Southwest Fort Worth (Granbury Rd. and Columbus Trail)	Existing Route (1)	13.6 (21.9)	20.7	39 (63)
Fort Worth CBD	121-T	12.7 (20.4)	13.8	55 (88)
And				
Benbrook (US 377 and Lakeside Drive)	Existing Route (2)	12.0 (19.3)	18.5	39 (63)
Fort Worth CBD	121-T	10.5 (16.9)	10.4	61 (98)
And				
Southwest Fort Worth (Bryant Irvin Road and Oakmont Boulevard)	Existing Route (3)	13.2 (21.2)	15.8	50 (80)
Fort Worth CBD	121-T	10.5 (16.9)	10.4	61 (98)
And				
Southwest Fort Worth (Bryant Irvin Road and Oakmont Boulevard)	Existing Route (4)	11.4 (18.3)	15.2	45 (72)

(1) Existing routes via IH 35W and Frontage Roads, Sycamore School Road, and Columbus Trail
(2) Existing routes via IH 30 and US 377
(3) Existing routes via IH 35W, IH 20 and Bryant Irvin Road
(4) Existing routes via IH 30 and Bryant Irvin Road

Source: Traffic and Revenue Study – Proposed Southwest Parkway (1997)

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Travel Time-Distance Comparisons

As part of the 1997 *Traffic and Revenue Study*, an analysis of estimated travel time and distance comparisons for various typical movements was completed. The *Traffic and Revenue Study* analysis was based upon a proposed facility that begins at the interchange of IH 30 with IH 35W and terminates at US 67 near Cleburne. Table III-9 represents the comparison of four different routes throughout the PSC (within the limits of IH 30 and FM 1187) of time and distance. The table indicates that although SH 121T would not offer the shortest route in each case, it would allow for higher travel speeds; therefore, the shortest time duration between various points of origin and destination. Each comparison uses a logical route between trip termini that first includes the SH 121T project route and then takes a logical existing highway route that does not use the SH 121T project. Given these comparisons, it was determined that the proposed SH 121T, if constructed, would provide the typical user an average travel distance savings of 1 to 3 mi, and an average travel time savings of 5 to 10 minutes. Project routes that use SH 121T to the greatest extent possible (minimizing travel on the local arterial routes), would provide the greatest degree of travel distance and time savings for typical users of the SH 121T facility.

Freeway Alternative

This alternative would involve the construction of a multi-lane controlled access highway. The description provided below was obtained from reports and environmental documents developed prior to the reconsideration and ultimate rejection of this alternative because it would not serve the stated purpose of this project.

Note that the freeway route alignment was established for the section from IH 20 to the southern terminus, US 67, following approval of a DEIS and subsequent presentation of the preferred alternative at a public hearing held on January 21, 1993. At this hearing, the public received the project with little opposition. Although a formal consensus was not reached for the northern section, i.e., from IH 20 to IH 35W, there was significant opposition to the west,

or "Red", alternative and almost unanimous support for the proposed "Green" alternative (see Exhibit I-3).

The ultimate freeway alternative would extend from IH 35W at the existing terminus of SH 121 (Airport Freeway) to a southern terminus at US 67 in Johnson County. The ultimate facility would vary from four to six lanes with continuous frontage roads (except at railroad crossings) south of IH 20, and eight lanes from IH 20 to IH 30 with frontage roads only in those locations where they would be essential to maintain local street circulation and continuity. At major intersecting roads and thoroughfares, railroads, rivers and floodplains and some exit/entrance ramps or direct connectors it would be grade separated. Major interchanges would be at IH 20 and SH 183; IH 30 (extending from Summit Street on the east to Ashland Street on the west); at SH 199, from the south end of the bridge over the West Fork Trinity River to the north end of the bridge over the Clear Fork Trinity River; and at IH 35W and the existing SH 121. Several significant portions of the alternative would be elevated in the more densely developed areas.

The entire length of the alternative would be approximately 32 mi. The ROW width would be 460 ft nominal and would require acquisition of approximately 1,084 acres of ROW. The estimated cost for the above described freeway alternative would be approximately $750 million.

Though found to be technically feasible, the ultimate freeway was eliminated as a viable alternative because it would not expedite construction of the facility through alternate means of financing.

Tollroad Alternative

The project has been postponed on several occasions due to changes in the alignment, changes in the City's downtown development (the Cultural District) and changes in legislation.

However, the overriding reason for the postponement of the SH 121T project has been the lack of funding.

Recently, the NTTA has taken the project under consideration as a tollroad; a fundable alternative due to the lack of public funds and the high estimated construction costs necessary to build a free facility. During the history of this project, a series of alternative evaluation studies have been presented, evaluated and recommended for continued study or elimination from further consideration. This has resulted in the identification of a single Build alternative that is both reasonable and feasible that meets the project's stated purpose and need. The No-build alternative has been retained in this document for the purpose of comparison. Further evaluation of alternatives, therefore, will refer to these remaining options.

The Build alternative involves the construction of a multi-lane controlled access tollroad, with plans for phased construction as traffic demand and demographic trends dictate. The first phase of this alternative proposes the construction of a portion of the alignment from IH 30 to IH 20 as a 4-lane toll facility named State Highway 121-T, or Southwest Parkway. South of IH 20, the facility would be a 2-lane non-tolled facility. The proposed toll configuration is the result of a detailed traffic and revenue study, in which various combinations of two configuration alternatives were considered. A four-lane, limited-access, grade-separated toll facility from IH 30 to a point just north of SH 183, transitioning into two tolled lanes north of the SH 183 junction with the southern terminus (i.e., either Alta Mesa Boulevard or Overton Ridge Boulevard) was one configuration. The second configuration considered a 4-lane toll facility from IH 30 to the southern terminus.

The total length of the tollroad, as proposed, is 8.4 mi, with an additional 6.7 mi of State Highway. Locations of toll collection booths, roadway grade-separations/access points, and service roads are still under consideration. Proposed ROW widths would vary from 220 ft in places without frontage roads to 360 ft at interchanges. Where frontage roads are provided, a 310 ft ROW width

is proposed. Because the DEIS is concerned with the worst-case scenario, the analysis covers the 360 ft maximum width of the project.

Based on the results of the *Traffic and Toll Revenue Study* (December 1997), an optimum toll rate of $1.00 for use of the tollroad is proposed. Also based on this study, the 4-lane alternative from IH 30 to the southern terminus, Alta Mesa Boulevard, was selected as the preferred configuration.

Major interchanges that are proposed in conjunction with this project include a partial interchange at IH 30 as well as fully directional interchanges at SH 183 and IH 20. Additionally, diamond interchanges would be provided at Montgomery Street, the proposed Stone Gate extension, Bellaire Drive, Overton Ridge Boulevard, Oakmont Boulevard, Dirks Road, Sycamore School Road and McPherson Road. Partial diamond interchanges are proposed at Hulen Street, Montgomery Street and University Drive.

IV. AFFECTED ENVIRONMENT

Description of Project Area

Social and Economic Environment

Population

The Dallas-Fort Worth Consolidated Metropolitan Statistical Area (CMSA), in which the PSC is located, has grown dramatically since 1990. According to the United States Bureau of the Census and the NCTCOG, the combined population of Tarrant and Dallas Counties grew from 3,022,913 in 1990 to 3,665,118 in the year 2000. NCTCOG 2025 projections for these same counties are 2,012,600 and 2,587,100 respectively, resulting in a total population of 4,599,700. Mobility 2025 Plan Update: The Metropolitan Transportation Plan reports that the metropolitan area's population is growing at an approximate annual rate of 1.76 percent, which is higher than the national average growth.

TABLE IV-1

POPULATION DATA WITHIN THE PROPOSED SH 121T CORRIDOR

Forecast District*	Name	1990	2010	2020	2025
225	Fort Worth	13,535	19,250	23,290	24,000
229	Fort Worth/Benbrook	2,764	2,888	3,024	11,950
231	Fort Worth	10,967	11,358	11,349	11,550
233	Fort Worth/Benbrook	5,327	6,464	7,215	11,900

**Forecast District: aggregation of census tracts used in the DRAM/EMPAL© computer models used in the demographic forecasting process.*
Source: NCTCOG, Research and Information Services.

According to the *2000 Census of Housing and Population, North Central Texas Counties by Census Tract* prepared by the NCTCOG, Caucasians are the predominant ethnic group in Tarrant County, representing 71 percent of the total population. African-Americans represent 13 percent, American Indians 0.5 percent, Asians and Hawaiian 4 percent; 9 percent are

classified as not belonging to any particular ethnic group and 2.5 percent constitute persons who are of more than one race. Persons of Hispanic origin, which can be of any of the above-mentioned ethnic groups, represent 20 percent of the total County population. The City of Fort Worth's demographic profile, as developed by the NCTCOG using 2000 Census data, indicates that; Caucasians represent 60 percent, African-Americans represent 20 percent, American Indians represent 0.6 percent, Asians/Pacific Islanders represent 2.7 percent, others classified as not belonging to any particular racial group represent 14 percent and persons who are more than one race represent 2.7 percent. Citywide, Hispanics or Latinos of any race compose 30 percent. The proposed project is located within ten census tracts, mapped and designated by the US Department of Commerce, Census Bureau (Census 2000) as 1019.00, 1028.00, 1053.00, 1054.05, 1109.03, 1055.06, 1055.08, 1055.10, 1110.09, 1110.10. Within the PSC, as a percentage of total population, the 2000 Census indicated that Caucasians represent 79.3 percent, African-Americans represent 10 percent, American Indians represent 0.5 percent, Asian/Pacific Islander represent 3.6 percent, others represent 4.5 percent and persons who are of two or more races represent 2.1 percent. Within the PSC census tracts, Hispanics represent 10.5 percent of the total population. The ethnic compositions within the PSC per census tract are summarized in Table IV-2.

TABLE 1V-2 ETHNIC COMPOSITION BY CENSUS TRACT

Census Tract	Caucasian	African-American	American Indian	Asian/ Pacific Islander	Other	Two or More Races	Hispanic (All Races)
1019.00	961	47	2	18	42	14	89
%	88.7	4.3	0.2	1.7	3.9	1.3	8.2
1028.00	1,129	74	4	4	38	22	81
%	88.8	5.8	0.3	0.3	3.0	1.7	6.4
1053.00	433	27	17	6	354	48	672
%	48.9	3.1	1.9	0.7	40.0	5.4	75.9
1054.05	3,384	411	14	102	119	94	329
%	82.1	10.0	0.3	2.5	2.9	2.3	8.0
1109.03	1,592	62	3	76	25	13	66
%	89.9	3.5	0.2	4.3	1.4	0.7	3.7
1055.06	3,855	547	29	180	282	105	582
%	77.1	10.9	0.6	3.6	5.6	2.1	11.6
1055.08	3,721	634	29	209	235	109	502
%	75.4	12.8	0.6	4.2	4.8	2.2	10.2
1055.10	2,482	789	25	240	96	90	329
%	66.7	21.2	0.7	6.5	2.6	2.4	8.8
1110.09	2,745	130	11	134	32	60	171
%	88.2	4.2	0.4	4.3	1.0	1.9	5.5
1110.010	1,309	15	3	3	2	22	51
%	96.7	1.1	0.2	0.2	0.1	1.6	3.8

Employment

According to the Texas Comptroller of Public Accounts *Dallas-Fort Worth Metropolitan Area Profile* report, Fort Worth's employment growth rates between July 1991 and July 1995 in the services, trade, construction and manufacturing industries exceeded the State's rate of increase. The economy in the area has steadily improved since 1991, adding approximately 60,000 new jobs. Since July 1991, the services sector in Fort Worth has increased its employment contribution by approximately 25,000 jobs. Services account for 26 percent of

the metropolitan area total number of jobs. In the trades sector, wholesale and retail industries represent 26 percent of the City's workforce. From July 1994 to July 1995, 7,500 new jobs occurred in the trades sector. This change represented the largest job increase in the Fort Worth economy for that time period. Following a downfall in the manufacturing market, this sector increased its workforce by 4,200 jobs between July 1994 and July 1995. Fort Worth's construction industry has generated 5,350 new jobs since 1991, resulting in a 25 percent increase in its workforce. Local government jobs increased by 18 percent between 1990 and 1994. Between July 1994 and July 1995, employment in the transportation, public utilities and communications sector increased by 2.4 percent to a total of 60,100 jobs, reversing the downward trend of the early 1990's. Finance, insurance and real estate increased by 0.3 percent between July 1994 and July 1995.

According to the NCTCOG Research and Services Department, employment in the Metroplex is predicted to grow by 70 percent. Projections for 2005, 2015 and 2025 indicate that an average regional increase in the employment rate is predicted to be 56,000 jobs annually. Table IV-3 shows the employment projections forecast for the Performance Districts along the PSC.

NCTCOG's demographic forecasts indicate the project was located in a "high moderate" density employment area in 1995 and will continue to be in 2025. In Tarrant County, the area with the highest employment density is reported to be downtown Fort Worth.

TABLE IV-3

EMPLOYMENT PROJECTIONS WITHIN THE PROPOSED SH 121T CORRIDOR

Forecast District*	Name	1990	2010	2020	2025
225	Fort Worth	5,370	10,024	12,564	10,700
229	Fort Worth/Benbrook	123	346	2,393	1,800
231	Fort Worth	6,698	9,652	11,500	12,250
233	Fort Worth/Benbrook	3,518	5,970	7,678	8,150

**Forecast District: aggregation of census tracts used in the DRAM/EMPAL© computer models used in the demographic forecasting process.*
Source: NCTCOG, Research and Information Services.

Housing

As a result of the low interest rates in 1994, home building activity began to increase in north Texas. According to NCTCOG *Dallas-Fort Worth Metropolitan Area Profile*, residential construction permits in Fort Worth increased by 4 percent as of 1997. In addition, multi-family construction was on the rise. *The Profile of General Demographic Characteristics for the City of Fort Worth, Texas: 2000* reports a total of 211,035 housing units of which 92.4 percent are occupied and 7.6 are vacant. Housing tenure information indicates that of the 195,078 occupied units, 55.9 percent are owner occupied and 44.1 percent are renter occupied. The NCTCOG Research and Information Services' 2001 Current Housing Estimates reports a total of 575,212 housing units that include single family, multi family and other (mobile home, trailer, houseboat, etc.) for Tarrant County. The City of Fort Worth's total estimated housing units for 2001 was 213,828.

Income

The median income per household along the PSC was higher than that for the City of Fort Worth and slightly lower than that for Tarrant County. According to 1990 income census

data, the household median income in 1989 for the project area was $30,655 compared to $26,547 for the City of Fort Worth and $32,335 for Tarrant County. Table IV-4 summarizes the median household income per census tract within the PSC.

TABLE IV-4 MEDIAN HOUSEHOLD INCOME BY CENSUS TRACT

Census Tract	Median Household Income
1019.00	24,181
1028.00	30,819
1053.00	16,534
1054.05	31,926
1055.06	28,262
1055.08	27,412
1055.10	36,250
1109.03	39,000
1110.09	53,629
1110.10	18,536

Utilities

Existing utilities located within the developed areas along the PSC include water and wastewater, gas, telephone and cable television lines. The Holly Water Plant, the water treatment plant for the City of Fort Worth, is located east of Forest Park near the northern project limit. Located south of Vickery Boulevard and west of Hulen Street is a high-power electrical transmission line that traverses the PSC parallel to the Centennial Railroad Yards. Few utilities are found within the ROW of the undeveloped areas.

Existing Land Use and Employment within the Project Study Corridor

The land use along the PSC, from IH 30 to FM 1187, varies from undeveloped land to developed areas of residential, commercial, industrial and agricultural purposes. The establishments north of IH 30 and west along Vickery Boulevard include industrial and commercial buildings with interspersed areas of residential units, churches and vacant lots.

The area south of the Union Pacific Railroad tracks and west of Hulen Street is currently undeveloped; however, this section along the PSC is zoned for commercial and industrial development. Residential areas and recreational facilities, such as hiking and biking trails are aligned with the Trinity River. The land south of Bellaire Drive to Dirks Road is suburban with retail and commercial sites as well as single and multi-family residential units. From Dirks Road to FM 1187, the majority of the land is undeveloped with the exception of established agricultural and scattered residential areas. As shown in Exhibits IV-1 to IV-4, the City of Fort Worth has designated the land use in this area for commercial, industrial, and recreational purposes.

A listing of major employers with over 100 employees, that fall within 2,640 ft of the proposed SH 121T corridor is available to the public at the TxDOT Fort Worth District Office. Specifically documented were major employers located between Bryant Irvin Road and Hulen Street.

Transportation Facilities

Roadways

The vast network of existing roadways in Fort Worth is comprised of a variety of roadway types including residential streets and major City streets, interstate highways and freeways. Major highways such as IH 30, IH 20, SH 199 and US 377 running east-west, and IH 35W and Business 287, running north-south are located within or in close proximity to the PSC.

Roadways traversing the PSC or located adjacent to it include: Forest Park Boulevard, IH 30, IH 20, SH 183, Lancaster Avenue, Oakmont Boulevard, Rosedale Street, Vickery Boulevard, Wenneca Avenue, Tucker Street, Bellaire Boulevard, Dirks Road, Altamesa Boulevard,

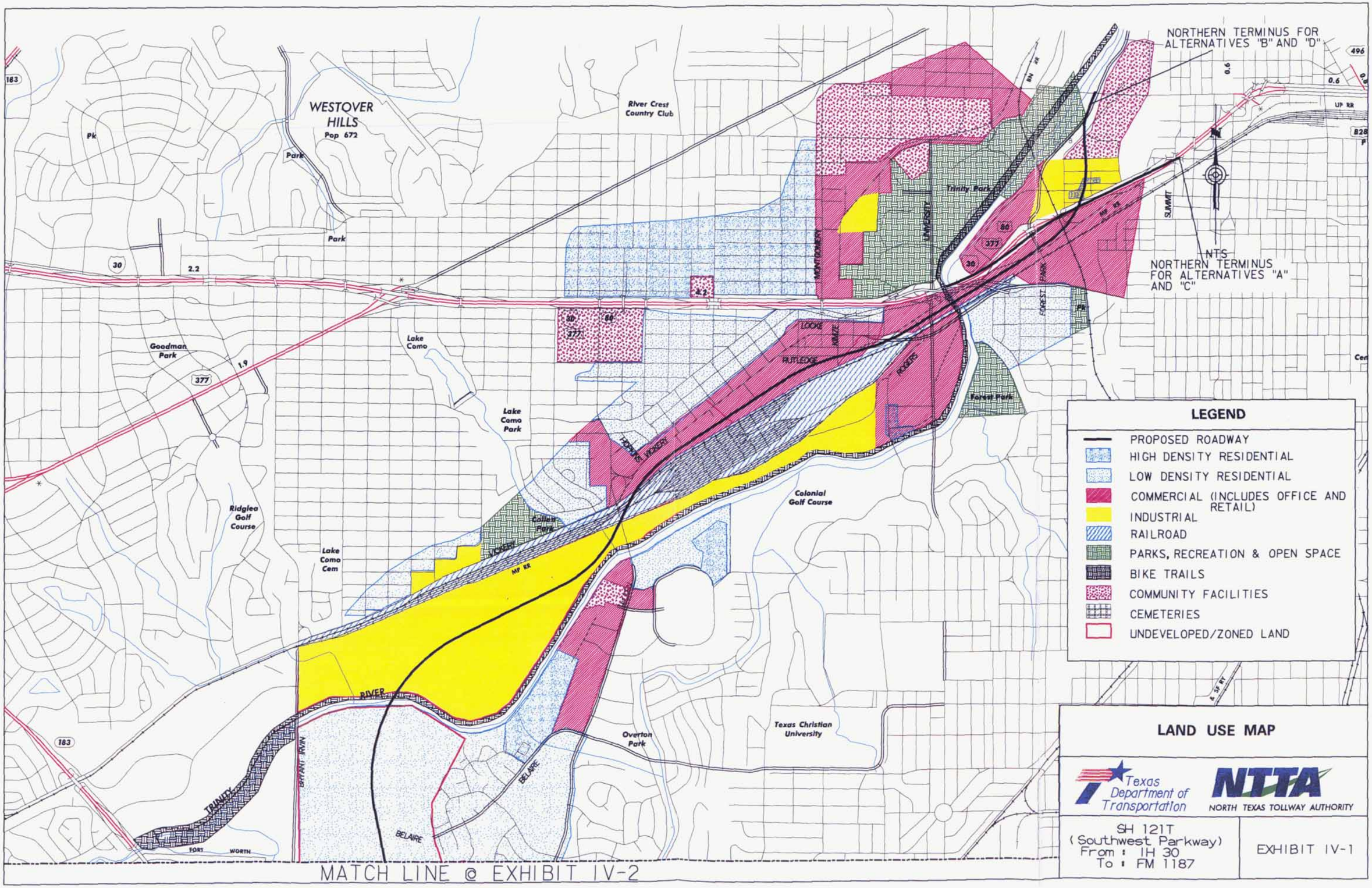
Hulen Street, Bryant Irvin Road, Montgomery Street, University Avenue, Columbus Street, Stuart-Feltz Street and FM 1187.

Railroads

The recommended SH 121T alignment would impact both the Union Pacific Railroad and the South Orient Railroad. The recommended roadway alignment at Hulen Street would intersect the Union Pacific Railroad Centennial Railroad Yard. The South Orient Railroad track would require a crossover east of Old Granbury Road and south of Dirks Road.

Publicly Oriented Facilities

The Fort Worth Cultural District, located just minutes from Downtown Fort Worth, is bounded by West 7th Street, Montgomery Boulevard, IH 30 and University Drive. Offering a variety of shops, restaurants, six world class museums as well as performance art theaters, it attracts over a million visitors from all over the world annually. The area is the third largest Cultural District in the United States. Entertainment at the Cultural District includes Casa Mañana, Scott and Omni Theaters. The highest concentration of art galleries in Fort Worth is found within the Cultural District. Each year approximately 800,000 people attend the Southwestern Exposition and Livestock Show at the largest of all the buildings within the Cultural District, the Will Rogers Memorial Center. For equestrian events, the world-renowned Will Rogers Equestrian Centers includes a 1,100-seat arena and space for up to 650 cattle or 260 horses. The Cultural District is located near the PSC.


NORTHERN TERMINUS FOR ALTERNATIVES "B" AND "D"
NTS
NORTHERN TERMINUS FOR ALTERNATIVES "A" AND "C"
WESTOVER HILLS
Pop 672
River Crest Country Club
Goodman Park
Lake Como
Lake Como Park
Ridglea Golf Course
Lake Como Cem
Colonial Golf Course
Texas Christian University
Overton Park
Forest Park
Trinity Park
Colley Park
LOOKE
HULE
RUTLEDGE
ROGERS
MONTGOMERY
SUMMIT
FOREST PARK
TARRANT
JACKSON
RIVER
BRYANT IRVIN
BELAIRE
TRINITY
FORT WORTH
MP RR
UP RR
LEGEND
PROPOSED ROADWAY
HIGH DENSITY RESIDENTIAL
LOW DENSITY RESIDENTIAL
COMMERCIAL (INCLUDES OFFICE AND RETAIL)
INDUSTRIAL
RAILROAD
PARKS, RECREATION & OPEN SPACE
BIKE TRAILS
COMMUNITY FACILITIES
CEMETERIES
UNDEVELOPED/ZONED LAND
LAND USE MAP
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187
EXHIBIT IV-1
MATCH LINE @ EXHIBIT IV-2

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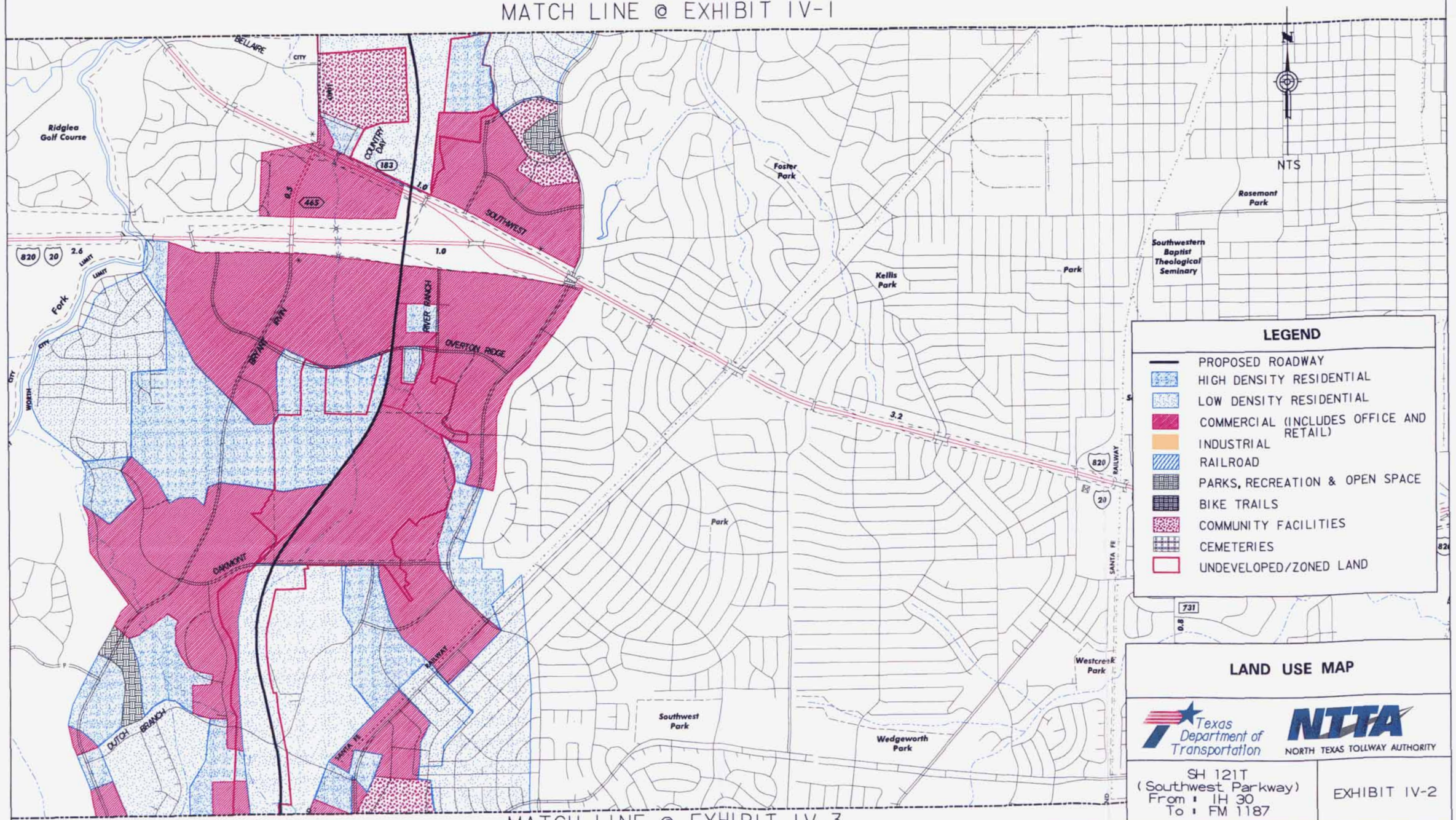
MATCH LINE @ EXHIBIT IV-1



MATCH LINE @ EXHIBIT IV-3

LAND USE MAP

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT IV-2

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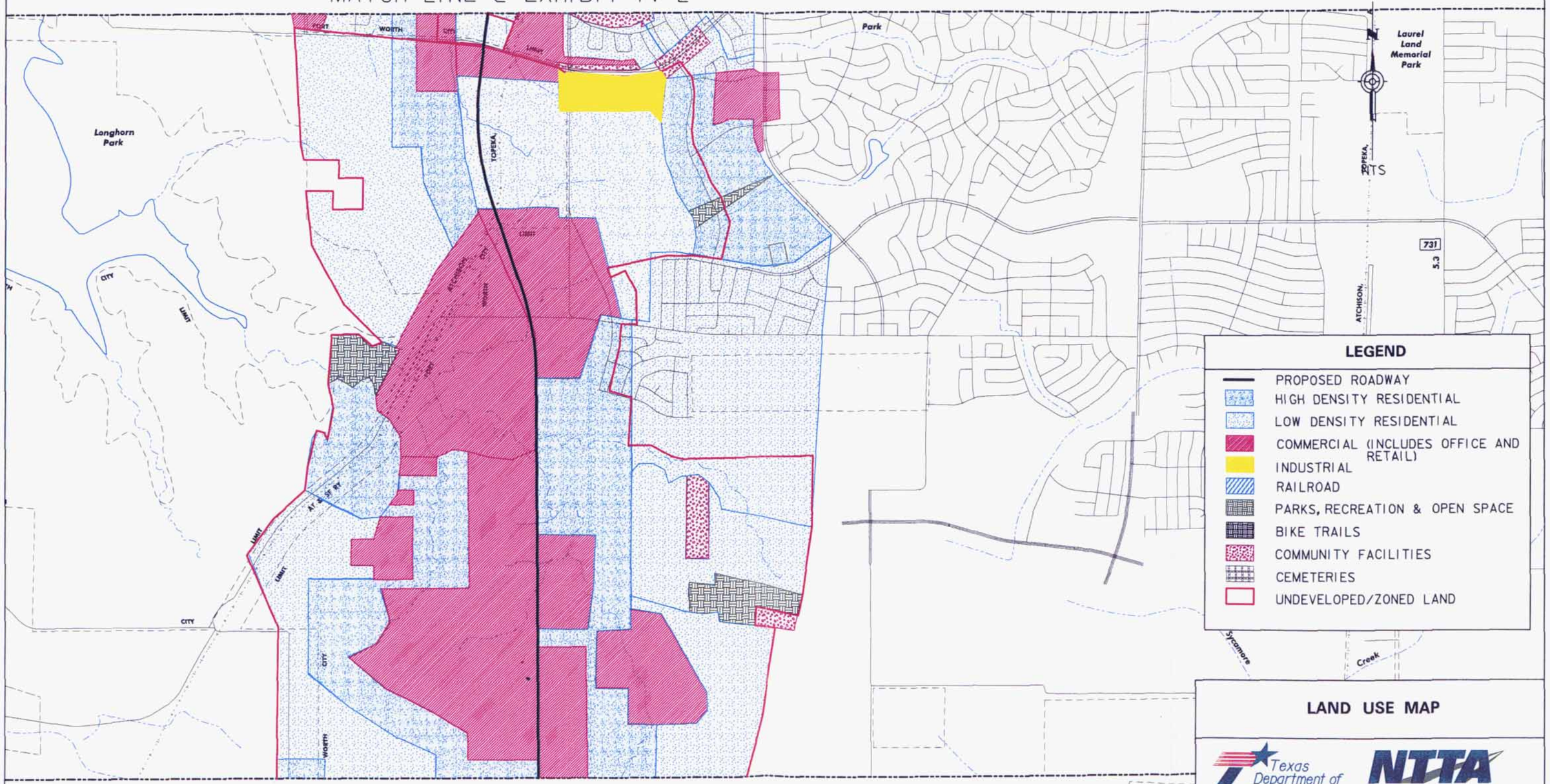
MATCH LINE @ EXHIBIT IV-2



MATCH LINE @ EXHIBIT IV-4

LAND USE MAP

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT IV-3

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MATCH LINE @ EXHIBIT IV-3

SOUTHERN TERMINUS
FOR ALTERNATIVE "C"

SOUTHERN TERMINUS
FOR ALTERNATIVES "A, B AND D"

FORT WORTH CITY LIMIT

STUART FELTZ

Rock Creek

RAILWAY

WEST CLEBURNE - CROWLEY

CROWLEY - CLEBURNE

CROWLEY - PLOVER

FORT WORTH CITY LIMIT

CROWLEY CITY LIMIT

NTS

TARRANT

JOHNSON

1902

1187

5.0

0.9

LEGEND

- PROPOSED ROADWAY
- HIGH DENSITY RESIDENTIAL
- LOW DENSITY RESIDENTIAL
- COMMERCIAL (INCLUDES OFFICE AND RETAIL)
- INDUSTRIAL
- RAILROAD
- PARKS, RECREATION & OPEN SPACE
- BIKE TRAILS
- COMMUNITY FACILITIES
- CEMETERIES
- UNDEVELOPED/ZONED LAND

LAND USE MAP

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT IV-4

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Public parks and recreation areas are located within the PSC. Currently, there is a bike trail maintained by the City of Fort Worth Parks and Recreation Department along the Clear Fork of the Trinity River. This bike trail is also part of the NCTCOG's planned Veloweb system. The Veloweb is composed of smaller roads with a minimum of stop signs and traffic lights benefiting fast moving bicyclists. According to the City of Fort Worth Parks and Recreation Department, no new parks or recreation areas have been designated for review or design along the PSC.

Various facilities, such as schools and hospitals as well as churches, exist in close proximity to the PSC. The Country Day School, located on Country Day Boulevard, All Saints Hospital, located north of Oakmont Boulevard, and the Harris Methodist South Southwest Hospital, located south of Oakmont Boulevard are situated within proximity to the PSC. The churches include: San Mateo Catholic Church on Lovel Lane, Greater Friendship Baptist Church on Wenneca Road and St. Paul Lutheran Church north of IH 30. Apartment complexes and single-family developments comprise the residential units existing along the PSC. The apartment complexes include Hunters Green, Hunters Ridge and Marina Club Apartments on Overton Ridge Road. The single-family developments include two units located along the southern section of the PSC south of Oakmont Boulevard and Dutch Branch Road.

Environmental Setting

Earth Resources

Soils

The various soil series along the PSC are best described utilizing the general soil map units as developed by the Natural Resource Conservation Service (NRCS), formerly the Soil Conservation Service, in "The Soil Survey of Tarrant County" June, 1981. The general soil map units are typically comprised of one or more major detailed soil map units in combination with minor proportions of other soil types. General soil map units found in the PSC include the Sanger-Purves-Slidell, the Aledo-Bolar-Sanger and the Frio-Trinity units.

The Sanger-Purves-Slidell unit consists of nearly level and gently sloping, deep and shallow, clayey soils located mainly on uplands. The soils in this unit are mainly used as cropland, pastureland, and rangeland and for urban purposes. The map unit is primarily made up of well-drained soils on slopes of 0 to 5 percent. This unit makes up approximately 21 percent of the County and 37 percent of the PSC.

The Aledo-Bolar-Sanger unit consists of gently sloping to moderately steep, very shallow to deep, loamy and clayey soils located mainly on uplands. The soils in this unit are mainly used as rangeland, pastureland, and cropland and for urban purposes. The map unit is primarily made up of well-drained soils on slopes of 1 to 20 percent. This unit makes up 20 percent of the County and 48 percent of the PSC.

The Frio-Trinity unit consists of nearly level, clayey soils located on floodplains. The soils in this unit are mainly used as pastureland and for urban purposes. The map unit is primarily made up of well-drained soils on 0 to 1 percent slope. This unit makes up 7 percent of the County and about 15 percent of the PSC.

Geography

The PSC is found within the Trinity River Basin in North Central Texas, and the northwestern portion of the West Gulf Coastal Plain of Texas. Structurally, the area lies between the Texas Basin on the east and the Fort Worth Basin on the west. The Balcones fault approaches the eastern edge of the PSC.

Topography in the area consists of rolling hills with elevations ranging from 695 ft to 1,065 ft. above sea level.

Mineral Resources

Sand, gravel, stone, lime and cement represent the greatest contribution to previous mineral production in Tarrant County. No current mineral or petroleum production occurs within the PSC.

Prime and Unique Farmlands

Some soil series within the PSC have been designated as prime farmland. These soils are found along the Clear Fork of the Trinity River between IH 20 and Vickery Boulevard. This section of the PSC is currently undeveloped, though it is designated for commercial uses, and has not in the recent past supported agricultural activities. There are no unique soils found within the PSC, and no farmlands have been designated as having Statewide or local significance.

Surface Water Resources

The PSC is found within the Trinity River Basin. The affected streams are the Clear Fork of the Trinity River, stream segment 0829 from the confluence with the West Fork of the Trinity River to Benbrook Dam, and several intermittent streams, such as several unnamed tributaries to Rock Creek as well as the Clear Fork. The Clear Fork begins in Parker County and drains southwestern Tarrant County. The Clear Fork is a mature stream with a fairly low but uniform gradient of approximately 7-ft per mi.

According to the TNRCC's *1998 Water Quality Inventory*, the water quality of the segment is limited due to water quality standards violations; however, the designated water uses do include contact recreation, high aquatic life or public water supply. The Texas Department of Health (TDH) issued an aquatic life closure in 1990 due to elevated levels of chlordane in fish

tissues; fish consumption is not supported. Urban runoff appears to be the principal source of contamination. Water flow within the PSC is primarily influenced by rainfall.

Benbrook Lake reservoir was formed by the impoundment of waters of the Clear Fork of the Trinity River, and is located approximately 1 mi. southwest and upstream of the PSC. The reservoir is a major source of water for the City of Fort Worth and Tarrant County. It also serves as a recreational facility in addition to providing flood control. The Fort Worth District of the USACE manages the lake. In addition to Benbrook Lake, there are several small impoundments consisting of ponds generally less than 1 acre in surface area that are used mainly for livestock watering.

Neither the USCG nor the USACE consider the waterway along the PSC as navigable.

Groundwater Resources

The Trinity Aquifer consists of early Cretaceous age formations of the Trinity Group that extends from the Red River in North Texas to the Hill Country of South-Central Texas. Formations comprising the Trinity Group are (from youngest to oldest) the Paluxy Sand, Glen Rose and Twin Mountain-Travis Peak. The Travis Peak formation has historically been the most productive in Tarrant County. Its depth increases toward the east ranging from 550 ft at Eagle Mountain Lake to 1,490 ft at Arlington. It has an approximate thickness of 300 ft where it crosses the PSC. The Paluxy Sand formation crops out in the northwestern part of the county and averages 160 ft in thickness, beginning at a depth of approximately 300 ft. A Quaternary system of detrital alluvial deposits consists of material derived from formations that crop out within the drainage basin of the Trinity River. These floodplain deposits consist of rounded gravel, sand and clay. Floodplain deposits are extensive along the Clear Fork and range in width from a few ft to more than 2 mi. The alluvial deposits in Tarrant County furnish small to moderate quantities of ground water, the larger yields coming from lower

terraces and floodplains. The quality of water from this formation is generally poor due to surface pollution.

Floodplains and Floodways

According to the Federal Emergency Management Agency (FEMA) records, the four Build roadway alternative alignments would cross the 100-year floodplains and floodways. Twelve (12) locations in total including floodway, floodplain, river and streams are within the PSC of the four Build alternatives. Six (6) of these water bodies flow directly into the Clear Fork of the Trinity River and six flow into Benbrook Lake. All of the floodway and floodplain impacts are listed below. More details on each of these crossing can be found in the section titled *Floodplain and Floodway Impacts* (Chapter V, Environmental Consequences).

The stream and 100- year floodplain crossings are:

Clear Fork of the Trinity River –

1. Along Forest Park Boulevard, south of Lancaster Avenue,
2. South of IH 30, east of University Drive,
3. North of IH 30, east of University Drive,
4. East of University Drive, south of the railroad bridge,
5. North of Bellaire Drive, between Hulen Street and Bryant Irvin Road,

Unnamed Tributary of the Clear Fork of the Trinity River -

6. South of Overton Ridge, between Hulen Street and Bryant Irvin Road,

Unnamed Tributary leading to Benbrook Lake

7. North of Columbus Trail and west of Old Granbury Road,
8. South of Columbus Trail East of Old Granbury Road,
9. Between the proposed Risinger Road and McPherson Road extensions,

Unnamed Tributary of Rock Creek –

10. Between Stuart-Feltz Road and Old Granbury Road,
11. At Old Granbury Road, north of FM 1187 and
12. At FM 1187 and Old Granbury Road.

Climate

The Metroplex is located within north central Texas, approximately 250 mi north of the Gulf of Mexico. It is near the headwaters of the Trinity River that is found within the upper margins of the Coastal Plain. The Metroplex's climate is humid subtropical with hot summers. It is also continental, characterized by a wide annual temperature range. Annual precipitation varies considerably, ranging from less than 16 inches to more than 45 inches. Winters are mild, but “blue northers” occur about three times each winter and often are accompanied by sudden drops in temperature. Periods of extreme cold that occasionally occur are short-lived, so that even in January mild weather occurs frequently. The highest temperatures of summer are associated with fair skies, westerly winds, and low humidity. Characteristically, hot spells in the summer are broken into three-to-five day periods by thunderstorm activity. Average high and low temperatures range from a low of 37º F in January to a high of 98º F in August. Thunderstorms occur throughout the year, but are most frequent in the spring. The average length of the warm season (freeze-free period) is approximately 249 days. The average last occurrence of 32º F or below is normally in mid-March and the average first occurrence is in late November. The mean annual precipitation is 33.7 inches and the mean annual snowfall is 3.1 inches.

Air Quality

The PSC is located within a non-attainment area for O_3 standards. O_3 concentrations have exceeded the 1-hour standard of 0.125 parts per million (ppm)/125 parts per billion (ppb). The Transportation Control Measures (TCM) to correct the current air quality status for O_3 are presented in the SIP. CO standards have not been exceeded over the last four years; Tarrant County is in attainment for CO standards.

Using the United States Environmental Protection Agency's (EPA) Mobile Source Emission Factor Model (Mobile5a_h) for air quality, the volatile organic compounds (VOCs) emissions from each action scenario for the 2007, 2015 and 2025 analysis years results were below the

VOC emission budget. Using the same model the NOx emissions for the same years were also below the emission limit budget. Both precursors of O_3 meet conformity criteria. Results of the conformity determination show that *Mobility 2025 Plan Update* and the 2002-2004 TIP meet the transportation requirements of the CAAA (42 USC. 7504, 750(c) and (d)) and the transportation conformity rule (40 CFR Parts 51 and 93).

SH 121T is part of the *Mobility 2025 Plan Update* as one of the facilities to improve the regional transportation system by the construction of a new tollway facility and a rural highway in the southwest quadrant of Tarrant County; therefore, the project is consistent with an approved conformity plan.

Hazardous Materials

Hazardous materials are used extensively by society for manufacturing, transportation, cleaning and other associated activities. They can be found in virtually every aspect of public and private daily activities, such as household cleaners, automotive fuels, manufacturing chemicals and water and wastewater disinfectants to name a few. Independently owned auto-repair businesses, old filling stations, dry cleaners and manufacturing facilities are located along the northern section of the PSC. Auto-body shops and repair garages typically handle fuels and oils, filling stations store gasoline, dry cleaners use solvents and manufacturing facilities use many different types of chemicals. The presence of these types of materials does not imply that the property is contaminated, but might be an indication of potential contamination.

A Phase I Environmental Site Assessment report (Fort Worth TxDOT Contract No. 44-845PF010) identified areas of potential environmental concern relating to hazardous waste use on properties within the SH 121T PSC. The report lists sites registered in the TNRCC Voluntary Cleanup Program (VCP), TNRCC Leaking Underground Storage Tank (LUST) database, TNRCC registered Underground Storage Tank (UST) database, EPA Resource Conservation and Recovery Act Information System (RCRIS) database utilizing the Facility

index system (FINDS), and the Texas Industrial and Hazardous Waste Database (TxIHW). More details on report findings can be found in part *Hazardous Wastes* (Chapter V, Environmental Consequences).

Ecological Resources

Ecological Setting

The PSC is located within the Texan Biotic Province. All proposed alternatives lie in a transition area of the Blackland Prairies and East Cross Timbers. Non-urbanized areas of the PSC are most consistent with silver bluestem-Texas wintergrass grasslands vegetation type as outlined in "Vegetation Types of Texas" (TPWD, 1984). Other areas of the project would be described as cleared pastureland and areas under cultivation.

The flora and fauna found within the PSC are typical of that found in the southeastern part of the Country. Benbrook Lake, in the vicinity of the PSC, supports diverse fish species. It is an important feeding and staging habitat for migratory birds. The Clear Fork of the Trinity River, located within the PSC represents a valuable ecological environment. Efforts by the Texas Parks and Wildlife Department (TPWD) and the City of Fort Worth to stock the river with channel catfish, largemouth bass and rainbow trout are currently under way. Over 40 species of indigenous mammals have been inventoried in Tarrant County and could be potentially be found within much of the PSC. Over 500 species of birds are known to occur within Tarrant county on a resident or transient basis and their potential presence in the PSC is only diminished by the existing urban activity.

The vegetation in the rural area located along the southern alignment consists of big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), Indian grass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), gramas (*Bouteloua sp.*) and buffalo grass (*Buchloe dactyloides)*. In the past, significant amounts of prairie forbs such as western ragweed (*Ambrosia psilostachya*), sedges (*Cyperaceae sp.*), asters (*Aster sp.*) and sageworts

(*Artemisia ludoviciana var. mexicana)* covered the area. Land mismanagement and cultivation have caused the uplands to be covered mostly by scrub oak (*Quercus sinuate var. breviloba*), mesquite (*Prosopis glandulosa*) and juniper (*Juniperus ashei*) with mid and shortgrass understories. The bottomland trees include hardwoods such as pecan (*Carya illinionensis*), oak (*Quercus sp.*), and elm (*Ulmus americana* and *Ulmus crassifolia*). Mesquite trees have heavily invaded these bottomland areas. Characteristic understory shrubs and vines include skunkbush (*Rhus trilobata)*, saw greenbriar (*Smilax bona-nox)*, bumelia (*Sideroxylon lanuginosum var. oblongifolium)* and poison ivy (*Toxicodendron radicans*).

Many of the native biotic communities have been displaced as a result of urban development as well as industrial and commercial activities. The vegetation in the urban areas along the northern part of the PSC is predominately ornamental. Trees such as crape-myrtle (*Langerstroemia indica*) sweetgum (*Liguidambar styraciflua*), live oak (*Quercus virginiana*), holly (*Ilex deciduas*) and mimosa (*Albizia julibrissin*) are currently located along roads, medians and property lines.

Environmentally Sensitive Areas

A system of hiking and biking trails runs along the Clear Fork of the Trinity River. The trails might be directly affected by construction impacts or indirectly affected by impacts such as air quality, noise and access. There are no known wildlife refuges located within the PSC.

Cultural Resources

A preliminary assessment of the potential for cultural resources within the PSC of the SH 121T from North Forest Park Boulevard in Fort Worth to FM 1187 has been conducted. Research centered upon the identification of previously conducted archeological surveys, recorded archeological sites, properties listed on the National Register of Historic Places

(NRHP), State Archeological Landmarks (SALs), Texas Historical Landmarks (THL) and Texas Historical Markers (THM) was conducted at the Texas Archeological Research Laboratory (TARL) and the Texas Historical Commission (THC). Background summaries and the historical context for the PSC, the historic background, requirements for NRHP Eligible buildings/structures, and the historic architectural context are found in the Historic Buildings Report, under separate cover.

Regulatory Compliance

This project is undertaken in conformance with a Programmatic Agreement between the TxDOT, the FHWA, the Advisory Council on Historic Preservation (ACHP) and the Office of the State Historic Preservation Officer (SHPO) providing for procedures and processes to conform to Federal and State laws. Under Section 106 of the National Historic Preservation Act of 1966, Federal agencies are required to "take into account" the "effects" that an undertaking will have on "historic properties." Historic properties are those included in or eligible for inclusion in the NRHP.

Under 36 CFR 800.4 of the ACHP regulations pertaining to the protection of historic properties, Federal agencies are required to locate, evaluate, and assess the effects an undertaking will have on such properties. In compliance with Federal regulations and on behalf of the Fort Worth District of the TxDOT and FHWA and in accordance with procedures established by the Programmatic Agreement between the FHWA, ACHP, TxDOT and SHPO, this report focuses on the preliminary identification of potential historic properties within the PSC.

This project also must comply with the regulatory mandate of the State Antiquities Code (TAC) because it might involve archeological sites located "on land owned or controlled by the State of Texas or any city, county, or local municipality thereof." As the project would involve new ROW purchased by the State or municipal entity of the State, the destruction or alteration of extant historic properties will be closely monitored by the THC, Division of

Archeology under the regulations of the TAC. The TAC allows for all such properties to be considered for their eligibility to be nominated as SALs and requires that each be considered in terms of their possible *significance.* Significance standards are clearly described in Chapter 26 of the THC's Rules of Practice and Procedure for the Antiquities Code of Texas.

Results and Section 106

An archeological survey of the PSC was conducted in March of 1999. Two archeological sites were discovered. Both are located in the proposed ROW for the combined alternatives. One is a prehistoric archeological site (41TR170) located at the crossing of the PSC with the Clear Fork of the Trinity River. This site was recommended as potentially eligible for the NHRP and as a SAL in the Section 106 Archeological survey report submitted to the Environmental Affairs Division (ENV) of TxDOT in August 1999.

Site 41TR171 is an historic archeological site located north of the Clear Fork of the Trinity River. The site was recommended as not eligible for the NRHP or as a SAL in the August 1999 archeology survey report.

Approximately 95% of the PSC has been surveyed by a professional archeologist and only one prehistoric site (41TR170) is a concern under Section 106. The only areas remaining to be surveyed for prehistoric sites are highly urbanized and located in the northern section of the project area adjacent to University Drive and the crossing of the Clear Fork of the Trinity River. Section 106 coordination regarding Site 41TR170 is proceeding and is summarized in Chapter V. The survey of the remaining parcels will be completed following ROW acquisition. A total of five additional prehistoric archeological sites are known to be present within the PSC, but would not be affected by the project.

A total of 13 listed and/or potentially NRHP eligible architectural sites (buildings, objects, and districts, etc.) were identified within the area of potential effect (APE) during a historic

building reconnaissance survey of the PSC. The APE, as designated by the ENV guidelines for historic building reconnaissance and documentation, consists of 0.25 mi on either side of new location ROW and 500 ft on either side of roadway expansion projects.

Of the sites surveyed, the City of Fort Worth Holly Water Treatment Plant (Site No. 256) and the Lancaster Street Bridge (Site No. 257) are the only two potentially eligible NRHP sites that are a concern (see Chapter V). The Holly Water plant is divided into two separate pieces of property, North Holly and South Holly. North Holly is a historic property with its earliest building, the pump building, dating from 1891-92. Incorporating elements of Romanesque Revival and Mission Revival styling, the simple rectangular block buildings represent municipal design ideology of the early twentieth century, and are eligible for NRHP listing under Criterion A and C.

The property on which South Holly is located was developed separately from North Holly. It was acquired by the City of Fort Worth in 1956 and opened for operation in 1958. Prior to the City's acquisition of the property it was undeveloped and not used for water filtration or treatment. The buildings do not meet the 50-year age requirement established by the 2004 letting date of the SH 121 project, and therefore, South Holly is not eligible for the NRHP. Should the letting date be moved back until the year 2006, South Holly should be formally evaluated for NRHP eligibility, given its association with North Holly and its apparent continuity of form, architecture, and context (See Historic Buildings Report, under separate cover).

The Lancaster Bridge is located in close proximity to the PSC. The bridge is potentially eligible for the NRHP under Criteria A and C.

The remaining 11 NRHP eligible buildings include six houses (Site Nos. 36, 37, 85, 117, 144 and 239), two railroad bridges (Site Nos. 79 and 255), one historic district (Site No. 80), one railroad yard (Site No. 77) and one botanical garden (Site No. 78). Other non-eligible NRHP

historic buildings/sites are also located within the PSC. Typically these include clusters of neighborhoods that are not located within the proposed ROW of any of the alternatives (Chapter V, Environmental Consequences).

One registered THL, the Cobb-Burney House (Site No. 239) is located within 0.25 mi of the proposed new roadway. In addition, four cemeteries were identified within the PSC, but would not be affected by construction of the project. Two of the cemeteries, the Burke Cemetery and the Willburne Cemetery are registered THLs (Chapter V).

SHPO consultation resulted in concurrence on historic property eligibility and effects. See Appendix E for copies of correspondence.

Endangered/Threatened Species

The Clear Fork of the Trinity River and Benbrook Lake support fauna in the area. Benbrook Lake supports a wide variety of the migratory species of birds that could traverse the PSC.

Coordination was initiated with the United States Fish and Wildlife Service (FWS) branch office in Arlington, Texas to determine the endangered, threatened, candidate species and species of concern within the PSC. In addition, a Biological Assessment was completed for the project to address any potentially occurring threatened and endangered species possibly impacted by the proposed project. The State list (Rev. 8/26/99) provided the species and status shown in Table IV-5. The FWS concurred with a finding of no effect for the project for threatened and endangered species listed in Tarrant County. No Federally endangered or threatened species have been observed within or near the vicinity of the PSC during project surveys. The Biological Assessment and FWS concurrence are located in Appendix E of the document.

TABLE IV-5
TARRANT COUNTY LISTED ENDANGERED/THREATENED SPECIES
SH 121T PROJECT STUDY CORRIDOR

Birds			
Scientific Name	**Common Name**	**Federal Status**	**State Status**
Haliaeetus leucocephalus	Bald Eagle	Proposed to be Delisted	Threatened
Falco peregrinus tundrius	Arctic Peregrine Falcon	_	Threatened
Ammodramus benslowh	Henslow's Sparrow	_	_
Grus americana	Whooping Crane	Endangered	Endangered
Lanius ludovicianus migrans	Migrant Loggerhead Shrike	–	–
Sterna antillarum athalassos	Interior Least Tern	Endangered	Endangered
Athene cunicularia hypugaea	Western Burrowing Owl	–	–
Reptiles			
Scientific Name	**Common Name**	**Federal Status**	**State Status**
Phrynosoma cornutum	Texas Horned Lizard	_	Threatened
Crotalus horridus	Timber/Canebrake Rattlesnake	–	Threatened
Thamnophis sirtalis annectens	Texas Garter Snake	–	–
Vascular Plants			
Scientific Name	**Common Name**	**Federal Status**	**State Status**
Tomanthera auriculata (extirpated)	Auriculate False Foxglove	–	–
Mammals			
Scientific Name	**Common Name**	**Federal Status**	**State Status**
Spilogale putorius interrupta	Plains Spotted Skunk	–	–

Source: TPWD - Endangered Resources Branch (08/26/99).

V. ENVIRONMENTAL CONSEQUENCES

This section includes the potential beneficial and adverse social, economic and environmental effects of the four "Build" Alternatives A, B, C and D as well as the No-build Alternative and describes the measures proposed to mitigate adverse impacts.

Land Use Impacts

A transportation plan was developed in order to meet future traffic needs due to growth and development in the Dallas-Fort Worth area. *Mobility 2025 Plan Update*, prepared by the NCTCOG and approved by the Regional Transportation Council (RTC), was designed to guide the implementation of roadway and transit improvements in the region. *Mobility 2025 Plan Update* reports a rapid future growth in the Dallas-Fort Worth area through the year 2025, and indicates that the local population will grow 63 percent and employment 70 percent by the year 2025. The population travel needs, such as travel patterns and travel times, alter when changes of land use take place. The main result of these changes is suburbanization, where commercial and residential areas are separated from each other and scattered throughout a particular area. Suburbanization is characterized by the lack of central traffic destinations. The current and proposed development trends along the PSC are shown in the Land Use maps, Exhibits IV-through IV-4.

The Dallas-Fort Worth area is highly suburbanized, and the outlying area to central city commute from the southwest area of Fort Worth does not provide for a direct route to the CBD, other than arterials such as Hulen, Bryant Irvin and Old Granbury roads. The growth in population and employment previously mentioned will increase the continuous development trend of suburban areas in Southwest Fort Worth. Travel times, trip frequencies and trip lengths are expected to increase by the year 2025. Without improvements to the existing transportation system, such as the proposed SH 121T project, the existing traffic congestion is expected to increase.

Retail businesses, manufacturers, residences, farms and community facilities can be found scattered throughout the PSC. The land north of IH 30 and west along Vickery Boulevard has been developed commercially with some vacant lots, and few residences and churches. Along Vickery Boulevard, north of the Union Pacific railroad tracks, the land is mainly commercial with interspersed industrial and single-family residences. Directly south of the railroad tracks and west of Hulen Street, the land is currently undeveloped. Its use has been designated residential and industrial along the proposed roadway with some commercial areas also affected. Some recreation areas such as a bike trail and parks along the river are also found in the PSC. From Bellaire Road to Dirks Road the land is urbanized with commerce, apartments and single-family residences. Between these two roads along the PSC, the land is undeveloped and designated for commercial and residential use. From Dirks Road to FM 1187 (southern terminus) the land is currently undeveloped with some agricultural activity present, and a few residential areas. Undeveloped land along the corridor in this area is designated for commercial, industrial, and recreational use. Exhibits IV-1 through IV-4 show the undeveloped land delineated in red. The land adjacent to approximately 11 mi of the project length is currently undeveloped.

The *2000 Fort Worth Comprehensive Plan*, adopted by the City of Fort Worth Council on August 1, 2000, describes the City's proposed land use along the project. Although, according to Texas Local Government Code Section, 219.005, "a comprehensive plan should not constitute zoning regulations or establish zoning district boundaries", future land use is based on the Plan's land use policies and land use maps. Often, transportation access influences land use. The purpose of the City of Fort Worth's Plan is to guide future land use in order to encourage economic development, promote housing developments, preserve cultural resources and to accommodate transportation routes and publicly owned facilities that would improve and provide the residents quality of life. The Plan includes the proposed Southwest Parkway project within the following sectors:

1. Sector 1, Arlington Heights: area bounded on the north by the West Fork Trinity River, on the south east by the Clear Fork of the Trinity River and on the west by Bryant Irvin Road.
2. Sector 2, Downtown: area bounded on the west by Forest Park Boulevard, on the south by the railroad tracks/IH 30 and on the east by railroad tracks west of IH 35W.
3. Sector 14, TCU/Westcliff: bounded on the west by the Clear Fork of the Trinity River, on the east by 8th Avenue, Granbury Road and McCart Avenue; and on the south by SW Loop 820.
4. Sector 15, Wedgewood: bounded on the north by SW Loop 820, on the east by the Clear Fork of the Trinity River, on the south by Risinger Road and on the east by the railroad tracks.

Development strategies recommended by the Plan in relation to the project, include mixed-use growth development, as defined by the City is a highly urbanized area similar to a downtown area. This consists of high employment concentration, housing units, schools, publicly owned facilities, public transportation and pedestrian activity. A similar area is envisioned for north of IH 30 and along the south side of the Southwest Parkway corridor, west of Hulen Street to the Trinity River. The Plan also recommends light industrial use as a transition between the rail yards and Southwest Parkway, from Montgomery Street, to Bryant Irvin Road. It encourages residential development along Hulen Street to the area north of Bellaire Drive and south of Briarhaven Road and compatible development along the proposed corridor, between the Trinity River and Arborlawn Drive. In addition, it encourages major employers, businesses and apartment complexes to locate at proposed entryways and stops of the proposed Southwest Parkway facility and single-family residential housing to generate between entry points.

Alternatives A, B, C and D

According to the DEIS titled, *SH 121 from Interstate IH 20 in Tarrant County to Proposed US 67 in Johnson County, TX* (September 1989), the City of Fort Worth has previously

planned for a "Build" alternative and has made zoning decisions to match project plans. Therefore, the construction of SH 121T would have minimal effects on land use south of the Union Pacific railroad yard.

The *2000 Fort Worth Comprehensive Plan*, that includes the project, contains land use policies and strategies upon which zoning, plats, annexations, special exceptions, variances and other land use decisions along the project will be made. SH 121T would potentially help the City of Fort Worth achieve its land use goals of developing multiple growth centers, to promote compact urban land use within designated areas and lower intensities of land use elsewhere in the City.

Improved access to properties in the area would potentially cause an associated value increase of these properties. The expected industrial, commercial and residential developments of the area should encourage new employment and improve the overall economy in the area.

No-build Alternative

The No-build alternative would most likely have no effect on the trend of urbanization in the south area. With the projected growth in the area and no alternative route, congestion, travel time and travel miles are expected to increase in future years. Future land use decisions might be influenced by the lack of access that Southwest Parkway would have provided. The No-build alternative would not be consistent with the *Mobility 2025 Plan Update* for the Metroplex, or the *2000 Fort Worth Comprehensive Plan*.

Prime and Unique Agricultural Lands

Pursuant to Section 1541(a) of the FPPA, enacted December 22, 1981, USC. 4202 and as required by 1541(b) of FPPA, Federal agencies are: (1) to use the criteria to identify and take into account the impacts of their programs on the preservation of farmland, (2) to consider

alternative actions, as appropriate, that could lessen any impacts, and (3) to ensure that their program, to the extent practicable, is compatible with State, local government, and private programs and policies to protect farmland.

Completion of Form AD-1006, Farmland Conversion Impact Rating, Part VI, for land south of IH 20 resulted in a total site assessment score of 32. If the assessment score is less than 60, no further soil evaluation is required. There was no unique farmland found from IH 20 north to the Hulen Street Bridge and no farmlands within this area had been designated as having Statewide or local significance. There is approximately 1.7 mi of prime farmland that follows the Clear Fork of the Trinity River, but this soil has not been under cultivation for some time and is currently zoned commercial.

Alternatives A, B, C and D

The "Build" alternatives would not result in any impacts on prime and unique farmlands.

No-build Alternative

The No-build alternative would not result in any impact on prime and unique farmlands.

Environmental Justice Impacts

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations direct Federal agencies to address human health and environmental issues in low-income and minority communities. There are three fundamental environmental justice principals that must be addressed for each individual project in order to assure that equity for all affected has been accomplished. These principals are:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations

- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process and
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Demographics of the Dallas-Fort Worth CMSA were discussed in detail in Chapter IV. As shown on Table IV-2, the project crosses census tracts 1019.00, 1028.00, 1053.00, 1054.05, 1109.03, 1055.06, 1055.08, 1055.10, 1110.09 and 1110.10. Census 2000 information shows that the percent minorities for the PSC is 21 percent, for the City of Fort Worth is 40 percent and for Tarrant County is 29 percent. According to the most available information at this time (1990 income census data), the household median income in 1989 for the project area was $30,655 compared to $26,547 for the City of Fort Worth and $32,335 for Tarrant County. The median income per household along the PSC was higher than that for the City of Fort Worth and slightly lower than that for Tarrant County. Table IV-4 summarizes the median household income per census tract within the PSC. The geographic area proposed for the alignment of SH 121T represents a mix of population consistent with that found within the CMSA.

The recommended alignment of SH 121T has been selected based on the availability of undeveloped land and has been established to reduce the possible impacts of relocation, community cohesion and special populations. All of the alternatives comply with the standards as set forth by Executive Order 12898, Environmental Justice.

Alternatives A, B, C and D

Based upon the 2000 US Census information, low-income or minority populations would not be expected to be differentially affected (no disproportionate impacts) by the implementation of any of the “Build” alternatives.

No-build Alternative

The project would provide increased access to outlying areas of southwest Fort Worth and Johnson County. If the project is not built, the availability of services could be considered as not being made available to those in these areas.

Social Impacts

Community Cohesion Impacts

Community cohesion impacts are based on the proposed action's ability to split neighborhoods, isolate a portion of a neighborhood or ethnic group, generate new development, change property values or cause the separation of residences from community facilities and services.

Alternative A

From the northern terminus (Summit Avenue along IH 30 to Hulen Street) Alternative A would follow along the property line of the existing Union Pacific Railroad Yard and would require the relocation of two residences located in a commercially zoned area north of IH 30, east of Forest Park Boulevard. Located just south of the Holly Water Treatment Plant, this neighborhood represents an area in which formally residential buildings have been replaced by commercial and industrial use structures. Within this neighborhood, there is one church, eleven houses, over thirty commercial vacant lots, office space and warehouses. In large part, the businesses found in the area do not support the basic needs of the neighborhood. There are no grocery stores, convenient stores, laundry mats, or gas stations. The small community is served by one church and it would not be taken by this alternative. The predominant land use of this area is commercial and industrial.

The neighborhoods' quality of community life was identified through field observation and interviews with the City of Fort Worth Planning Department. The community is presently located north of a major highway, with limited access and surrounded by City utility facilities and railroad tracks. The alternative would not split the neighborhood by isolating any of the residences or disrupting community cohesion.

Alternative A would traverse, for the most part, undeveloped parcels of land from the Hulen Street Bridge up to the IH 20 interchange. South of IH 20, the wider median, approximately 712 ft, of proposed ROW would take portions of housing units at the Hunters Ridge, Marina Club and Hunters Green multi-family residential developments located both north and south of Overton Ridge Boulevard. Although the apartment building units along the east and west boundaries of Southwest Parkway would be impacted by relocation, the apartment community cohesion would not be split or divided by any of the Build alternatives. The remaining apartment units would continue to experience the multi-family community atmosphere they currently enjoy; and their community cohesion may be improved by this Build alternative, due to the improved accessibility to major highways and other facilities and services.

From Overton Ridge to just south of Oakmont Boulevard, the project would cross undeveloped land until approximately 530 ft south of Oakmont Boulevard. The eastern ROW line would take a variable 80-ft strip of the Hulen Bend Addition, approximately 2,390 ft long parcel. Twenty-nine existing and six currently under construction (May 2002) single-family residences would be taken along Stockton Drive. South of Dutch Branch Road and west of Lomo Alto Drive, ROW takings would cause the loss of approximately seven single-family residences located on the outskirts of a large single-family development. These properties are adjacent to the alignment and their taking would not impact the integrity of the remaining houses or the overall neighborhood. From here, south to FM 1187, the project would traverse undeveloped properties, eliminating any negative impacts associated with community cohesion in this area.

Although Alternative A involves the taking of apartment units and single-family units, no particular neighborhood or social group would be affected by the relocation of these properties. The alignment would not isolate a portion of a neighborhood, ethnic group or cause the separation of residences from community facilities and services. Alternative A would not negatively impact the cohesiveness of neighborhoods.

Alternative B

From the northern terminus (Forest Park Boulevard) to IH 30, Alternative B would require the relocation of the same number of single-family residences as Alternative A. The only church serving the area would not be taken. As mentioned above, this community already lacks a strong community cohesion due to its location within a commercial zone, proximity to IH 30, limited access and lack of recreational areas, schools, grocery stores and service stations. From IH 30 to Hulen Street, Alternative B would follow along the property line of the existing Union Pacific Railroad Yard, traversing some commercial properties, and would not have an impact on any communities along this section. Alternative B would traverse, for the most part, undeveloped parcels of land from the Hulen Street Bridge to FM 1187 eliminating any negative impacts associated with community cohesion in this area. No particular neighborhood or social group would be affected by relocation of the properties. The alternative would not split the neighborhood by isolating any of the residences. For these reasons Alternative B would not negatively impact the cohesiveness of neighborhoods.

Alternative C

From the northern terminus, west of Summit Avenue along IH 30 to Hulen Street, Alternative C would follow along the property line of the existing Union Pacific Railroad Yard and would require relocation of two residences located in a commercially zoned area north of IH 30. This neighborhood lacks recreational areas, schools, grocery stores and gas service stations.

Located north of a major highway, with limited access and surrounded by City utility facilities and railroad tracks, the small residential community would not experience a further degradation of community cohesion because of the project. Alternative C would also traverse commercial property located along IH 30. None of the communities along this section would be impacted. Alternative C would then traverse, for the most part, undeveloped parcels of land from the Hulen Street Bridge south to the IH 20 interchange. From IH 30 to Hulen Street, Alternative C would follow along the property line of the existing Union Pacific Railroad Yard, traversing some commercial properties and would not have an impact on any communities along this section. The alternative would not split the neighborhood and therefore not isolate any of the residences.

Alternative C would traverse, for the most part, undeveloped parcels of land from the Hulen Street Bridge to FM 1187 and would eliminate any negative impacts associated with community cohesion in this area. No particular neighborhood or social group would be affected by relocation of properties. For these reasons, Alternative C would not negatively impact the cohesiveness of neighborhoods.

Alternative D

From the northern terminus (Forest Park Boulevard) to IH 30, Alternative D would require the relocation of 9 single-family residences and the Greater Friendship Baptist Church in a commercially zoned area. The neighborhood is located south of the Holly Water Treatment Plant and is one in which formally residential buildings have been replaced by buildings for commercial and industrial uses. Within this neighborhood, there is one church, eleven houses, over thirty commercial vacant lots, office space and warehouses. In large part, the businesses found in the area do not support the basic needs of the neighborhood. There are no grocery stores, convenient stores, laundry mats, or gas stations. The small community is served by one church. The predominant land use of this area is commercial and industrial.

This alternative would disrupt the community cohesion because one house would be isolated on each side of the proposed route and the Greater Friendship Baptist Church would be taken. Therefore the community's tenuous cohesion would be further strained.

From IH 30 to Hulen Street, Alternative D would follow along the property line of the existing Union Pacific Railroad Yard, traversing some commercial properties and would not have an impact on any communities along this section. Alternative D would traverse, for the most part, undeveloped parcels of land from the Hulen Street Bridge to FM 1187 and would eliminate any negative impacts associated with community cohesion in this area. While no particular social group would be affected by relocation because of this alternative, community cohesion will be impacted by this alignment because it splits the only two houses remaining in the neighborhood north of IH 30, east of Forest Park. The neighborhood is located within census tract No. 1019.00.

No-build Alternative

As the Metroplex, southwest Tarrant County and northern Johnson County continue to grow, the increased number of people, jobs and other activities would overburden the existing transportation infrastructure. Widening of thoroughfares, streets, highways and arterials would be needed to accommodate the increased traffic demands. These expansion projects could impact community cohesion through displacements of businesses and residences.

Public Safety Impacts

The existing road network around the PSC is composed of arterials, collectors, local streets, FM roads, county roads and unpaved roads. These roads typically have adequate to deteriorating pavement, high crowns, narrow or no shoulders, limited sight distances and discontinuous geometry. Also, many of these roads are discontinuous and have more vehicle traffic than they were designed to carry. Without major improvements to the existing road

network or construction of a new roadway, such as proposed, the existing system would continue to become more congested. Increased congestion can lead to unsafe driving conditions that could result in higher traffic accidents.

Alternatives A, B, C and D

The Build alternatives are expected to improve highway and public safety. By relocating through traffic on existing arterials onto a controlled access facility, the opportunity for pedestrian/vehicle accidents would be diminished. The opportunity for access-conflict accidents (vehicle striking vehicle while attempting to turn) also would decrease on the existing roadways because of reduced traffic volumes. The opportunity for these types of accidents to occur on the new roadway would be less than that of existing roadways because turning movements would be restricted to the interchanges and signalized intersections.

Construction of the proposed facility would improve access to schools, hospitals, churches, or other public facilities along the project. Fire protection and other emergency services would be improved because of the ease of travel afforded by completion of this project. The public safety services provided by these facilities would be enhanced by an expected decrease of congestion within the PSC.

County and local public safety officials would be notified of any road closure resulting from the project construction. Detour timing and necessary rerouting of emergency vehicles would be coordinated with the proper local agencies.

No-build Alternative

The No-build Alternative would not decrease traffic volumes on existing roadways and would likely result in increased traffic accidents and increased response time for emergency providers as future traffic volumes rise.

Publicly Owned Facilities & Community Services Impacts

Coordination was initiated with the TPWD, and no existing or planned facilities are located within the PSC. A copy of the *Texas Outdoor Recreation Plan, 1995,* was reviewed. There are no plans being developed within the PSC for future publicly owned facilities or community services. The City of Fort Worth Parks and Recreation Department currently maintains a bike trail along the Clear Fork of the Trinity River (Exhibit V-1). This bike trail is also part of a NCTCOG planned Veloweb system and would remain unaffected as a result of this project. Contact with the City of Fort Worth Parks and Recreation Department indicated that no new parks or recreation areas had been designated for review or design along the PSC.

Alternatives A, B, C and D

The construction of SH 121T would temporarily affect the use of the hike and bike trail along the Clear Fork of the Trinity River. The effects would be construction related and are considered to be short term. Elevated bridge structures would cross the river and would not affect the existing facilities. Site investigation of the proposed route corridor and coordination of information with applicable public agencies indicate that the route would not permanently impact any existing public park or recreation area.

No-build Alternative

The No-build alternative would cause no impact on recreational facilities.

Relocation Impacts

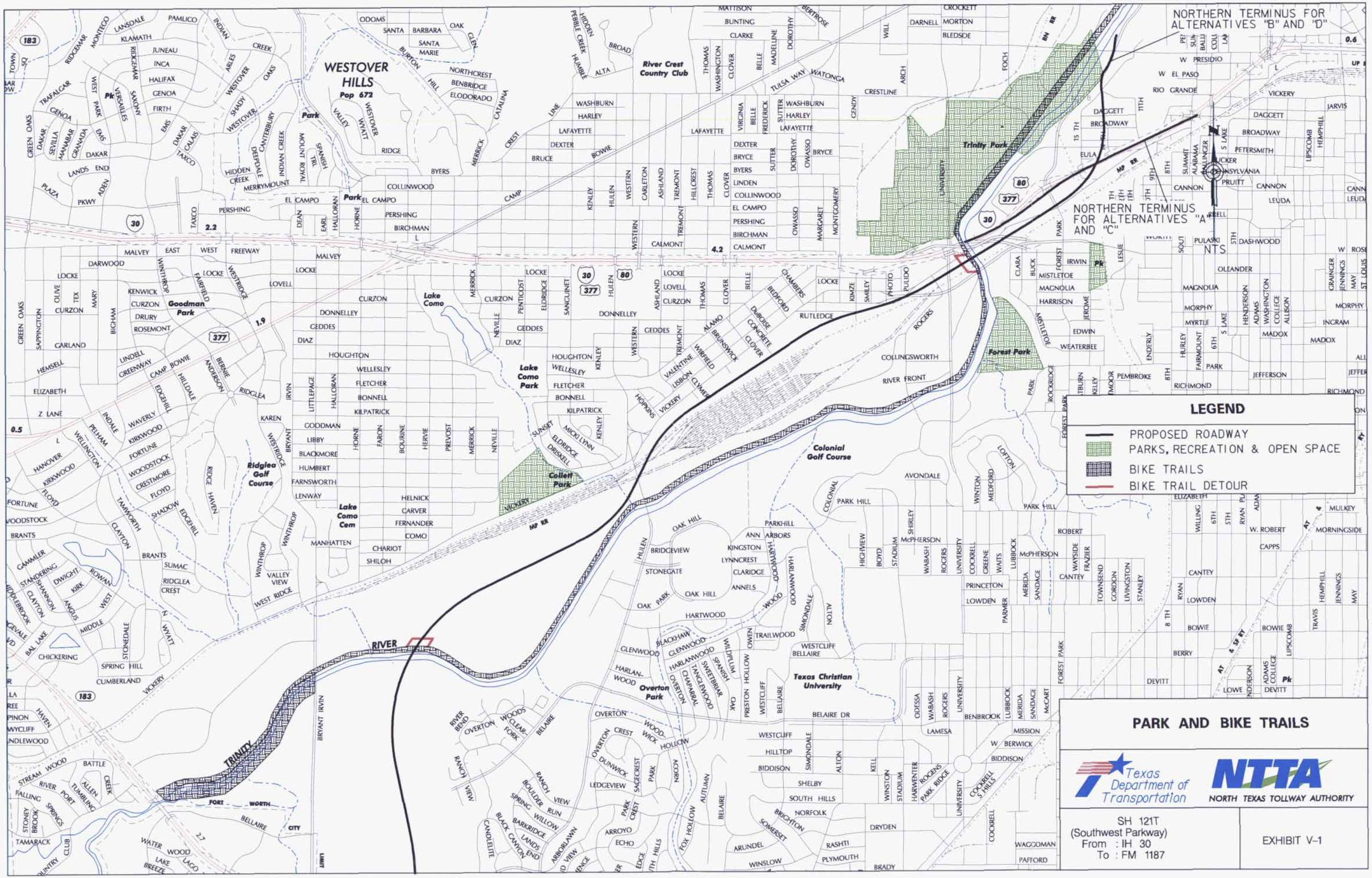
According to the Real Estate Center at Texas A&M University and the United States Census Data, building permit activity data indicates a single-family housing construction change of +120 percent in 2000 over 1990 in the Fort Worth/Arlington metropolitan area and +108 percent in Tarrant County. Multi Family housing construction changed +85 percent in the

City of Fort Worth and +102 percent in Tarrant County for the same year. The NCTCOG's *Profile of General Demographic Characteristics for Tarrant County, Texas: 2000* reports that from a total of 565,830 housing units, 533,864 are occupied and 31,966 are vacant. The City of Fort Worth alone has a total of 211,035 housing units of which 195,078 (92.4 percent) are occupied and 15,957 (7.6 percent) are vacant.

The TaxNetUSA: Tarrant County Property Information database, city maps and visual field inspections were the main tools used to determine the total number of displacements for each land use category for each alternative. Information for each of the alternatives is presented below: The majority of the properties located within each of the proposed alternatives' ROW requirements consist of vacant commercial lots, including warehouses and offices/retail locations and City/State property as well as abandoned buildings. These were not included on the tables detailing each alternative's relocation displacements. Exhibit V-A depicts the relocation impacts by socio-economic classifications.

Alternative A

The relocation of residential and commercial property would be required for approximately 3 mi along the northern section of Alternative A. One of the affected areas would be from the northern terminus, at Summit Avenue, to just west of Hulen Street. This area is located within census tract 1019.00. Based on the census data (see Table IV-2 and IV-4), the population of this area is predominantly non-minority, and the median income is below that of the City of Fort Worth. Alternative A's varying ROW requirements north and south of IH 30 and to the west along Vickery Boulevard would cause the relocation of a motel, several businesses and a few residences as described below. This area is located within census tract 1053.00. Based on the census data (see Table IV-2 and IV-4), the population for this area is predominantly minority, and the median income is below that of the City of Fort Worth.


NORTHERN TERMINUS FOR ALTERNATIVES "B" AND "D"
NORTHERN TERMINUS FOR ALTERNATIVES "A" AND "C"
NTS
LEGEND
PROPOSED ROADWAY
PARKS, RECREATION & OPEN SPACE
BIKE TRAILS
BIKE TRAIL DETOUR
PARK AND BIKE TRAILS
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187
EXHIBIT V-1
WESTOVER HILLS
Pop 672
River Crest Country Club
Trinity Park
Forest Park
Lake Como
Lake Como Park
Goodman Park
Ridglea Golf Course
Lake Como Cem
Colleit Park
Colonial Golf Course
Overton Park
Texas Christian University
TRINITY
RIVER
FORT WORTH
BELLAIRE
CITY LIMIT
BRYANT IRVIN
MP RR
BN RR
UP RR
AT & SF RR

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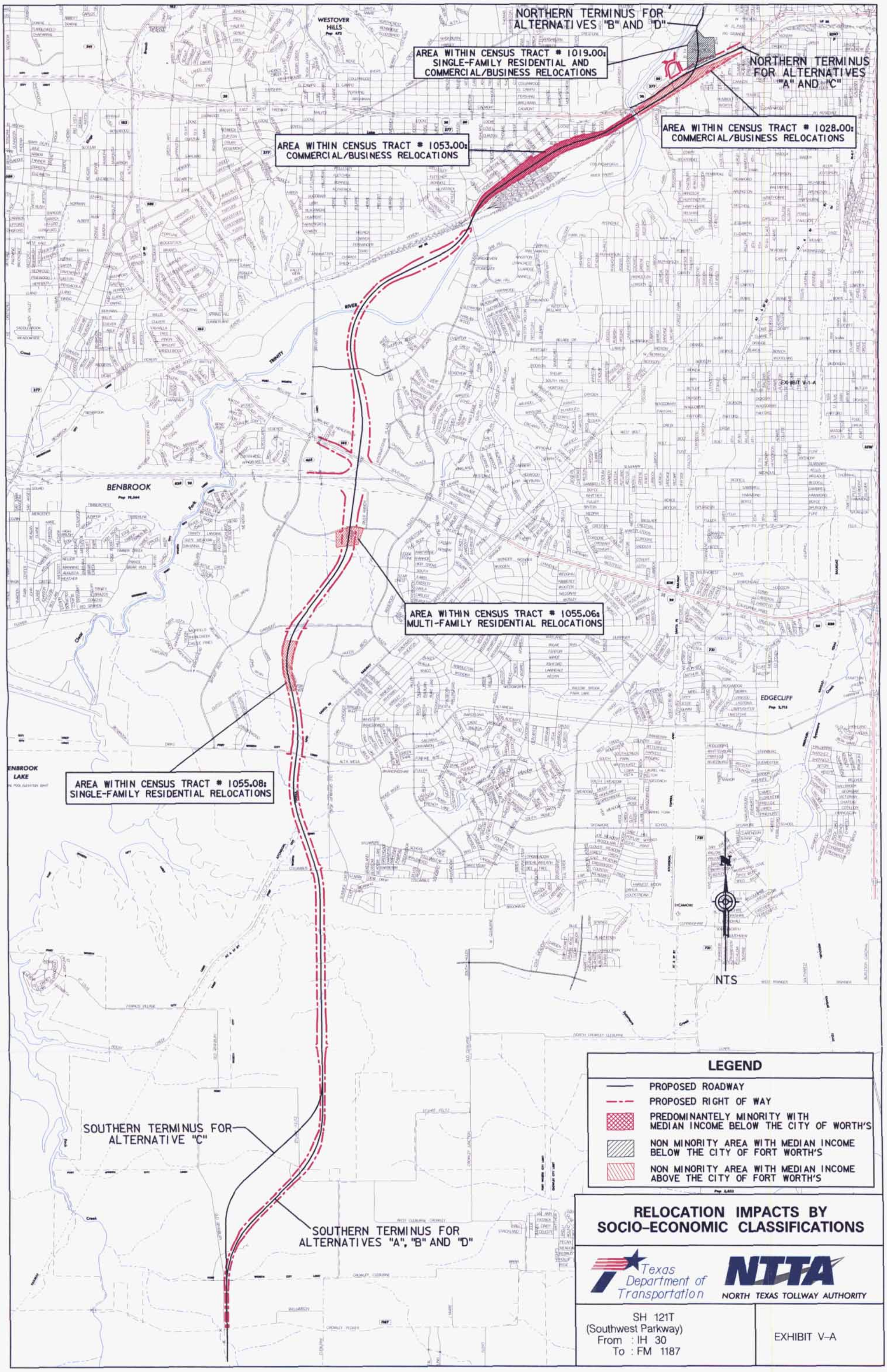
NORTHERN TERMINUS FOR ALTERNATIVES "B" AND "D"
AREA WITHIN CENSUS TRACT # 1019.00: SINGLE-FAMILY RESIDENTIAL AND COMMERCIAL/BUSINESS RELOCATIONS
NORTHERN TERMINUS FOR ALTERNATIVES "A" AND "C"
AREA WITHIN CENSUS TRACT # 1028.00: COMMERCIAL/BUSINESS RELOCATIONS
AREA WITHIN CENSUS TRACT # 1053.00: COMMERCIAL/BUSINESS RELOCATIONS
AREA WITHIN CENSUS TRACT # 1055.06: MULTI-FAMILY RESIDENTIAL RELOCATIONS
AREA WITHIN CENSUS TRACT # 1055.08: SINGLE-FAMILY RESIDENTIAL RELOCATIONS
WESTOVER HILLS
BENBROOK
EDGECLIFF
NTS
SOUTHERN TERMINUS FOR ALTERNATIVE "C"
SOUTHERN TERMINUS FOR ALTERNATIVES "A", "B" AND "D"
LEGEND
PROPOSED ROADWAY
PROPOSED RIGHT OF WAY
PREDOMINANTELY MINORITY WITH MEDIAN INCOME BELOW THE CITY OF WORTH'S
NON MINORITY AREA WITH MEDIAN INCOME BELOW THE CITY OF FORT WORTH'S
NON MINORITY AREA WITH MEDIAN INCOME ABOVE THE CITY OF FORT WORTH'S
RELOCATION IMPACTS BY SOCIO-ECONOMIC CLASSIFICATIONS
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187
EXHIBIT V-A

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The area south of IH 20 to just south of Overton Ridge Boulevard would impact the housing units of three apartment complexes. This area is located within census tract 1055.06. Based on the census data (see Table IV-2 and IV-4), the population for this area is predominantly non-minority, and the median income is above that of the City of Fort Worth. The three impacted complexes would be Hunters Ridge Apartments, Hunters Green Apartments and Marina Club Apartments. Hunters Ridge Apartments, located on River Ranch Boulevard, contains 248 units with approximately 245 units occupied. The proposed ROW would require the relocation of three apartment unit buildings and several covered parking structures. Hunters Green Apartments, located on Overton Ridge Boulevard, contains 248 units with approximately 239 units occupied. ROW requirements would require the relocation of three apartment unit buildings. Marina Club Apartments, located on Overton Ridge Apartments, contains 387 units in its complex with a varying number of vacancies. The ROW requirements would require the relocation of two apartment unit buildings within the complex.

Between Oakmont Boulevard and Alta Mesa Boulevard, the ROW requirements would require the relocation of several single-family residences that were under construction as of September 2001. This area is located within census tract 1055.08. Based on the census data (see Table IV-2 and IV-4), the population for this area is predominantly non-minority, and the median income is above that of the City of Fort Worth. The estimated 400 ft to 600 ft of ROW to the west of Stockton Drive, near the Hulen Bend Addition, would require the relocation of several single-family residences. A number of homes that were under construction would also be impacted in the Hulen Bend area. The estimated 500 ft of ROW to the west of Lomo Alta Drive would require the relocation of 7 single-family residences. The total number of displacements, for Alternative A, per land use category is listed on Table V-1. A total of 154 displacements were estimated within the project ROW. These displacements include:

- 42 single family,
- six single family residences under construction at the time of the site investigation,

- one motel,
- three multi-family residential areas (apartment complexes) and
- 82 businesses, which include retail shops, warehouses, manufacturers, offices, auto dealerships and auto service businesses.

A total of 21 billboards would also be relocated.

TABLE V-1

TOTAL DISPLACEMENTS FOR ALTERNATIVE A

Land Use	No. Of Displacements
Residential	
Single Family Residential	42
Single Family Being Constructed as of 5/02	6
*Multi-Family Residential	3
Business/Commercial	
Retail	11
Warehouse	27
Office	34
Auto Service	6
Motel	1
Auto Dealership	2
Misc.	1
Billboards	21
Total	**154**

**Applies to actual number of apartment complexes potentially affected for which at least one apartment building unit is taken.*

Alternative B

The relocation of residential and commercial property would be required along approximately 3 mi of the proposed roadway. This area is located within census tract 1019.00. Based on the census data (see Table IV-2 and IV-4), the population of this area is predominantly non-minority, and the median income is below that of the City of Fort Worth. One of the affected areas would be from the beginning of the project, at Forest Park Boulevard (the northern terminus), to just north of IH 30. The estimated 180 ft of ROW required for this section, would cause the relocation of commercial properties and private residences and takings of both county and private land. The area just north and south of IH 30 and east of Forest Park Boulevard, would require relocation of several businesses and commercial properties. This area is located within census tract 1019.00 and 1028.00. Based on the census data (see Table IV-2 and IV-4), the population of tract 1019.00 is predominantly non-minority, and the median income is below that of the City of Fort Worth. The population of tract 1028.00 is predominantly non-minority, and the median income is above that of the City of Fort Worth. The proposed ROW requirements south of IH 30 and west along Vickery Boulevard would cause the relocation of one motel, several businesses and commercial properties as described below. This area is located within census tract 1053.00. Based on the census data (see Table IV-2 and IV-4), the population of tract 1053.00 is predominantly minority, and the median income is below that of the City of Fort Worth.

The total number of displacements per land use category is listed on Table V-2. A total of 104 displacements were estimated within the project ROW. These displacements include:

- five single family residences,
- one motel,
- City owned facility, and
- 77 businesses which, include retail shops, warehouses, offices, auto dealerships and auto service businesses.

A total of 21 billboards would also be relocated.

TABLE V-2

TOTAL DISPLACEMENTS FOR ALTERNATIVE B

Land Use	No. of Displacements
Residential	
Single Family Residential	5
Business/Commercial	
Retail	11
Warehouse	25
Office	33
Auto Service	5
Motel	1
Auto Dealership	2
Billboards	21
City Facility	1
Total	**104**

Alternative C

The relocation of residential and commercial property would be required along approximately 3 mi of the proposed roadway. The area containing the most relocations would be from the beginning of the project, at Summit Avenue (the northeast terminus), to just west of Hulen Street. This area is located in census tracts 1019.00. Based on the census data (see Table IV-2 and IV-4), the population of tract 1019.00 is predominantly non-minority, and the median income is below that of the City of Fort Worth. The area just south and north of IH 30 and east of Forest Park Boulevard, would require relocation of several businesses, commercial properties and a few residences. This area is located within census tract 1028.00. The population of tract 1028.00 is predominantly non-minority, and the median income is above that of the City of Fort Worth. The proposed ROW requirements to the west along Vickery Boulevard, would cause the relocation of one motel, several businesses and commercial properties as described below. This area is located within tract 1053.00. The population of

tract 1053.00 is predominantly minority, and the median income is below that of the City of Fort Worth.

The total number of displacements per land use category is listed on Table V-3. A total of 106 displacements were estimated within the project ROW. These displacements include:

- three single-family residences,
- one motel, and
- 82 businesses that include retail shops, warehouses, offices, automobile dealerships and automobile service businesses.

A total of 21 billboards would also be relocated.

TABLE V-3

TOTAL DISPLACEMENTS FOR ALTERNATIVE C

Land Use	No. of Displacements
Residential	
Single Family Residential	3
Business/Commercial	
Retail	11
Warehouse	27
Office	34
Auto Service	6
Motel	1
Auto Dealership	2
Misc.	1
Billboards	21
Total	**106**

Alternative D

The relocation of residential and commercial property would be required along approximately 3 mi of the proposed roadway. One of the affected areas would be from the beginning of the

project, at Forest Park Boulevard (the northern terminus), to just north of IH 30. This area is located in census tracts 1019.00. Based on the census data (see Table IV-2 and IV-4), the population of tract 1019.00 is predominantly non-minority, and the median income is below that of the City of Fort Worth. The estimated 220 ft of ROW required for this section, would cause the relocation of commercial properties and private residences and takings of both county and private land including a church located just west of 11th Street and east of 15th Street. The area just south of IH 30 would require relocation of several businesses and commercial properties. This area is located within census tract 1028.00. The population of tract 1028.00 is predominantly non-minority, and the median income is above that of the City of Fort Worth. The proposed ROW requirements south of IH 30, to the west along Vickery Boulevard, would cause the relocation of a motel, several businesses and residences as described below. This area is located within tract 1053.00. The population of tract 1053.00 is predominantly minority, and the median income is below that of the City of Fort Worth.

The total number of displacements per land use category is listed on Table V-4. A total of 105 displacements were estimated within the project ROW. These displacements/takings include:

- 10 single family residences,
- one church,
- one motel,
- City owned facility, and
- 71 businesses that include retail, warehouses, manufacturers, offices and auto service businesses.

A total of 21 billboards would also be relocated.

The church that would be relocated serves a community that, because of its location in an industrial/commercial zone and in such close proximity to the highway, is already suffering poor community cohesion. An interview with an employee of the church revealed that

attendance is poor. Minimum impacts on its membership and the community that it serves are expected.

TABLE V-4

Total Displacements for Alternative D

Land Use	No. of Displacements
Single-Family Residential	10
Places of Worship	1
Businesses/Commercial	
Retail	10
Warehouse	22
Manufacturing	2
Office	31
Auto Service	4
Motel	1
Misc.	2
Billboards	21
City Facilities	1
Total	**105**

The 2000 census data for the census tracts located within Camp Bowie Southwest Boulevard, Clear Fork of the Trinity River and Henderson Street Boulevard (census tracts #1019, 1020, 1024.01,1024.02, 1025, 1026, 1027, 1028, 1053and 1054.05), shows there is a total of 1,572 vacant housing units. Additionally, there are 387 vacant housing units within the area encompassed by Bryant Irving Road, IH 20, Hulen Street, Old Granbury Road and Altamesa Boulevard (census tracts 1055.08 and 1055.06). Include in this number of vacant houses reported, are units for lease and for sale, of comparable price and quality, that could meet the needs of those that would be displaced because of the project. Most of the relocated businesses are commercial warehouses and offices. There are enough vacant commercial lots in the area outside the proposed corridor for relocation of these businesses. The May 2001 *Fort Worth Introduction: A statistical profile of Fort Worth and the Fort Worth-Arlington*

Metropolitan Area by Fort Worth Chamber of Commerce reports that 13.2 percent of Class "A" office space, 30.8 percent of Class "B" office space, 6.7 percent of Suburban Class "A" office space, 14.7 percent of Suburban Class "B" office space, and 5.9 percent of warehouse/industrial space is vacant in the project area. Class "A" office space is considered to be of good to excellent quality, outlay and appearance, good workmanship and materials. Exterior trim is good, more detailed. Class "B" is considered to be of average to good quality built with good quality materials and outlay. Exterior trim is simple.

The relocation program would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and 49 Code of Federal Regulation (CFR) Part 24, as amended. Resources would be made available for relocation assistance for residential and business displaced without discrimination. Titles VI and VIII of the Civil Rights Act of 1968, the HUD Amendment Act of 1974 and Public Law 91-646 of the Federal Relocation Assistance and Real Property Acquisition Policies Act of 1970 protect those displaced. Specifically the Act ensures that, no person may be required to move unless appropriate housing would be available. As discussed above, appropriate housing properties would be available.

The Relocation Assistance Program not only provides financial assistance but also provides for advisory assistance to residents and businesses to be displaced. Relocation officers will provide information and housing alternatives in the area as well as available programs. When requested, a list of available decent, safe and sanitary housing would be provided. To those who qualify, funding would be available to purchase or rent housing, for moving cost or for payment of the scheduled moving cost plus a dislocation allowance. Incidental costs for purchasing a replacement dwelling, as well as an increased interest differential payment would also be provided according to 49 CFR Part 24. Business owners would be entitled to all moving expenses including the related expenses of moving their property, the loss of property and expenses of searching for a replacement site. If they were not able to relocate without significant economical loss, business owners would be eligible for payment in lieu of the

moving expenses. As mentioned above, there would be an adequate number of vacant lots and abandoned businesses available to choose from, so relocation of businesses would not present a problem.

No particular social group (ethnic, racial, religious, etc.) would be disproportionately impacted by any of the Build alternatives. Geographical inequity and social inequity are not issues of concern for this project. The Build alternatives for SH 121T were designed to minimize relocation impacts and to comply with the standards as set forth by Executive Order 12898, Environmental Justice.

No-build Alternative

No relocation measures would be needed if the No-build alternative were implemented. The existing houses, church, motel and businesses would remain.

Economic Impact

According to City of Fort Worth's *1999 Long Range Financial Forecast*, the local economy has performed well over the past few years as demonstrated by construction, property value increases and sales tax revenue growth. The City's property tax rate is higher than all other major cities in Texas mainly due to the low average value of housing. An increase in new residential construction in 1997 at an average value of $92,400 brought up the average homestead value to $58,484 in 1998, a $2,813 increase over 1997. However, 31 percent of all housing in Fort Worth is valued at $25,000.

American Demographics (April 1995) ranked Fort Worth 8th in the United States in projected population growth over the next 10 years and 18th in employment growth. Retail sales for Fort Worth totaled $3.4 billion in the first quarter of 1995 and were up $179.3 million, or 6 percent, from the same period in 1994. Employment in the construction industry

has increased by 25 percent since 1991; from 21,250 to 26,600 (or 5,350 new jobs). Low interest rates since 1994 increased home building as well as non-residential construction.

The CBD of the County, downtown Fort Worth, has boomed commercially. According to *A Dynamic Economy* by Tarrant County Administrator's Office, office occupancy rates are the highest in 14 years and 21 percent higher than downtown Dallas. Tourists and locals are attracted to the City's live entertainment, clubs, restaurants and retail establishments. The Lancaster Avenue Redevelopment Project, located at the southern end of downtown Fort Worth, would create a pedestrian oriented district with streetscape enhancements, renovated historic structures, retail establishments, arts and entertainment centers and restaurants.

Southwest Fort Worth has become increasingly commercialized and suburbanized. The residential and commercial development has expanded within the area near the local shopping areas, including Hulen Mall, Ridgemar Mall and Fort Worth Town Center. Construction and renovation around University Drive and Camp Bowie Boulevard has increased the area's number of entertainment and retail establishments. The residential development has grown and with the completion of the proposed Southwest Parkway, is expected to continue to grow. According to the City of Fort Worth 1996 Annual Report, the Fort Worth Chamber of Commerce sees Southwest Parkway as a prime commercial opportunity.

The direct economic impacts of the project are related to construction cost, tollway costs, tax revenue for acquisition of ROW and loss of established operations (i.e. agricultural land, impact on established business operations, relocation of homes and businesses). The City of Fort Worth has been identified Southwest Parkway, as one of the capital improvement projects important to the community and economy. The ROW cost for the project is approximated at $28 million, of which, the City of Fort Worth would provide $17 million. Other City projects include Trolley System: $35 million, New Arena at Will Rogers: $20-40 million, Relocation of Harley Service Center: $10 million, and Convention Center Upgrades, which could exceed the planned $40 million.

Indirect impacts of the project would involve employment opportunities, accessibility and retail sales, however, no particular neighborhood, community, region or special population would receive a disproportionate share of direct benefits, such as jobs and tax revenues.

According to *Mobility 2025 Plan Update*, based on current financial resources, it would not be possible to meet all mobility goals of the region. By Federal law, *Mobility 2025 Plan Update* is financially limited to available and projected sources of revenue. A financially constrained scenario that includes cost reductions to meet a LOS E and additional revenue generation was used for financial planning. Some of the sources of funds for roadway projects are Federal gasoline tax, State gasoline tax, State vehicle registration fee, toll/use fees and local bond programs. Revenues would increase as these prices rise and as the economy improves. Using the financially constrained scenario explained above, *Mobility 2025 Plan Update* developed an overall allocation of $41.76 billion available through the year 2025 with an estimated shortfall of $3.378 billion. This shortfall represents a 50 percent reduction from the *Mobility 2020* $6.752 billion deficit.

The RTC and NCTCOG Executive Board developed and approved issues for consideration during the 75th Texas Legislature on State transportation funding. Some specific actions include: increase State motor fuel taxes, collect the taxes at the refinery, rather than at the distribution center; increase the annual motor registration fee, increase the first time registration fee for out-of-state vehicles, and modify the motor fuel tax structure to a percentage of fuel price (with a "floor"), rather than a fixed amount per gallon. Although all of these measures would increase the population expenditures, the increase in highway funding would increase construction, thereby generating more jobs and causing a positive net economic impact on the community.

The ROW acquisition of residences and local business represents a loss of tax monies for local taxing authorities, but can be considered minor with respect to the entire tax base for the City. At the project's intersection with IH 30, some of the land is already owned by the State.

South of the project corridor, the land is mostly undeveloped. As the land south of IH 20 along the project continues to develop as expected, the tax base would continue to increase, thereby offsetting any losses associated with ROW acquisition.

Alternatives A, B, C and D

The Build alternatives for this project offer improved access and a less congested alternative route to local businesses and commercial properties, with potential for higher retail sales and an increase of property value. Development along the project might increase more rapidly due to the improved accessibility.

No established business district would be adversely affected or eliminated. The 2000 Census data indicates availability of equivalent properties for relocation of the affected businesses within the project area. There would be a positive impact on established business districts due to accessibility and higher traffic volume. Those residential properties adjacent to the highway might experience a decrease in value due to the close proximity of highway traffic. The same loss in property value might be balanced by an increase in the value of the commercial and industrial properties in the area.

Along the northern part of the PSC, no established agricultural operation would be affected. The land is predominately zoned for commercial and industrial use. No impact would result to the economic vitality of existing highway-related businesses such as gas stations, convenience stores or restaurants. One motel would be relocated. No major negative economical impact would result from this relocation because several new motels are currently located near the PSC along Bryant Irvin Road. The southern part of the project from IH 20 to the southern terminus is predominantly rural with small agricultural operations and is currently in transition to residential land use. As the Build alternative materializes, agricultural uses would change to additional residential, commercial and industrial activities.

No-build Alternative

If the No-build alternative were implemented, highway funds would not be spent on design and construction for the proposed Southwest Parkway project. There would be no economical benefit from employment generated by this type of construction. Allocated monies would likely be spent on other transportation projects in the State. As projected economic growth of the area continues, current transportation facilities would not meet future demands.

No property relocations would be necessary as well as no ROW acquisition. The tax loss expected to occur, from ROW acquisition required for the Build alternative, would not be experienced as well as no tax gains from land development. The alternate route provided by the proposed roadway would not improve accessibility or increase traffic volumes to existing businesses. The No-build Alternative would not ease high volume traffic problems between downtown Fort Worth and the growing southwest side. Heavy urban traffic would create congestion problems, creating higher user costs in the long run. Congestion would reduce vehicle efficiency and degrade air quality.

Unimproved accessibility might negatively influence future development of the land adjacent to the PSC as well as that of already established businesses. The No-build alternative would not cause impacts to existing agricultural activities.

Pedestrian And Bicycle Impacts

According to *Mobility 2025 Plan Update,* as drafted by the Metropolitan Planning Organization (MPO) for the Dallas-Fort Worth Metropolitan Area, bicycle and pedestrian enhancements are included as strategies to reduce the dependency on automobile travel. The plan identifies the widening of outside lanes on arterial streets to create a safer environment and recommends the development of a companion off-street system referred to as the Regional Veloweb. A Veloweb is composed of roads with limited stop signs and traffic

signals to accommodate fast moving bicyclists. According to the Regional Veloweb primary plan considerations, trails should go over or under major roadways (grade separated crossings). At intersecting roadways, pedestrian and bicyclists would be accommodated by sidewalks and designated bike lanes, as appropriate.

The Trinity Bicycle/Pedestrian Trail is included in the Regional Veloweb off-street trail system and is located within the project area. The Trinity Bicycle trail is located on land under the administration (control) of the Tarrant Regional Water District (TRWD) and is located adjacent to the Clear Fork of the Trinity River, generally adjacent to maintenance roads controlled by the TRWD. These areas will be spanned by bridge structures and the ownership of this land will not change hands for this project. The bicycle trail as it exists today, should not be disturbed by this project because SH 121T will span the river and the bicycle trail.

Construction of SH 121 T will require the temporary closure of this bike trail at two locations. One location of the trail proposed for temporary closure is found adjacent to the west bank of the Clear Fork of the Trinity River south of the existing IH-30 crossing of the river. The second location of the trail proposed for temporary closure is found up stream (to the southwest) of the first location and adjacent to the north bank of the Clear Fork of the Trinity River between Bryant Irvin Road and Hulen Street.

The proposed SH 121 T will be constructed on structure at these locations and will span the bike trail and all property controlled by the TRWD. Construction activities at these locations will include hanging span structure support beams and construction of the span structure. This construction will require moving construction material above the trail. No construction machinery will be allowed on the trail.

In order to ensure the safety of the public, the trail must be closed to trail users during construction activities, i.e. moving support beams above the trail, at these locations. Closure of the trail at these locations will be temporary and of short duration. The trail will be closed

to trail users only when the area is operating as a construction zone. When construction activities at each location pose no potential harm to trail users the trail will be re-opened for use at that location. No property ownership transfers for any portion of the bike trail or for any property controlled by TRWD will occur. No portion of the bike trail or property controlled by TRWD will be retained for long term use.

TxDOT proposes to provide a reasonable, and safe detour route for the bicycle trail users during the temporary closure of the bicycle trail for construction at the above described locations, pursuant to 23 U.S.C. 109 (m). The proposed detour locations are depicted on Exhibit V-1. The temporary bicycle trail closure will not result in temporary or permanent adverse changes to the activities, features, or attributes which are essential to the purpose or functions of the trail. TxDOT will coordinate the route and operation of the temporary detour with the TRWD. Prior to construction, TxDOT will secure an agreement with the City of Fort Worth and the TRWD concerning the temporary closure of this trail and the temporary detour at the above-described locations. These agreements will be included in the Final Environmental Impact Statement.

Members of the Fort Worth Parks and Recreation Department have been present at several meetings during the extensive public involvement process for SH 121 T. This process has included numerous public meetings conducted by the 121 T team, the Citizen Advisory Committee (City of Fort Worth), the Peer Review (City of Fort Worth), the Project Development Team (City of Fort Worth), and other public meetings held by the City of Fort Worth. Documentation of the City of Fort Worth's participation in this extensive public involvement process is on file at the TxDOT Fort Worth District Office.

The project would cross the existing off-street hard surface trail along the Trinity River, which is part of the Fort Worth Trinity Trails, at two locations along the Clear Fork of the Trinity River. *Mobility 2025 Plan Update* maintains an inventory of existing and planned bicycle and pedestrian facilities. There are no planned or programmed trails along

Southwest Parkway or within project limits. The nearest planned bicycle or pedestrian facilities are the on-street system bicycle route and the City adopted off-street bicycle/pedestrian route located within the Forest Park area.

The project would be a multi-lane controlled access roadway and, as such, would not incorporate design for pedestrian or bicyclist facilities.

Alternatives A, B, C and D

Impacts to existing bicycle or pedestrian facilities would be limited to the construction phase with no long-term impacts expected. Design of the project provides for the primary consideration of the Regional Veloweb by providing grade-separated crossings at the existing trails. A map of the existing trails (Exhibit V-1) depicts the PSC and bicycle and pedestrian facilities that would be affected by construction.

No-build Alternative

The No-build alternative would have no impact to bicycle or pedestrian facilities.

Section 4(F) Impacts

Section 4(f) is the national policy created to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. It is part of the DOT Act of 1966. Regulations issued by the FHWA implementing the 1966 DOT act and the 1966 Federal Highway Act, as amended by the 1968 Federal Highway Act, require coordination with jurisdictional agencies when Federal projects use public parks, recreation lands, wildlife and waterfowl refuges or historic sites. The purpose of Section 4(f) is to protect such lands by requiring additional scrutiny and meeting of rigorous test before their use in a transportation project can be approved. Section 4(f) states that land from a

publicly owned park, recreation area, wildlife/waterfowl refuge or historic site can be used for a transportation project only if:

1. There is no feasible and prudent alternative to the use of the resource and
2. All possible planning has been taken to minimize harm to the resource.

Publicly Owned Parks, Recreation, Wildlife and Waterfowl Refuge Lands

Other than the Trinity Bicycle/Pedestrian Trail, there are no publicly owned lands for parks, recreation areas, wildlife and waterfowl refuge that could be classified as Section 4 (f) lands within the project area. No ROW for this project would be required from publicly owned parks, recreation areas, wildlife and waterfowl refuge of National, State, or local significance.

The Trinity Bicycle/Pedestrian Trail along the Clear Fork of the Trinity River, maintained by the City of Fort Worth Parks and Recreation Department, would not be permanently affected by this project. Measures to avoid impacts to the trail have been addressed on pages V-32 and V-33. No permanent impacts to the trail would occur due to the project. The TPWD 1995 Texas Outdoor Recreation Plan (TORP) shows no plans being developed for future public facilities and community services within the project area.

There are no wild or scenic rivers as designated by the National Park Service within the PSC or vicinity.

Historic Sites

A buried prehistoric site has been located on the south side of the Clear Fork of the Trinity River (March 1999 survey). This site is within the northern section of the PSC. Regulatory coordination regarding the possible significance of this site is ongoing. Due to its intact nature, good organic preservation and the presence of intact rock or hearth features, the site might be eligible for inclusion on the NRHP and/or as a SAL. The results of the survey

suggest that no additional prehistoric sites exist within the PSC, much of which has been disturbed by historic fill.

Alternatives A, B, C and D

Alternatives A and C are not anticipated to require takings from historic properties. Alternatives B and D have been identified as having potential impacts at the Holly Water Plant and the Lancaster Bridge that would require Section 4(f) evaluations.

No-build Alternative:

The No-build alternative would have no impact on Section 4(f) properties.

Air Quality Impacts

In order to protect the public health, safety and welfare from the hazardous affects of air pollution, the Clean Air Act of 1970 mandated the establishment of the NAAQS. Table V-5 lists both primary and secondary standard pollutant concentrations for sulfur dioxide (SO_2), particulate matter (PM), CO, O_3, NOx and lead (Pb). When the pollutant levels within an area cause a violation of the standard, the area is classified as non-attainment for the pollutant.

TABLE V-5
NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

Pollutant	Averaging Period	Standard	Primary NAAQS	Secondary NAAQS
Ozone (O_3)	1-hour*	Not to be at or above this level on more than three days over three years	125 ppb	125 ppb
	8-hour	The average of the annual fourth highest daily eight-hour maximum over a three-year period is not to be at or above this level	85 ppb	85 ppb
Carbon Monoxide (CO)	1-hour	Not to be at or above this level more than once per calendar year	35.5 ppm	35.5 ppm
	8-hour	Not to be at or above this level more than once per calendar year	9.5 ppm	9.5 ppm
Sulfur Dioxide (SO_2)	3-hour	Not to be at or above this level more than once per calendar year	-	550 ppb
	24-hour	Not to be at or above this level more than once per calendar year	145 ppb	-
	Annual	Not to be at or above this level	35 ppb	-
Nitrogen Dioxide (NO)	Annual	Not to be at or above this level	54 ppb	54 ppb
Respirable Particulate Matter (10 microns or less) (PM_{10})	24-hour	The three-year average of the annual 99th percentile for each monitor within an area is not to be at or above this level	155 $\mu g/m^3$	155 $\mu g/m^3$
	Annual	The three-year average of annual arithmetic mean concentrations at each monitor within an area is not to be at or above this level	51 $\mu g/m^3$	51 $\mu g/m^3$
Respirable Particulate Matter (2.5 microns or less) ($PM_{2.5}$)	24-hour	The three-year average of the annual 98th percentile for each population- oriented monitor within an area is not to be at or above this level	66 $\mu g/m^3$	66 $\mu g/m^3$
	Annual	The three-year average of annual arithmetic mean concentrations from single or multiple community-oriented monitors is not to be at or above this level	15.1 $\mu g/m^3$	15.1 $\mu g/m^3$
Lead (Pb)	Quarter	Not to be at or above this level	1.55 $\mu g/m^3$	1.55 $\mu g/m^3$

**Applicable for non-attainment areas only.*
Data Source: TNRCC's National Ambient Air Quality Standard.

Under the CAAA of 1990, the EPA was authorized to designate areas failing to meet O_3 standards. The proposed Southwest Parkway (SH 121T) is located within a non-attainment area for O_3, Tarrant County. The CAAA required the State to submit a SIP to the EPA. The latest SIP revisions on inspection/maintenance measures for the Dallas/Fort Worth O_3 nonattainment area were approved by TNRCC in October of 2001. The motor vehicle emissions budget contained in the SIP was determined adequate for transportation conformity in October of 2000. This legal document (SIP) is a collection of regulations that explain how the State would reduce emissions and help meet ozone standards. The CAAA also required the metropolitan planning organizations and the DOT to determine the conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded under Title 23 USC or the Federal Transit Act.

The air quality impacts of any transportation project are addressed by applying a mesoscale and a microscale analysis. The first one is performed on those pollutants that cannot be analyzed on a project-by-project basis but by region, such as ozone (O_3). A microscale analysis is performed on carbon monoxide (CO), which is a project-related concern.

Mesoscale Analysis

Five areas in Texas: Houston/Galveston-Brazoria, Beaumont-Port Arthur, Dallas/Fort Worth, and El Paso are in non-attainment for ozone under the 1-hour standard. Under this standard, ozone concentrations of 125 ppb should not be met or exceeded more than three times in three consecutive years at the same monitoring site.

NCTCOG and RTC conducted the air quality conformity determinations for *Mobility 2025 Plan Update* and for the 2002-2004 TIP for Metroplex. The NCTCOG used the EPA's Mobile Source Emission Factor Model (Mobile5a_h) for the 2007, 2015 and 2025 analysis years for the conformity analysis. The VOCs and NOx emissions from each of the above mentioned action scenario years are all under the emission budget. Both precursors of O_3

meet conformity criteria. According to the Plan, the project is programmed to consist of six lanes from IH 30 to IH 20 in 2007, 2015 and 2025; and four lanes from IH 20 to FM 1187 for the same years. Construction of the facility would be in stages, with ultimately six lanes between IH 30 and IH 20 and four lanes between IH 20 and FM 1187. The ultimate number of lanes for the facility would be in conformity with *Mobility 2025 Plan Update* "Freeway Segments for the Fort Worth District". Results of the conformity determination show that *Mobility 2025 Plan Update* and the 2002-2004 TIP meet the transportation requirements of the CAAA (42 USC. 7504, 750(c) and (d) as approved on October 19, 2001, the SIP, and the transportation conformity rule (40 CFR Parts 51 and 93).

Southwest Parkway is part of the *Mobility 2025 Plan Update* as one of the facilities to improve the regional transportation system by the construction of a new tollway facility and a rural highway southwest of Tarrant County. Therefore, the project would meet air quality conformity as stated on the Plan.

Microscale Analysis

Tarrant County is in attainment with CO standards. CO concentrations have not exceeded the 1-hour standard of 35.5 ppm as of April 24, 2002. A monitoring site located on Ross Avenue near downtown Fort Worth records 1-hour CO concentrations in ppm for the area. Monthly reports provided by the TNRCC Data Management & Analysis Department show daily maximum 1-hour readings at the station for 1999, 2000, 2001, and 2002 (up to April 25, 2002). The maximum 1-hour concentrations for each year are shown on Table V-6 as well as the month of occurrence. The reports show no values exceeding the 35.5 ppm standard. The highest concentration was 4.8 ppm recorded in April of 1999. This concentration is 14 percent of NAAQS.

TABLE V-6

YEARLY MAXIMUM 1-HOUR CO CONCENTRATIONS FOR YEARS 1998 THROUGH 2001

Year	Max 1-Hour CO Concentration in ppm	Month
1999	4.8	April
2000	3.8	January
2001	3.4	November & December
2002	4.0	February

Source: TNRCC Data Management and Analysis Department as of 4/25/2002.

For this analysis the worst case scenario was assumed using Alternative A ROW. The Mobile 5A Mobile Source Emission Model and CALINE3 California Line Source Model were used to predict the hourly CO concentrations for the estimated time of construction completion (ETC), 2005 and the ETC+20, 2025. The Mobile 5a version was used in order to include the proper anti-tampering program credits. The model was executed using the hourly, winter simulation during which CO concentrations tend to be the highest. There are benefits gained from the inspection/maintenance (I/M) and anti-tampering (ATP) programs that have been in place since the mid 80's and early 90's, the existence of newer more efficient vehicles, and the elimination of old and inefficient vehicles from the roadway. Design speeds used were 70 miles per hour (mph) on the north and south main lanes of the facility and 40 mph on frontage roads.

The emission factors in grams per mile (gm/mile) (Table V-7) were then used in CALINE3 to predict the 1-hour CO concentration generated by motor vehicles within the PSC. The worst-case meteorological conditions were used. Results were modeled every 30 degrees of wind direction, with a CO background concentration of 1.8 ppm and the 2005 and 2025 design hourly traffic volume. The CO total concentrations at sensitive receptors and along the ROW were determined for each case.

TABLE V-7

MOBILE 5A COMPOSITE EMISSION FACTORS
(gm/mile)

Speed in mph	2005	2020*
65**	18.35	11.06
50	9.57	7.5
40	12.43	7.7
Idle	96.6	76.34

**Maximum year that can be modeled with Mobile 5A.*
***Maximum speed that can be modeled with Mobile 5A.*

The highest 1-hour CO concentrations at each receptor and along the project ROW are depicted in Table V-8. Exhibits V-1-A through V-4-D depict the locations of air modeling sites.

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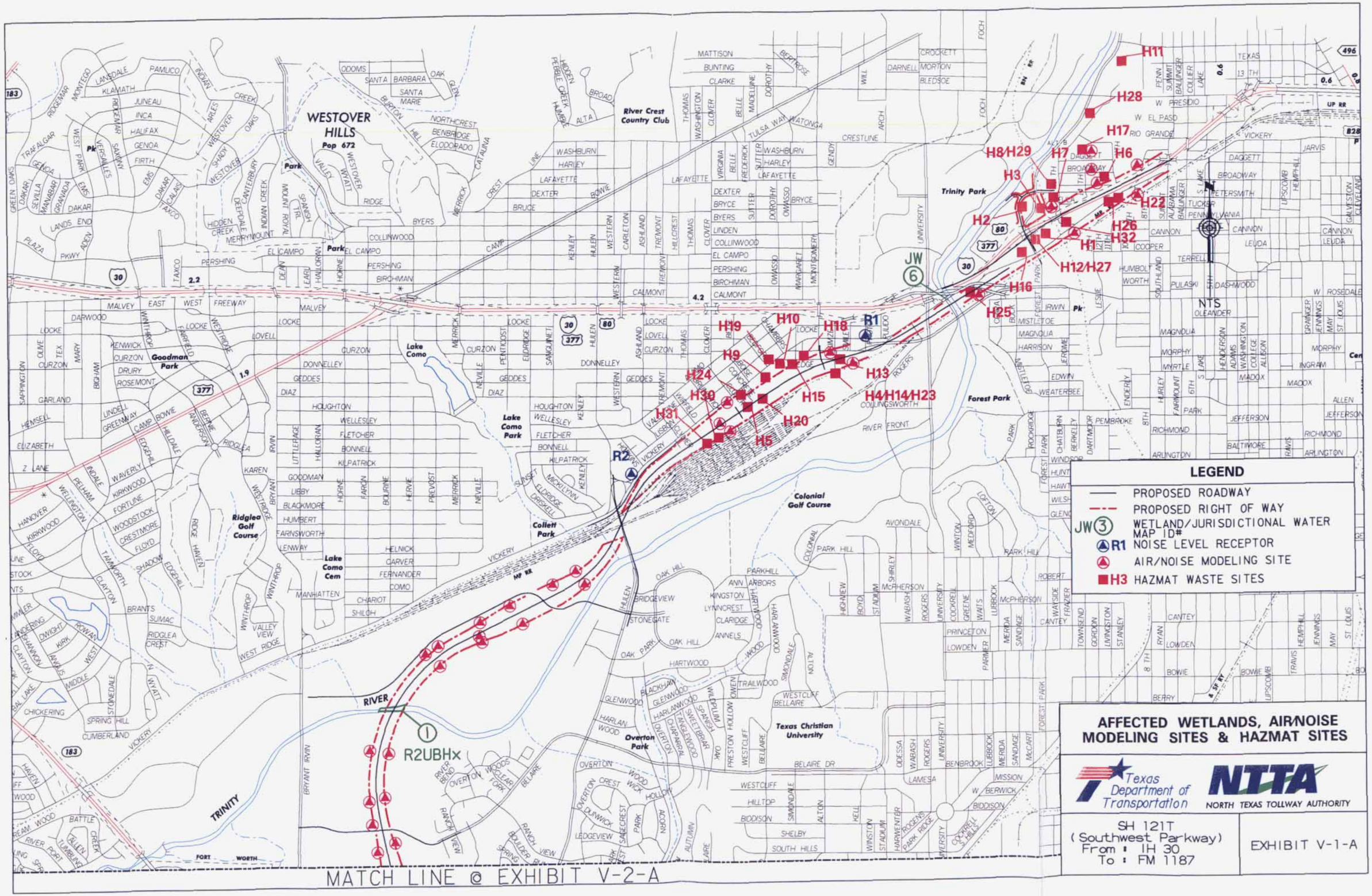
LEGEND
PROPOSED ROADWAY
PROPOSED RIGHT OF WAY
JW③ WETLAND/JURISDICTIONAL WATER MAP ID#
R1 NOISE LEVEL RECEPTOR
AIR/NOISE MODELING SITE
H3 HAZMAT WASTE SITES
AFFECTED WETLANDS, AIR/NOISE MODELING SITES & HAZMAT SITES
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187
EXHIBIT V-1-A
MATCH LINE @ EXHIBIT V-2-A
WESTOVER HILLS
Pop 672
River Crest Country Club
Trinity Park
Forest Park
Goodman Park
Lake Como
Lake Como Park
Lake Como Cem
Ridglea Golf Course
Colleit Park
Colonial Golf Course
Texas Christian University
Overton Park
TRINITY
RIVER
R2UBHx
JW ⑥
①
R1
R2
H1
H2
H3
H4/H14/H23
H5
H6
H7
H8/H29
H9
H10
H11
H12/H27
H13
H15
H16
H17
H18
H19
H20
H22
H24
H25
H26
H28
H30
H31
H32
NTS

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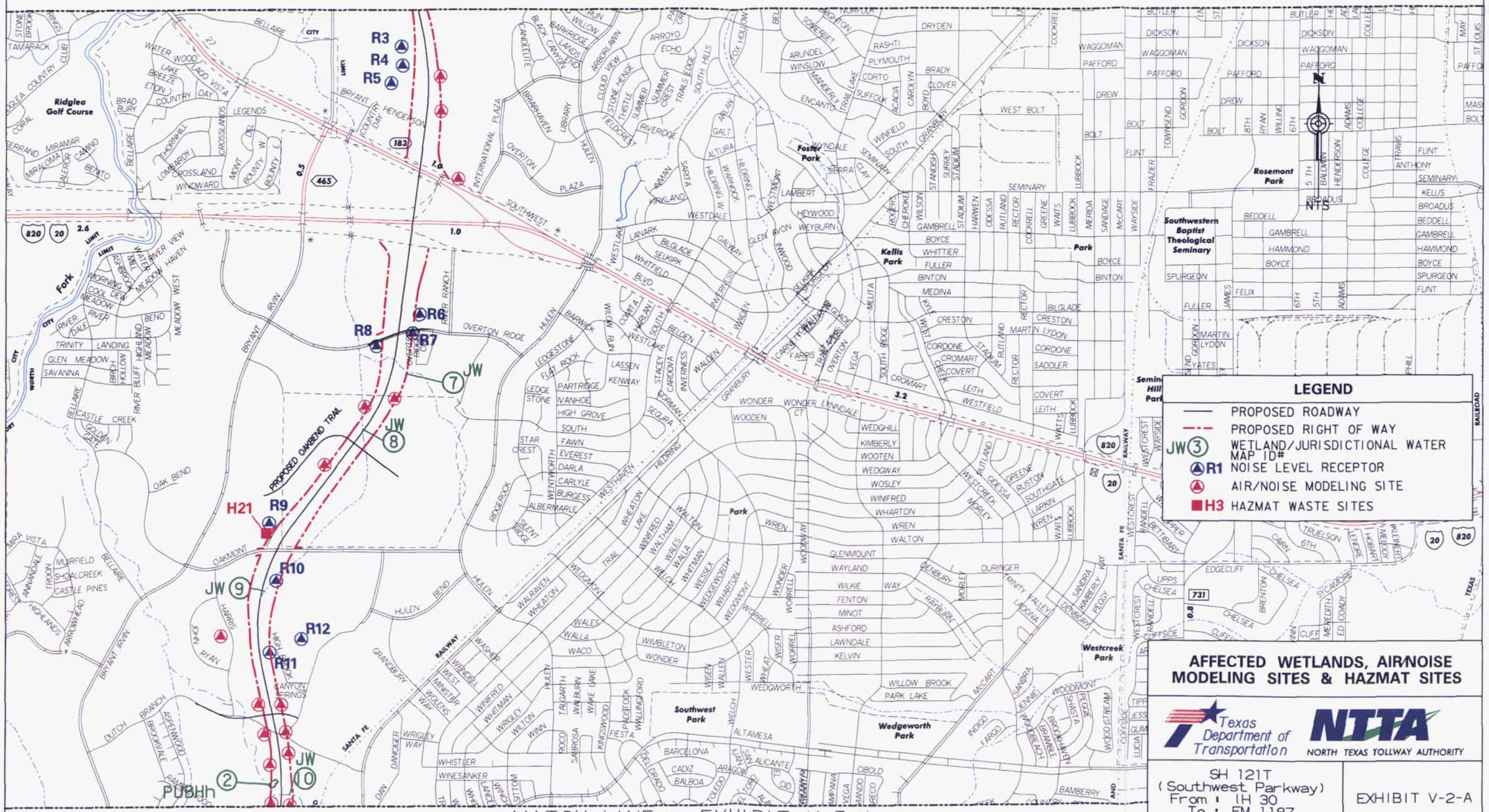
MATCH LINE @ EXHIBIT V-1-A



MATCH LINE @ EXHIBIT V-3-A

AFFECTED WETLANDS, AIR/NOISE MODELING SITES & HAZMAT SITES

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT V-2-A

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MATCH LINE @ EXHIBIT V-2-A

Longhorn Park

Laurel Land Memorial Park

JW 11

JW 12

JW 3

JW 13

JW 14

JW 15

JW 16

JW 17

JW 18

JW 19

PUBHh 3

PUBHh 4

PROP. SYCAMORE SCHOOL RD.

PROP. RISINGER RD.

PROP. McPHERSON RD.

ALTA MESA

OLD GRANBURY ROAD

SYCAMORE SCHOOL RD.

COLUMBUS

ATCHISON, TOPEKA & SANTA FE

AT & SF RY

FRANCIS VILLAGE

ROCKY CREEK

OLD GRANBURY

W. CLEBURNE

SOUTH HULEN

OLD CLEBURNE

NORTH CROWLEY

CROWLEY RD.

Sycamore Creek

NTS

LEGEND

PROPOSED ROADWAY

PROPOSED RIGHT OF WAY

JW 3 WETLAND/JURISDICTIONAL WATER MAP ID#

R1 NOISE LEVEL RECEPTOR

AIR/NOISE MODELING SITE

H3 HAZMAT WASTE SITES

MATCH LINE @ EXHIBIT V-4-A

AFFECTED WETLANDS, AIR/NOISE MODELING SITES & HAZMAT SITES

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT V-3-A

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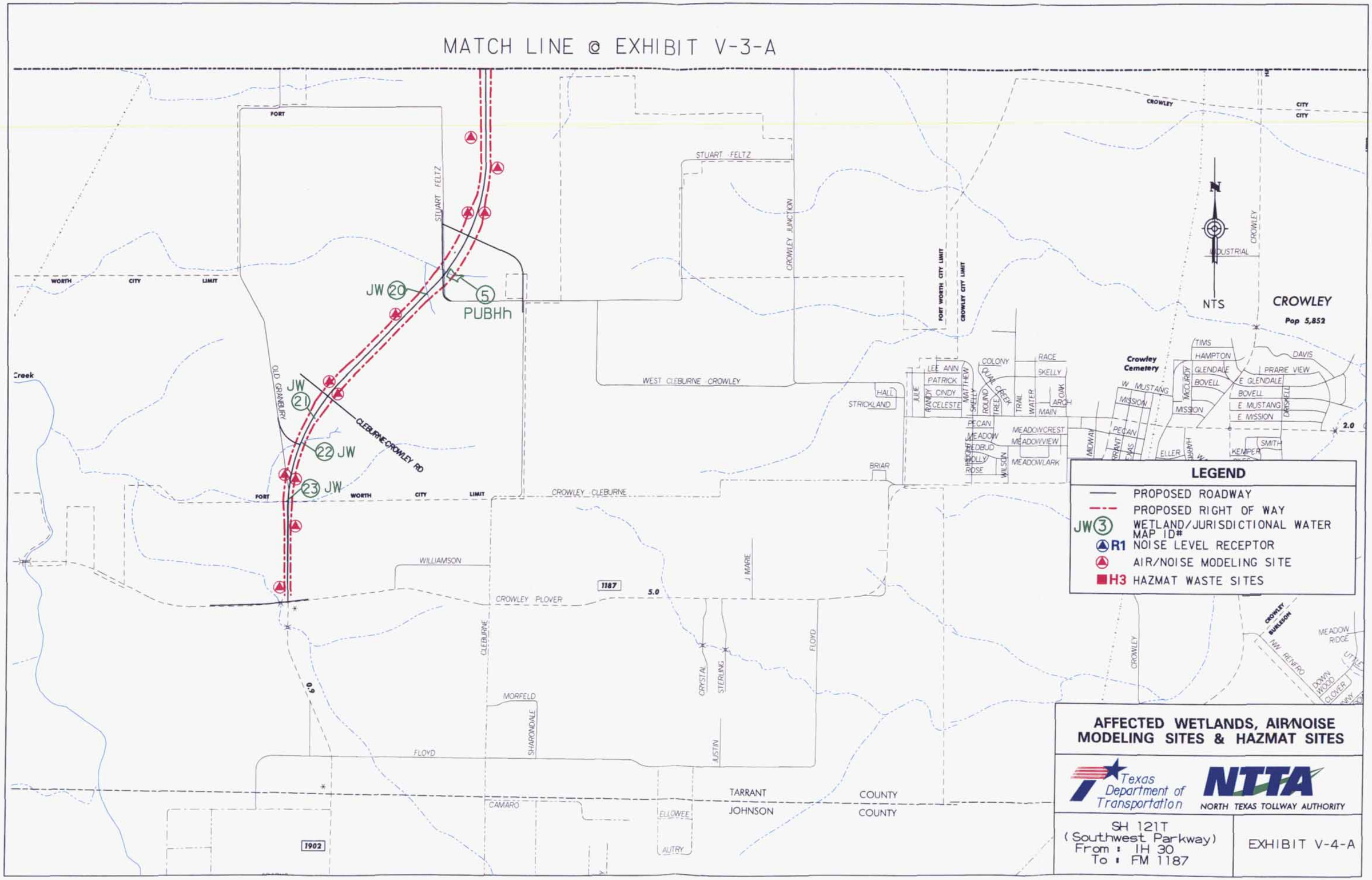
MATCH LINE @ EXHIBIT V-3-A



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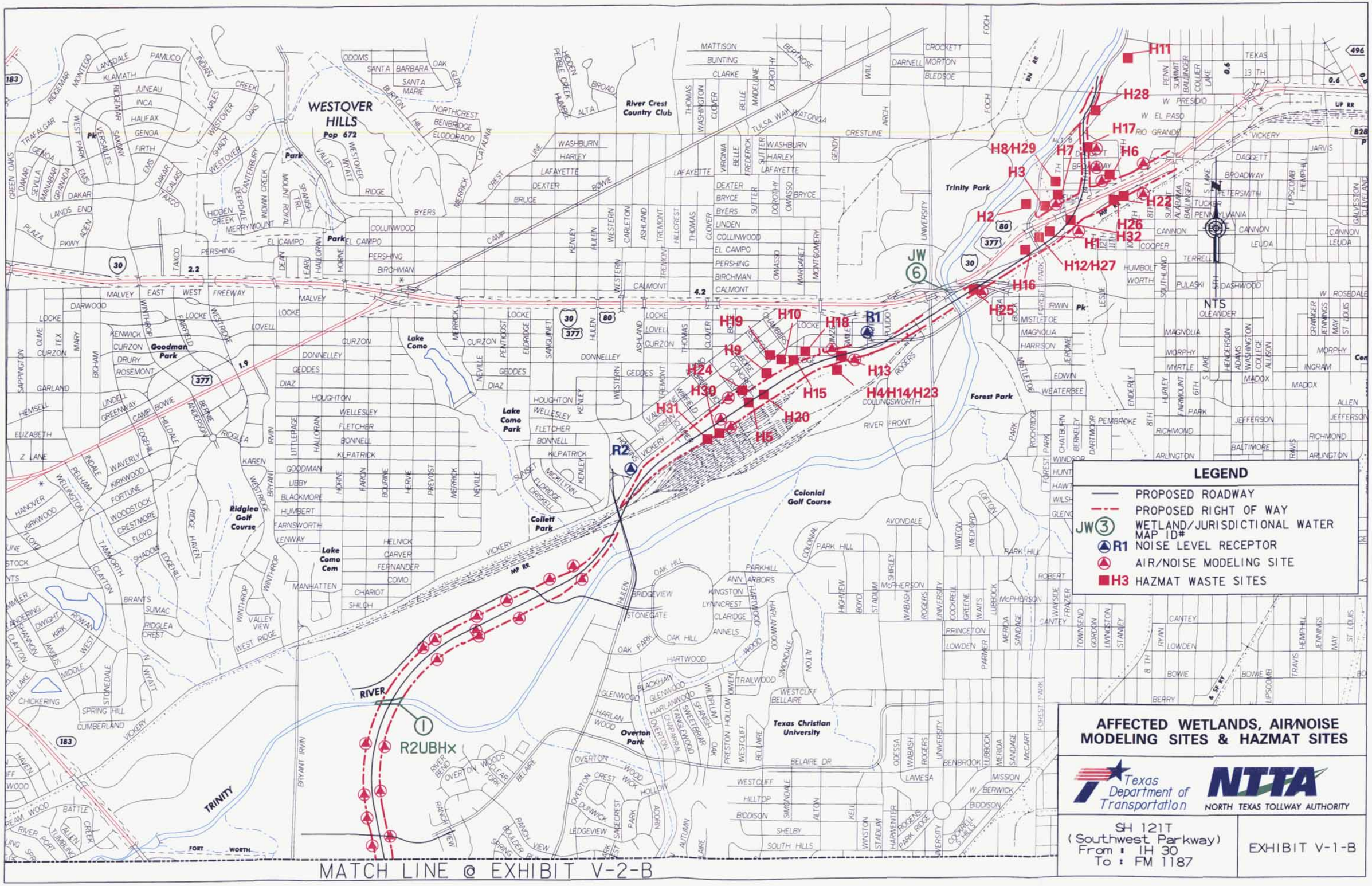
LEGEND
PROPOSED ROADWAY
PROPOSED RIGHT OF WAY
JW③ WETLAND/JURISDICTIONAL WATER MAP ID#
R1 NOISE LEVEL RECEPTOR
AIR/NOISE MODELING SITE
H3 HAZMAT WASTE SITES
AFFECTED WETLANDS, AIR/NOISE MODELING SITES & HAZMAT SITES
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187
EXHIBIT V-1-B
MATCH LINE @ EXHIBIT V-2-B
WESTOVER HILLS
Pop 672
River Crest Country Club
Trinity Park
Forest Park
Colonial Golf Course
Texas Christian University
Overton Park
Lake Como
Lake Como Park
Lake Como Cem
Goodman Park
Ridglea Golf Course
Collett Park
RIVER
TRINITY
R2UBHx
JW 6
R1
R2
H1
H2
H3
H4/H14/H23
H5
H6
H7
H8/H29
H9
H10
H11
H12/H27
H13
H15
H16
H17
H18
H19
H20
H22
H24
H25
H26
H28
H30
H31
H32
NTS

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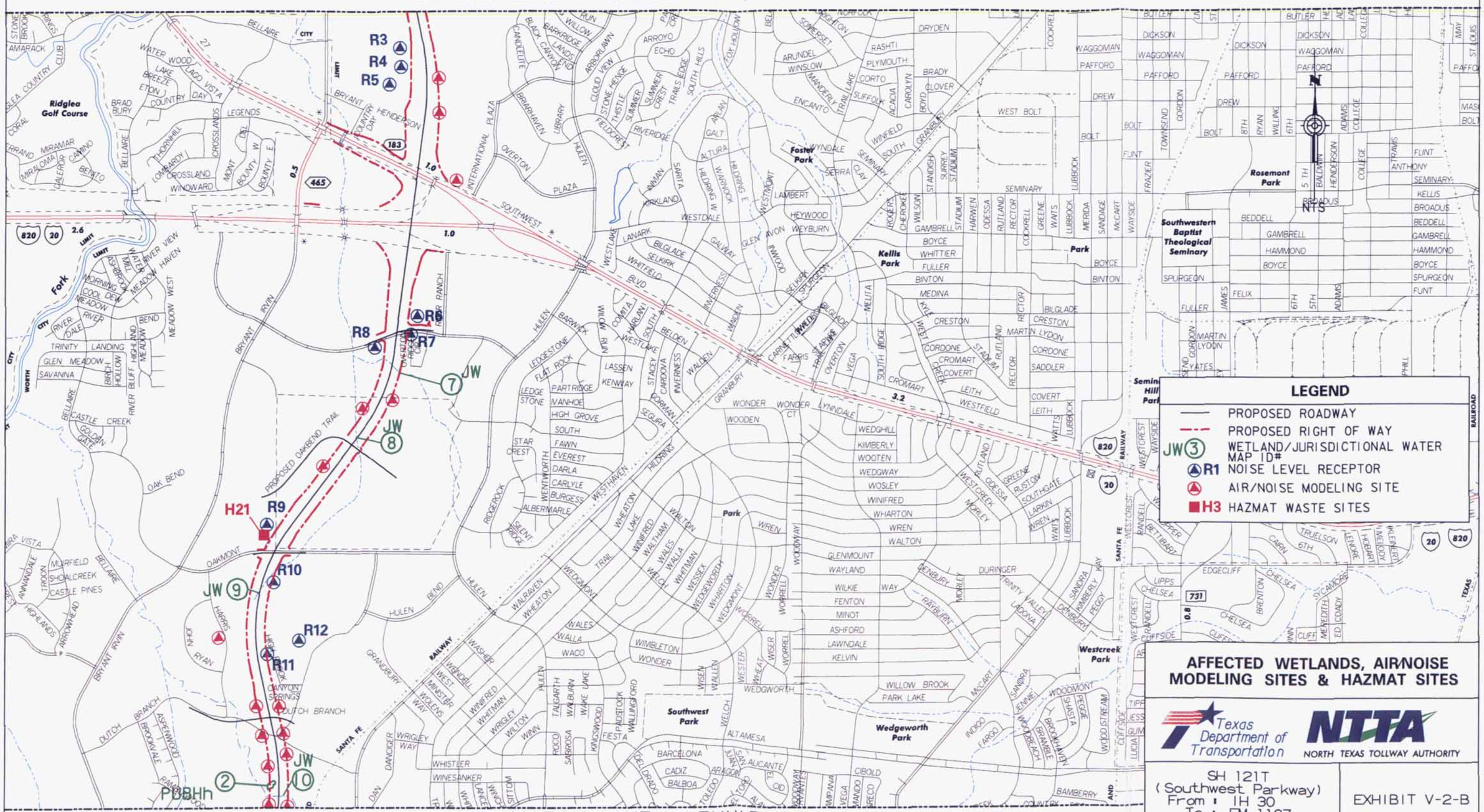
MATCH LINE @ EXHIBIT V-1-B



AFFECTED WETLANDS, AIR/NOISE MODELING SITES & HAZMAT SITES

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT V-2-B

MATCH LINE @ EXHIBIT V-3-B

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MATCH LINE @ EXHIBIT V-2-A

Longhorn Park

Laurel Land Memorial Park

JW 1
JW 2
JW 3
JW 4
JW 5
JW 6
JW 17
JW 18
JW 19
PUBHh 4

PROP. SYCAMORE SCHOOL RD.
PROP. RISINGER RD.
PROP. McPHERSON RD.

NTS

LEGEND

- PROPOSED ROADWAY
- PROPOSED RIGHT OF WAY
- JW 3 WETLAND/JURISDICTIONAL WATER MAP ID#
- R1 NOISE LEVEL RECEPTOR
- AIR/NOISE MODELING SITE
- H3 HAZMAT WASTE SITES

MATCH LINE @ EXHIBIT V-4-A

AFFECTED WETLANDS, AIR/NOISE MODELING SITES & HAZMAT SITES

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT V-3-B

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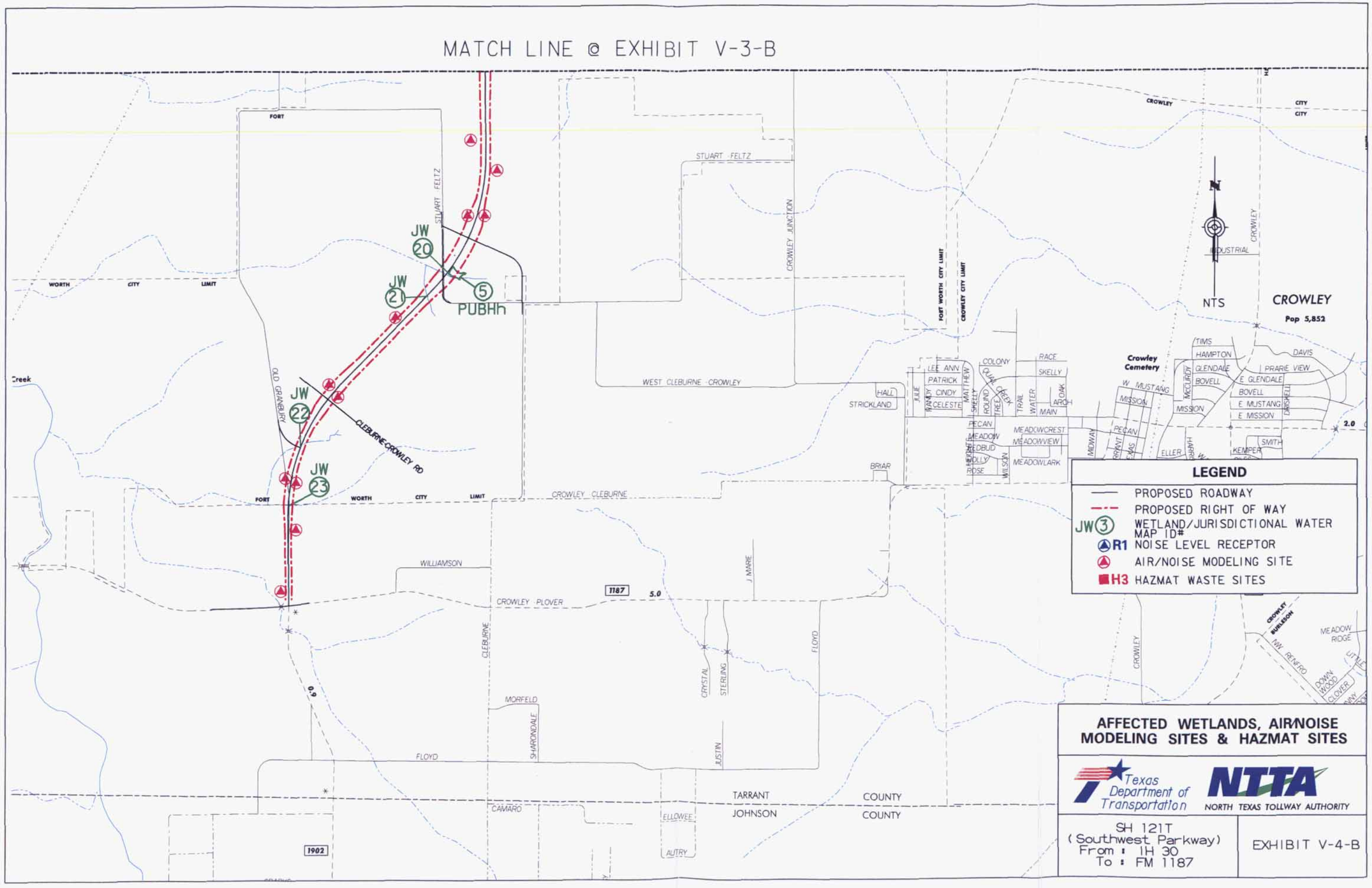
MATCH LINE @ EXHIBIT V-3-B



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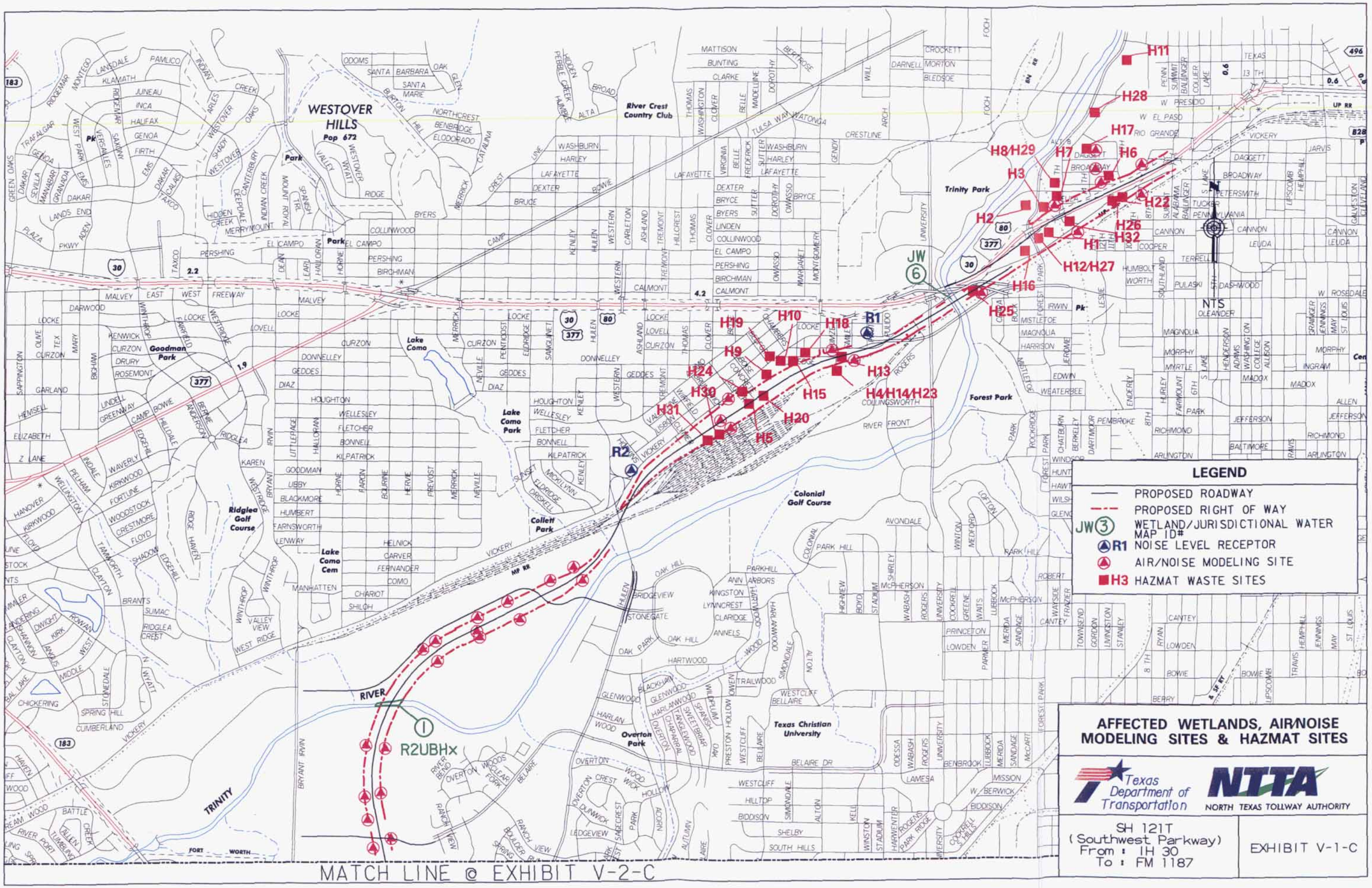
LEGEND
PROPOSED ROADWAY
PROPOSED RIGHT OF WAY
JW③ WETLAND/JURISDICTIONAL WATER MAP ID#
R1 NOISE LEVEL RECEPTOR
AIR/NOISE MODELING SITE
H3 HAZMAT WASTE SITES
AFFECTED WETLANDS, AIR/NOISE MODELING SITES & HAZMAT SITES
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187
EXHIBIT V-1-C
MATCH LINE @ EXHIBIT V-2-C
WESTOVER HILLS
Pop 672
River Crest Country Club
Trinity Park
Forest Park
Lake Como
Lake Como Park
Goodman Park
Ridglea Golf Course
Collett Park
Lake Como Cem
Colonial Golf Course
Overton Park
Texas Christian University
TRINITY
RIVER
R2UBHx
H1
H2
H3
H4/H14/H23
H5
H6
H7
H8/H29
H9
H10
H11
H12/H27
H13
H15
H16
H17
H18
H19
H20
H22
H24
H25
H26
H28
H30
H31
R1
R2
JW 6
NTS

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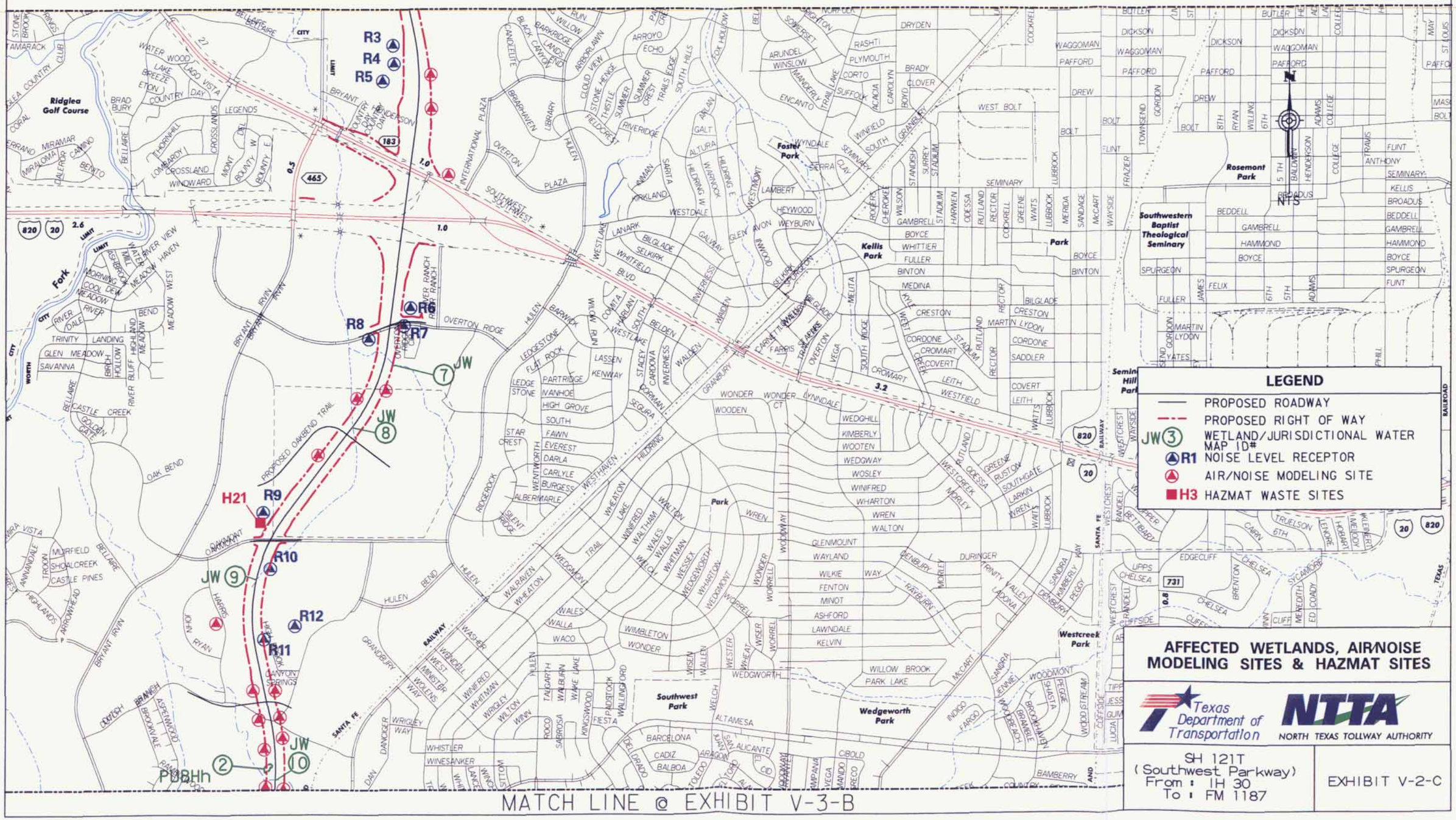
MATCH LINE @ EXHIBIT V-1-B



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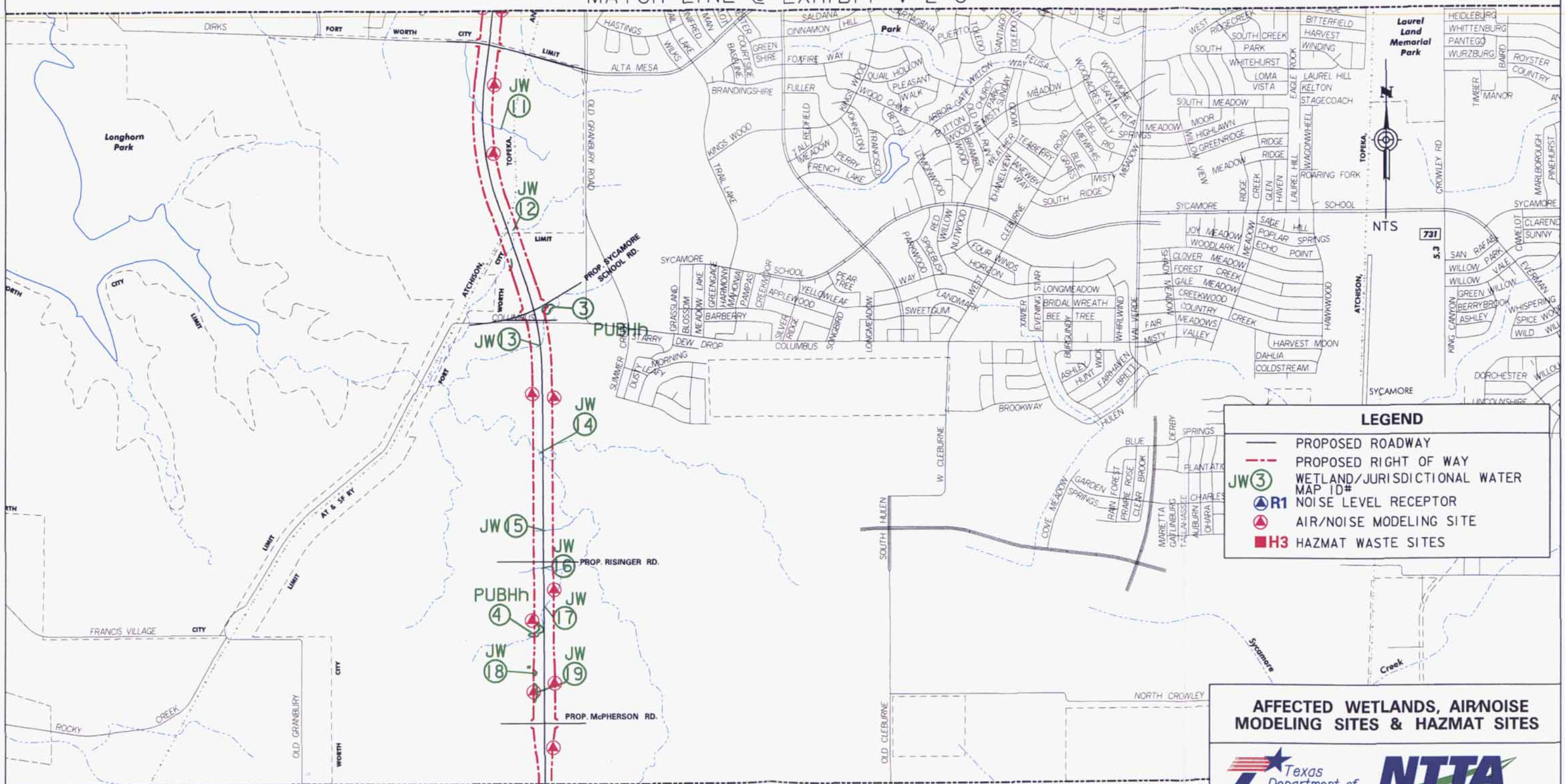

MATCH LINE @ EXHIBIT V-4-C

AFFECTED WETLANDS, AIR/NOISE MODELING SITES & HAZMAT SITES

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT V-3-C

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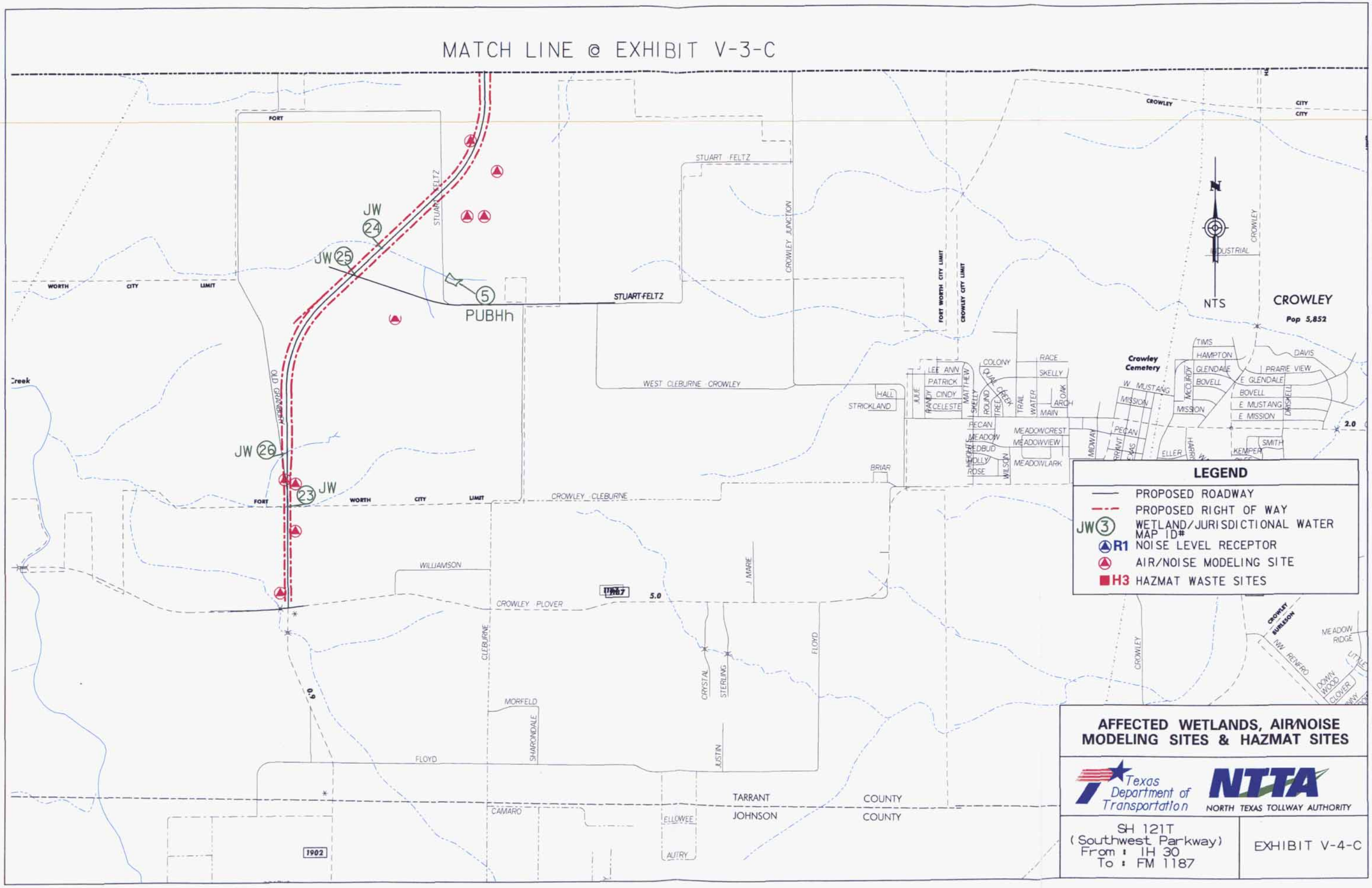
MATCH LINE @ EXHIBIT V-3-C



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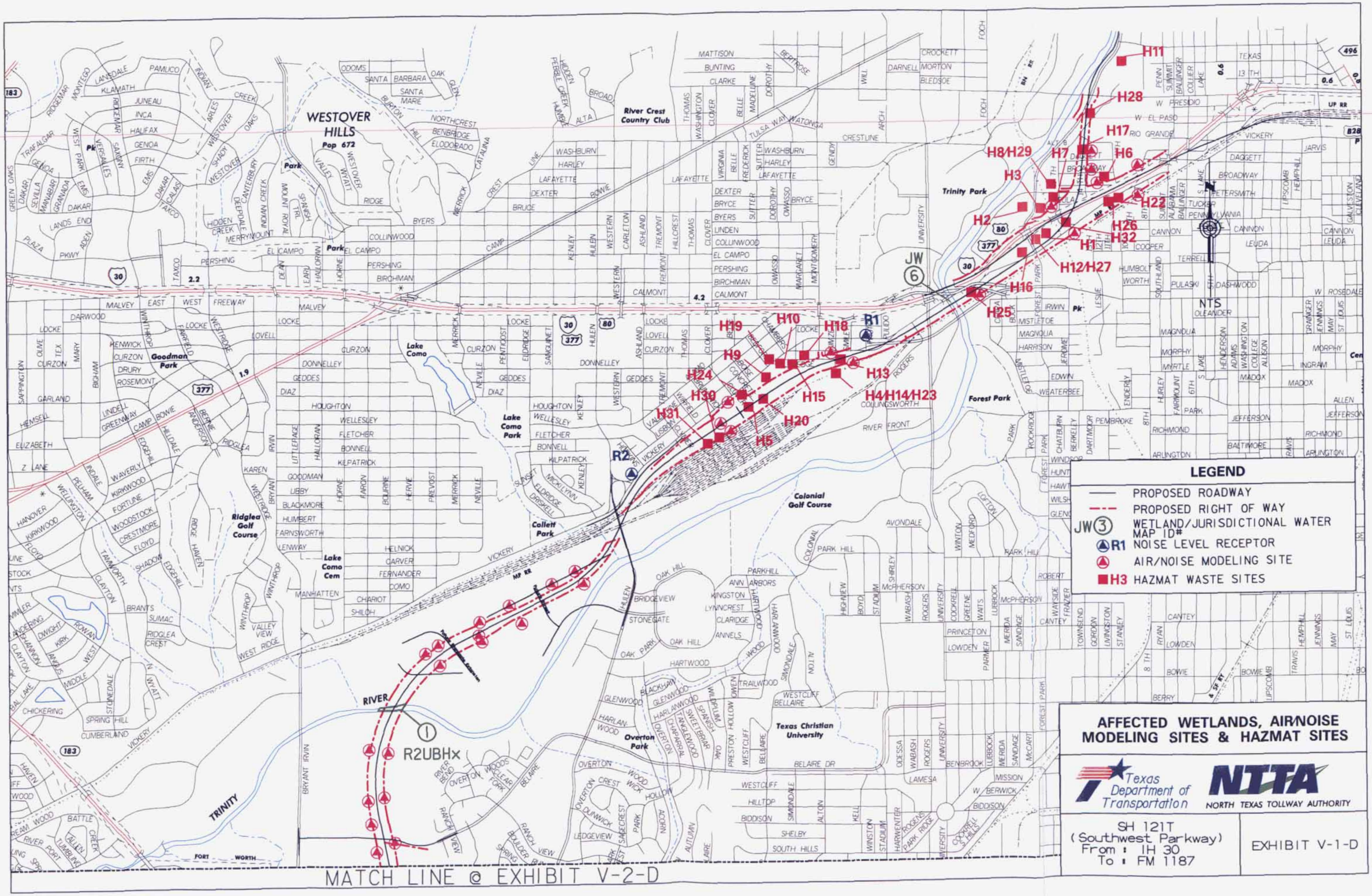
LEGEND
PROPOSED ROADWAY
PROPOSED RIGHT OF WAY
JW③ WETLAND/JURISDICTIONAL WATER MAP ID#
R1 NOISE LEVEL RECEPTOR
AIR/NOISE MODELING SITE
H3 HAZMAT WASTE SITES
AFFECTED WETLANDS, AIR/NOISE MODELING SITES & HAZMAT SITES
Texas Department of Transportation
NTTA
NORTH TEXAS TOLLWAY AUTHORITY
SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187
EXHIBIT V-1-D
MATCH LINE @ EXHIBIT V-2-D
WESTOVER HILLS
Pop 672
River Crest Country Club
Trinity Park
Forest Park
Lake Como
Lake Como Park
Lake Como Cem
Goodman Park
Ridglea Golf Course
Colonial Golf Course
Collett Park
Overton Park
Texas Christian University
TRINITY
RIVER
R2UBHx
R1
R2
JW 6
NTS
H1
H2
H3
H4/H14/H23
H5
H6
H7
H8/H29
H9
H10
H11
H12/H27
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H32

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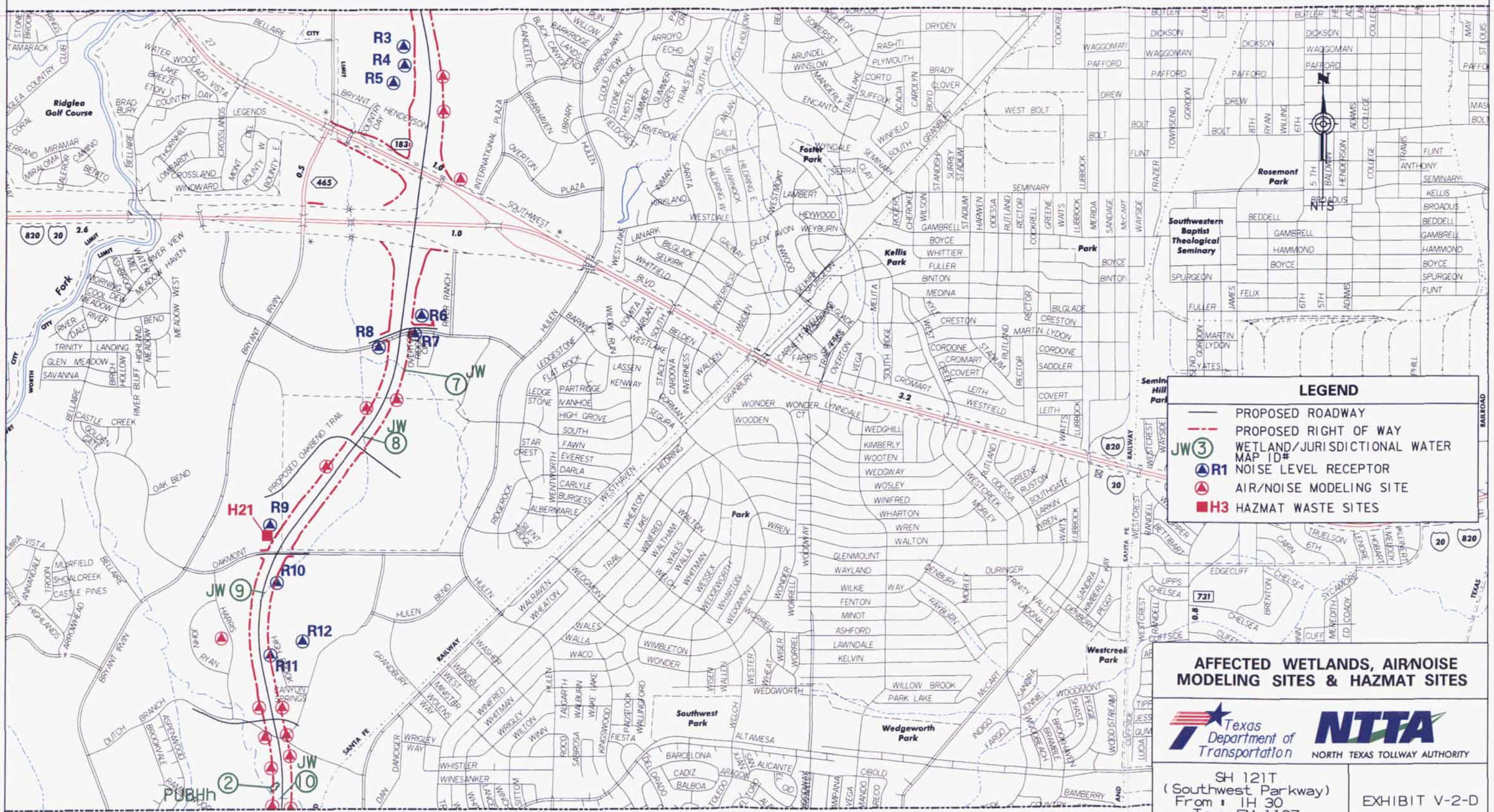
MATCH LINE @ EXHIBIT V-1-D



MATCH LINE @ EXHIBIT V-3-D

AFFECTED WETLANDS, AIR/NOISE MODELING SITES & HAZMAT SITES

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT V-2-D

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MATCH LINE @ EXHIBIT V-2-D

Longhorn Park

JW 11

JW 12

JW 3

PUBHh 3

PROP. SYCAMORE SCHOOL RD.

JW 14

JW 15

JW 16

PROP. RISINGER RD.

PUBHh 4

JW 17

JW 18

JW 19

PROP. McPHERSON RD.

NTS

LEGEND

- PROPOSED ROADWAY
- PROPOSED RIGHT OF WAY
- JW 3 WETLAND/JURISDICTIONAL WATER MAP ID#
- R1 NOISE LEVEL RECEPTOR
- AIR/NOISE MODELING SITE
- H3 HAZMAT WASTE SITES

MATCH LINE @ EXHIBIT V-4-D

AFFECTED WETLANDS, AIR/NOISE MODELING SITES & HAZMAT SITES

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121T
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT V-3-D

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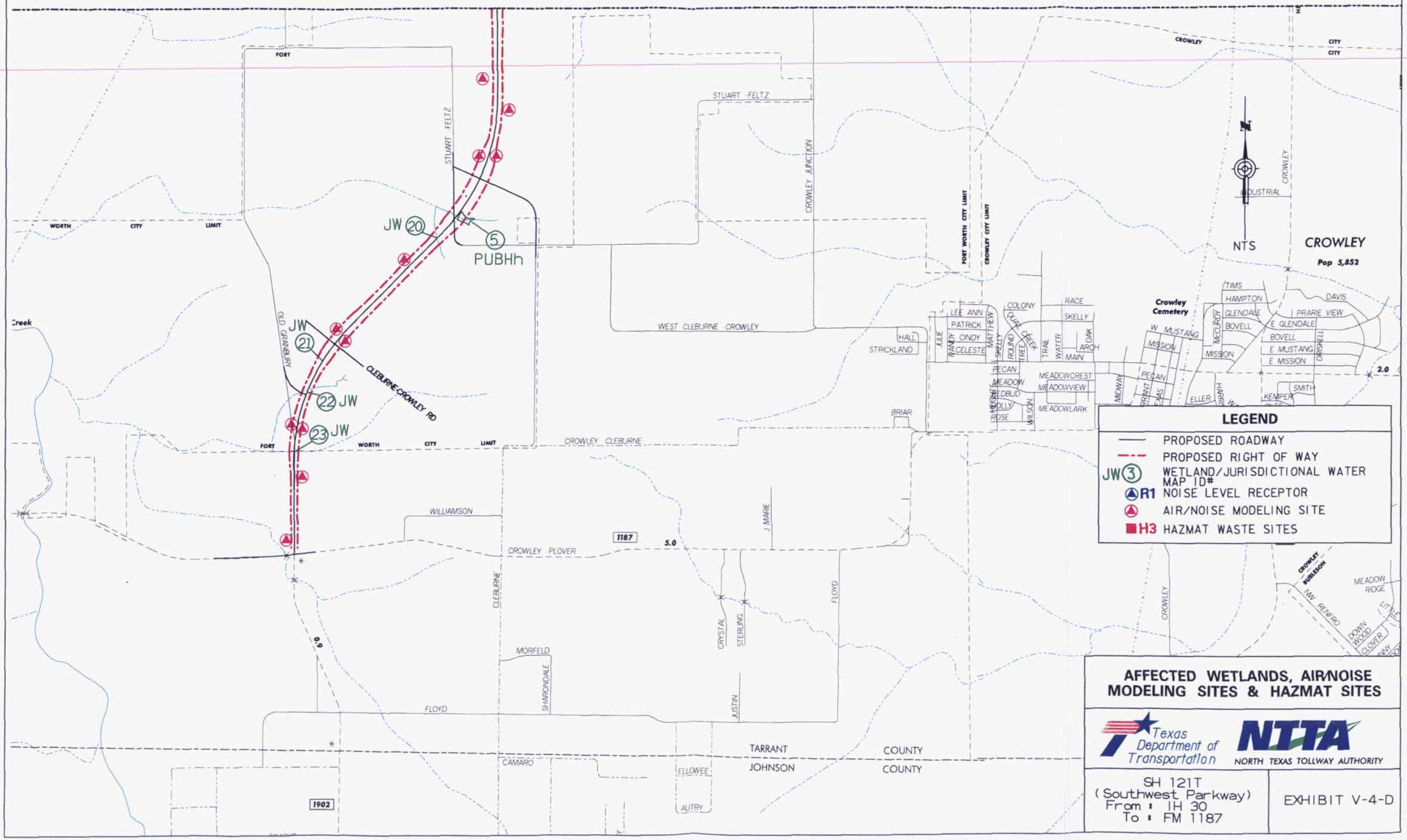
MATCH LINE @ EXHIBIT V-3-D



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Modeling results show that for the ETC year (2005), north of Bellaire Drive, the average percent of NAAQS (35.5 ppm) along the ROW is 14 percent and the average CO concentration is 4.8 ppm. South of Bellaire Drive, the average NAAQS is 9 percent with an average CO concentration of 4.3 ppm. And in ETC + 20 year (2025), north of Bellaire Drive, the average percent of NAAQS along the ROW is 17 percent and the average CO concentration is 6.7 ppm. South of Bellaire Drive, the average NAAQS is 13 percent with an average CO concentration of 4.3 ppm. None of the CO levels at the sensitive receptors (San Mateo Church, Country Day School, Hunters Green Apartments, Hunters Ridge Apartments, Marina Club Apartments, All Saints Hospital, Harris Methodist Hospital, Hulen Bend Addition and other residential areas) exceeded the 1-hour NAAQS standards. The Toll Plaza was analyzed using the appropriate emission factors to best describe the traffic activity at the approaching lanes and the tollbooths. The CO concentrations north and south of this area were modeled to be 11 and 16 percent of the NAAQS standard (35.5 ppm) in the year 2005 and 21 and 32 percent of the NAAQS standard in the year 2025.

TABLE V-8

PREDICTED 1-HR CARBON MONOXIDE CONCENTRATIONS IN PPM

Modeling Years	2005				2025			
Highway Area/Segment	**Traffic Volume in veh/hr**	**CO at Receptor**	**CO at ROW**	**Percent of NAAQS (35.5 ppm) at ROW**	**Traffic Volume in veh/hr**	**CO at Receptor**	**CO at ROW**	**Percent of NAAQS (35.5 ppm) at ROW**
East of Forest Park, north of IH 30	18,792	NA	5.6	16%	29,384	NA	7.5	21%
East of Forest Park, South of IH 30	19,656	NA	6.7	19%	27,840	NA	6.0	17%
East of Forest Park Boulevard, along Southwest Parkway, south of IH 30	16,956	NA	3.5	10%	22,032	NA	3.5	10%
West of Forest Park to Rosedale	2,0304	NA	3.3	9%	21,448	NA	2.2	6%
North of Toll Plaza along Vickery Boulevard	4,968	NA	3.9	11%	14,200	NA	7.6	21%
South of Toll Plaza	4,968	NA	5.6	16%	14,200	NA	11.4	32%
Hulen Street bridge	8,424	NA	5.0	14%	11,760	NA	7.1	20%
San Mateo Church	5,184	3.8	6.0	17%	10,800	5.1	8.5	24%
South of Hulen Street bridge to proposed Stonegate	3,981	NA	3.4	10%	12,460	NA	5.1	14%
Proposed Stonegate to the Trinity River	8,424	NA	4.9	14%	12,520	NA	7.9	22%
South of the Trinity River to Bellaire Drive	9,936	NA	4.6	13%	26,460	NA	6.5	18%
Bellaire Drive to SH 183 at Country Day School: Kindergarden area Middle school area Library area	5,847	2.9 2.8 2.6	3.3	9%	11,500	3.4 3.2 2.7	3.7	10%
South of Overton Ridge Boulevard to proposed Oakmont Boulevard: Hunters Green Apartments Hunters Ridge Apartments Marina Club	7,344	3.3 3.4 3.6	3.3	9%	9,120	3.0 2.9 3.1	3.8	11%
South of Overton Ridge Boulevard to proposed Oakmont Boulevard: All Saints Hospital	6,480	2.5	3.3	9%	18,420	3.0	4.9	14%
South of Oakmont Boulevard to Dutch Branch Road: Hulen Bend Addition (under construction) Harris Methodist Hospital	3,888	2.4	3.1 2.3	9%	12,180	3.1	4.4 2.8	12%
Dutch Branch Road to Dirks Road New Residence 1 New Residence 2	6,264	3.3 3.8	3.3	9%	12,380	4.2 4.6	4.0	13%
Sycamore School Road To proposed McPherson	4,860	NA	2.6	7%	8,640	NA	3.7	11%
Proposed McPherson to No Name Road	2,160	NA	3.6	10%	8,040	NA	6.2	17%
No Name Road to FM 1187	2,052	NA	2.9	8%	8,320	NA	5.6	16%

Alternatives A, B, C and D

Based on Mobile 5A and CALINE3 air quality models, the Build alternatives would not degrade the air quality in the PSC. CO concentrations are not expected to exceed current NAAQS standards. Mobile emissions are predicted to decrease due to program improvements and the existence of more efficient vehicles, decreasing the carbon monoxide concentrations. The *Mobility 2025 Plan Update* includes the Build alternative of this project, its implementation would help improve air quality and meet the transportation needs of the future.

No-build Alternative

The No-build alternative would not conform to local transportation plans and programs. Based on the predicted 2025 population and employment growth and the traffic congestion, the No-build alternative of this project might contribute to air quality degradation.

Noise Impacts

A preliminary environmental noise assessment was conducted for the Southwest Parkway proposed alignment. The purpose of the assessment was to determine potential noise impacts on developed land adjacent to the alternatives under consideration. For this analysis the worst case scenario was assumed using Alternative A ROW. A more detailed, in depth analysis compliant with FHWA Regulation 23 CFR 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* and TxDOT's *1996 Guidelines for Analysis and Abatement of Highway Traffic Noise* will be performed for the preferred alternative, when selected, and included in the FEIS.

Sound Measurement Units

Sound from highway traffic is generated primarily from vehicle tires, engine and exhaust. It is commonly measured in decibels and is expressed as *dB*. Highway related noise is dependent on vehicle types, speeds and distances from the roadway to receivers.

A dB is a measure of the air pressure level produced by any particular sound, and is based on a logarithmic scale due to the wide variation in everyday noise. A louder sound produces greater amplitude of vibration of air molecules, (the greater the amplitude of the wave, the greater its intensity). Sound occurs over a wide range of frequencies. Not all frequencies are detectable by the human ear; therefore, an adjustment is made to the high and low frequencies to approximate the way an average person hears traffic sounds. This adjustment is called *A-weighting* and is expressed as *dB(A)*. Also, because traffic sounds are never constant due to the changing number, type and speed of vehicles, a single value is used to represent the average or *equivalent* sound level and is expressed as L_{eq}. L_{eq} is defined as the equivalent steady state sound levels, which, in a stated period of time, contains the same acoustic energy as the time-varying sound level during the same period. $L_{eq}Hr$ means the L_{eq} established over a one-hour period. Common outdoor and indoor sound levels are listed on Table V-9.

TABLE V-9

COMMON SOUND/NOISE LEVELS

Outdoor	dBA	Indoor
Pneumatic hammer	100	Subway Train
Gas lawn mower at 3 ft		
	90	Food blender at 3 ft
Downtown (large city)	80	Garbage disposal at 3 ft
Lawn mower at 90 ft	70	Vacuum cleaner at 9 ft
		Normal speech at 3 ft
Air conditioning unit	60	Clothes dryer at 3 ft
Babbling brook		Large business office
Quiet urban (daytime)	50	Dishwasher (next room)
Quiet urban (nighttime)	40	Library

The FHWA has established NAC shown on Table V-10, for various land use activity areas that are used to determine if a traffic noise impact has occurred. A noise impact occurs when either the absolute or relative criterion is met:

1. ***Absolute Criterion***: The predicted noise level at a receiver approaches, equals or exceeds the NAC. *Approach* is defined as one dB(A) below the NAC. For example: a noise impact would occur at a category B residence if the noise level is predicted to be 66 dB(A) or above.

2. ***Relative Criterion***: The predicted noise level substantially exceeds the existing noise level at a receiver even though the predicted noise level does not approach, equal or exceed the NAC. *Substantially exceeds* is defined as more than 10 dB(A). For

example: a noise impact would occur at a category B residence if the existing level is 54 dB(A) and the predicted level is 65 dB(A), i.e., an 11 dB(A) increase.

TABLE V-10

FHWA NOISE ABATEMENT CRITERIA

Activity Category	DBA Leq	Description of Land Use Activity Areas
A	**57 (exterior)**	Lands on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	**67 (exterior)**	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals.
C	**72 (exterior)**	Developed lands, properties or activities not included in categories A or B above.
D	**—**	Undeveloped lands.
E	**52 (interior)**	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

The traffic noise analysis performed can be summarized as follows:

1. Identification of land use activity areas that might be impacted by traffic noise.
2. Determination of existing noise levels at sensitive locations such as school, hospitals, churches and residential areas.
3. Prediction of future noise levels.
4. Identification of possible noise impacts.
5. Consideration and evaluation of measures to reduce noise impacts.

When a traffic noise impact occurs, noise abatement measures must be considered. A noise abatement measure is any positive action taken to reduce the impact on an activity area.

Methodology

Presently the predominant noise generators north of Bellaire Drive in the Southwest Parkway project area are vehicular traffic and the Union Pacific Railroad Yard. Noise from the railroad yard is associated with an existing train hump station. This station is where railcars are released from the train they are on and sent over a hump to self propel to a new train by a computer operated switch network. The noise from the impact as the railcar connects with a new train can be heard from quite a distance. The hump station noise is dominant in the area and, thus, the noise levels associated with the proposed road would be lower than the existing noise levels.

Land use from Vickery Boulevard to FM 1187, is predominantly undeveloped with a few exceptions such as a school, a church, two hospitals and residential areas. The school, the church, the hospital and the multi-family residential areas have no frequent human outdoor activity areas between highway and receptor; therefore, they were analyzed as activity category E (interior), with FHWA noise abatement criteria of 52 dB(A). Because the single-family areas south of Oakmont Boulevard have backyards facing the proposed roadway, they were analyzed as activity NAC category B (exterior), with FHWA noise abatement criteria of 67 dB(A).

The following sensitive receptors were modeled along the roadway: San Mateo Church, R1, NAC category E; Marcus Cable, R2, NAC category C; Country Day School Kinder Garden Building, R3, Middle School, R4, and the library, R5, as NAC category E; Hunters Ridge Apartments, R6, Hunters Green Apartments, R7, and Marina Club Apartments, R8, NAC category E; All Saints Episcopal Hospital, R9, NAC category E; Hulen Bend Addition 1, R10, Hulen Bend Addition 2, R11, and High Brook Residential, R12, NAC category B.

ETC year (2005) noise levels for the interior categories were modeled and estimated using a noise reduction factor based on the type of building structure. Both ETC and ETC + 20 year

(2025) noise levels at each site, as well as receptor location are shown on Table V-11. Noise modeling sites were also located along the undeveloped land based on future land use or zoning designations. Predicted noise levels at each receptor were then generated for the design year 2025 for contour lines development. Exhibits V-1-A through V-1-D show the location of the noise monitoring/modeling sites.

The monitoring program used in the assessment was designed to obtain existing noise levels during the noisiest hour of the day. The noisiest hour of the day is referred to as the "peak hour". This is not necessarily when traffic volume is greatest, such as rush hour, but can be influenced more by heavy vehicles and speed. The peak hour for this project had been determined during a previous study performed in 1992, traffic patterns and volumes have not changed to a measurable degree and as such the peak hour developed from the '92 study was utilized. Measurements were recorded at the various receivers from 45 minutes to two-hour time intervals during the peak period.

The FHWA Traffic Noise modeling software was used to calculate predicted traffic noise levels. The model primarily considers the number, type and speed of vehicles; highway alignment and grade; cuts, fills and natural berms; surrounding terrain features; and the location of activity areas likely to be impacted by the associated traffic noise. Predicted traffic noise levels for the year 2025 were modeled at locations that represent activity areas B, C, D and E adjacent to the highway that might be impacted by traffic noise and that may potentially benefit from reduced noise levels.

Results

As indicated on Table V-11, predicted noise levels exceed ETC levels by a maximum of 5 dB(A), the NAC was approached, equaled or exceeded (absolute criterion) and substantially exceeded the existing levels at some of the receivers. Results show that a noise impact would occur at three out of twelve receivers because of the Build alternatives.

TABLE V-11
TRAFFIC NOISE LEVELS Leq(Hr)

Receiver	Site	Location	NAC Category	NAC Level	ETC 2005	ETC+20 2025	Change (+/-)	Impact*
R1NEW	San Mateo church-new building	3308 Lovell Avenue	E	52	39	43	+4	No
R1OLD	San Mateo church-old building	3308 Lovell Avenue	E	52	39	44	+5	No
R2	Vickery industrial area, Marcus Cable	4500 Vickery Boulevard	C	72	64	69	+5	No
R3	Country Day School: Kindergarden area	4200 Country Day Lane	E	52	43	45	+2	No
R4	Country Day School: Middle School area	4200 Country Day Lane	E	52	43	45	+2	No
R5	Country Day Shool: Library area	4200 Country Day Lane	E	52	40	43	+3	No
R6	Hunters Ridge Apartments	4850 River Ranch Boulevard	E	52	46	49	+3	No
R7	Hunters Green Apartmens	5101 Overton Ridge Road	E	52	46	49	+3	No
R8	Marina Club Apartments	5301 Overton Ridge Boulevard	E	52	48	51	+3	YES
R9	All Saints Episcopal Hospital	7100 Oakmont Boulevard	E	52	44	47	+3	No
R10	Hulen Bend Addition 1	West of High Brook residential	B	67	68	71	+3	YES
R11	Hulen Bend Addition 2	West of High Brook residential (south)	B	67	66	68	+2	YES
R12	High Brook residential area	6412 High Brook Drive	B	67	61	64	+3	No

**Impact was based on both absolute and relative criteria.*

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TABLE V-12
YEAR 2025 NOISE IMPACT CONTOURS

Location	Design Option	Alternatives	Undeveloped Area	Land Use	Impact Contour	Distance From ROW in ft
Hulen Street to Bellaire Road	SH 121 over Stonegate Boulevard	B,D	North and south of Stonegate Boulevard	Industrial	71	100
	SH 121T at grade	A,C	North and south of Stonegate Boulevard	Commercial	71	0
Bellaire Road	SH 121T over Bellaire Road	B,D	North and south of Bellaire Road	Residential	66	250
	SH 121T at grade	A,C	North and south of Bellaire Road	Residential	66	200
Overton Ridge to Dutch Branch	Overton Ridge at grade (SH 121T over)	B,C,D	North and south of Overton Ridge	Commercial	71	25
	Overton Ridge lowered (SH 121T over)	A	North and south of Overton Ridge	Commercial	71	0
Overton Ridge to Dutch Branch	Normal ROW*	B,C	East of SH 121T	Commercial	71	25
			West of SH 121T, from Overton Ridge to 0.4 miles north of Oakmont Boulevard	Residential	66	200
			West of SH 121T, North of Oakmont Boulevard	Commercial	71	30
Dutch Branch	At grade (SH 121T over)	B,C,D	North and south of Dutch Branch	Residential	66	200
	Lowered (SH 121T over)	A	North and south of Dutch Branch	Residential	66	200
Dirks Road/Altamesa Road	SH 121T over Altamesa Road	D,B	North of Altamesa Road	Residential	66	200
			South of Altamesa Road	Commercial	71	0
	Altamesa Road over SH 121T	A,C	North of Altamesa Road	Residential	66	100
			South of Altamesa Road	Commercial	71	0
Altamesa Road to FM 1187	New and original alignments	A,B,C,D	Altamesa Road to McPherson Road	Commercial	71	50
				Residential	66	275
			McPherson Road to FM 1187	Commercial	71	30
				Residential	66	225

**Contours for the "normal ROW" (Alternatives B and C) between Overton Ridge and Dutch Branch represent worse case scenarios between the "wide ROW" (Alternative A) and the "wide where reasonable" options (Alternative C).*

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Noise impacts would occur at; R8, Marina Club Apartments; R10 and R11, residences located along the west property line of Hulen Bend Addition.

Although the City of Fort Worth zoning maps were developed taking into consideration the proposed Southwest Parkway, the project area continues to be predominately undeveloped. In particular, the areas between Hulen Street and IH 20, including the areas north and south of the proposed Bellaire Road intersection. South of IH 20, the area is also mainly undeveloped with the exception of multi-family residential areas north and south of Oakmont Boulevard and the single-family residential area (Hulen Bend Addition) currently under construction. The undeveloped areas along the alignment are currently zoned commercial and residential, falling under NAC activity category D, which has no established FHWA noise abatement criteria. Exhibits IV-1 through IV-4 depict the existing and undeveloped/zoned land uses along the PSC.

In order to avoid noise impacts that might result from future development of properties adjacent to the project, local officials responsible for land use control programs should ensure, to the maximum extent possible, that no new activities are planned or constructed along or within the predicted 2025 noise impact contours shown on Table V-12. For the purpose of this analysis, the noise contour lines were developed based on the corresponding land uses established by the City of Fort Worth and for the different plan options which involve different vertical alignments, ROW widths, traffic data, etc.

On the date of approval of this document, FHWA and TxDOT would no longer be responsible for providing noise abatement for new development adjacent to the project.

Noise Abatement

Before any abatement measure can be incorporated into the project, it must be both feasible and reasonable. In order to be feasible, the measure should reduce noise levels by at least 5 dB(A) per benefited receiver; and to be reasonable it should not exceed $25,000 per benefited receiver.

Noise abatement measures such as: traffic management, alteration of horizontal/vertical alignments and the construction of noise barriers would be considered and proposed for the preferred alternative. The final noise analysis would include an analysis on whether the proposed measures are both feasible and reasonable.

Noise associated with the construction of the project is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. However, construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the receivers are expected to be exposed to construction noise for a long duration; therefore, any extended disruption of normal activities is not expected. Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems. A copy of this traffic noise analysis would be provided to local officials to assist in future land use planning.

Water Quality Impacts

Surface Water Quality

Alternatives A, B, C and D

The surface water quality impacts would occur mainly during the construction phase of the SH 121T project and can be divided into two types, temporary and potential. Soil erosion and sediment-laden runoff from construction areas account for most of the temporary impacts to streams and river within the PAC. These types of impacts on the project crossings with the Clear Fork of the Trinity River (segment 0829) would be minimized through the development and implementation of storm water pollution prevention plans and sedimentation control devices and practices. See the part *Construction Impacts* (Chapter V, Environmental Consequences) for a more detailed explanation of these pollution prevention measures to be

taken. Some potential surface water quality impacts might occur because of non-point source pollution from street surface runoff, use of herbicides for ROW maintenance and highway uses such as toxic chemical spills or accidents, etc.

The herbicides currently in use for maintenance are Round-Up and Rodeo. Round-Up, or Glyphosate is a non-selective, foliar herbicide that cannot be used over water because it contains a surfactant not approved for aquatic uses. Rodeo, also containing Glyphosate, is also a non-selective, foliar herbicide approved for use near or around water. The EPA and the Texas Department of Agriculture (TDA) approved both herbicides for use, with stipulation that when used properly, either would have minimum affects on water quality.

No-build Alternative

A No-build alternative would have no impacts on the surface water quality of the streams or river along the PSC.

Groundwater Resources

The Trinity Aquifer is a major aquifer underlying the SH 121T PSC. Exhibit V-2 depicts the aquifer's location. The downdip section of this aquifer underlies approximately 90 percent of Tarrant County. Along the PSC, the water-bearing formations dip below the surface and are covered by other formations. The downdip section of an aquifer is less susceptible to contamination. The outcrop of the Trinity aquifer, or recharge zone, is located west of the PSC. Woodbine, a minor aquifer, also underlies the PSC (Exhibit V-3). The outcrop, the principal recharge zone, is located east of the PSC.

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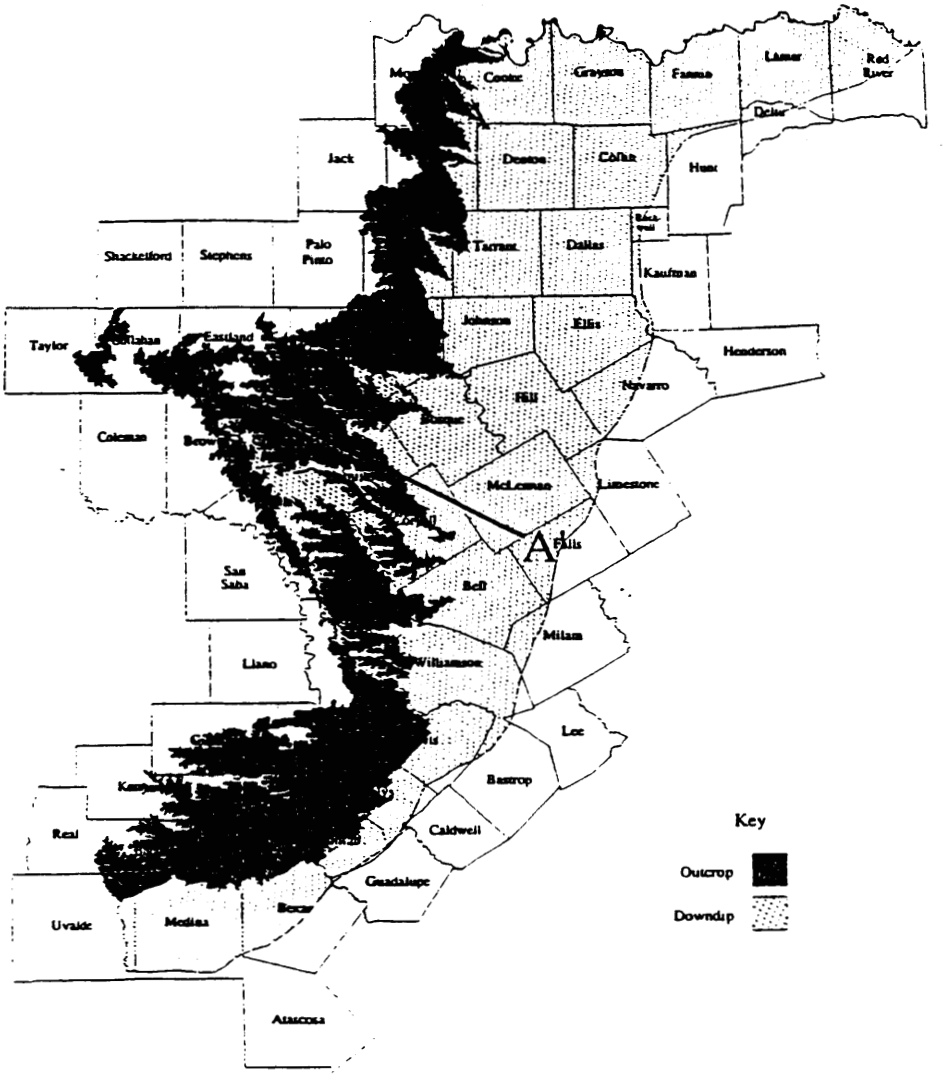

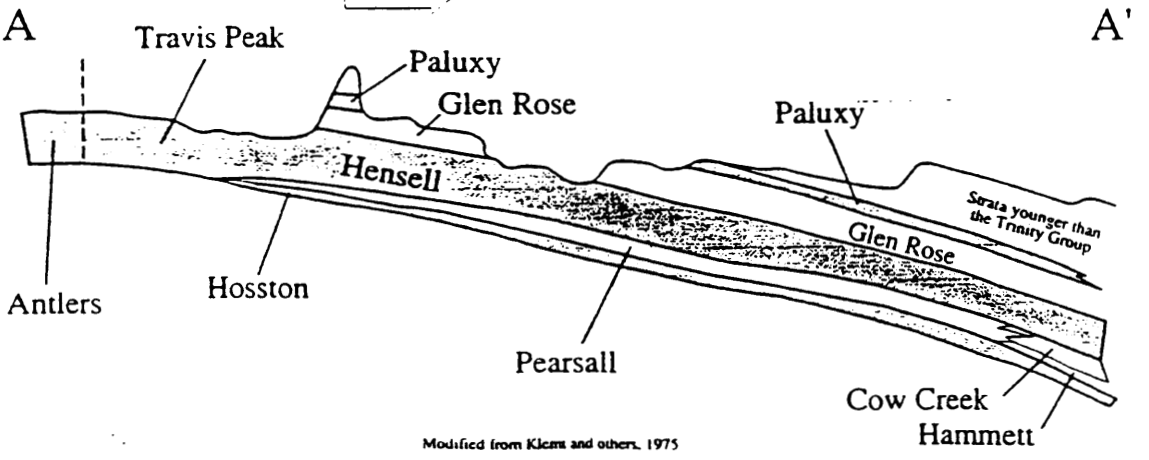

Modified from Klemt and others, 1975

TRINITY AQUIFER

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT V-2

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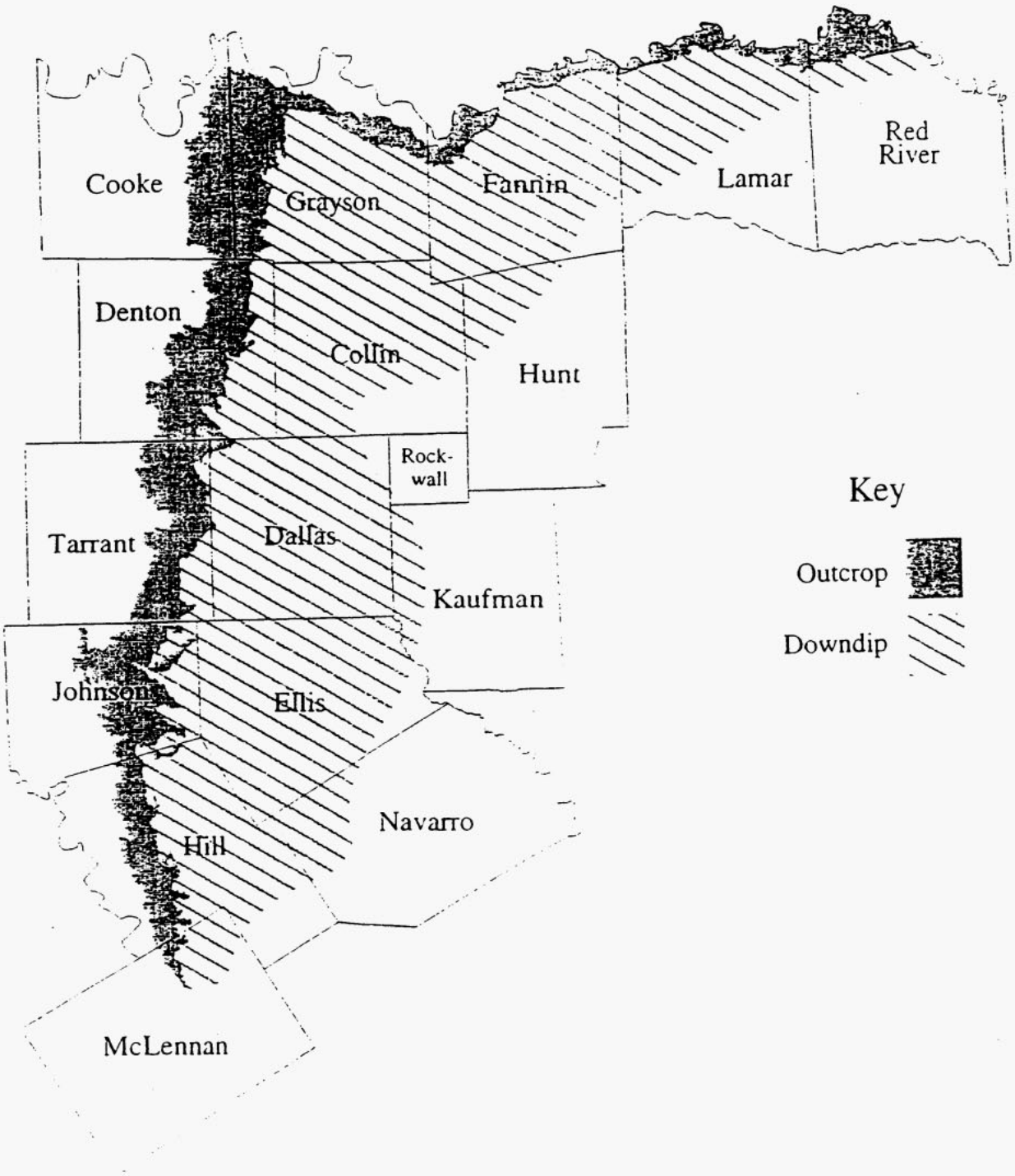

WOODBINE AQUIFER

Texas Department of Transportation

NTTA NORTH TEXAS TOLLWAY AUTHORITY

SH 121
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIIT V-3

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Alternatives A, B, C and D

Due to the nature of the underlying aquifers, no groundwater contamination is expected to occur from the construction and use of SH 121T. The project would not cross the recharge zone of any of the aquifers underlying the project.

No-build Alternative

A No-build alternative would have no impacts on the groundwater quality of the aquifers underlying the PSC.

Permits

Under the Clean Water Act, Section 404 requires a USACE permit for the discharge of dredged or fill material into waters of the United States, including wetlands. It is anticipated that construction of the proposed SH 121T would require a USACE Nationwide Permits (NWP) #25 and 33 for the crossings of the Clear Fork of the Trinity River, Map id #1 and 6. In addition, a USACE Individual Permit (IP) is anticipated to be required for impacts to the pond Map id #5, and jurisdictional waters #11, 12, and 21, shown on Exhibits V-4-A, V-4-B, and V-4-D. A NWP #14 with a preconstruction notification (PCN) is anticipated to be required for impacts to the ponds Map id #2, 3 and 4, Exhibits V-2-A through V-2-D and V-3-A through V-3-D and jurisdictional waters #7, 8, 9, 10, 13, 14, 16, 17, 18, 19, 22, 23, 25, 26. See the part *Jurisdictional Waters of the United States and Wetlands Impacts* (Chapter V, Environmental Consequences), for each Build alternative permit requirements.

The waters are not navigable; therefore, neither a USCG Section 9 Permit nor a USACE Section 10 Permit would be required.

Because this project would disturb more than 5 ac, TxDOT would be required to obtain an EPA-National Pollution Discharge Elimination System (NPDES) General Permit for construction activity. This would be accomplished by filing a Notice of Intent (NOI) with the EPA stating that TxDOT would have a Storm Water Pollution Prevention Plan (SWP3) in place during construction of the project. No long-term water quality impacts are expected as a result of the project.

The project would not increase the base-flood elevation to a level that would violate the applicable floodplain regulations or ordinances; therefore, coordination with FEMA would not be required.

Jurisdictional Waters of the United States and Wetlands Impacts

As a result of impacts to jurisdictional waters associated with the construction of this project, Tier I Erosion Control, Post-Construction Total Suspended Solids (TSS) Control and Sedimentation Control devices would be required under the TNRCC Section 401 of the Clean Water Act.

Prior to construction, at least one sedimentation control best management practice (BMP) (i.e., sand bag berm, silt fence, triangular filter dike, rock berms, compost berms, hay bale dike) must be maintained and remain in place until project completion and would follow the TxDOT's manual, *Standard Specification for the Construction of Highways, Streets, and Bridges*. Sediment control BMPs would prevent the introduction of sediment to adjacent wetlands or water bodies by confining the sediment.

Erosion control measures would minimize impacts to water quality during construction. At least one soil stabilization BMP designed to minimize erosion (i.e., temporary vegetation, blankets/matting, sodding, or mulching) would be installed and remain in place until the disturbed areas have been stabilized. Where appropriate, the temporary erosion and sedimentation control structures would be in place prior to the initiation of construction and would be maintained throughout the duration of the construction. Clearing of vegetation would be limited and/or phased in order to maintain a natural water quality buffer and minimize the amount of erodible earth exposed at any one time.

Upon completion of the earthwork operations, disturbed areas would be restored and re-seeded according to TxDOT's specifications for "Seeding for Erosion Control." If contaminated dredged material were encountered during dredging, construction operations would cease immediately. The USACE would be notified and the contaminated material would be re-mediated or disposed of in accordance with TNRCC rules. Dredging activities would not be resumed until authorized by the TNRCC.

The 1992 National Wetlands Inventory (NWI) maps as prepared by the United States Department of the Interior, FWS, current aerial photographs and visual inspection of the proposed alignment were utilized to identify and locate affected wetlands. Wetlands are defined in the 1987 USACE Wetlands Delineation Manual as, “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances, do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” Wetlands generally include swamps, marshes, bogs, and similar areas.

Identifiable wetland (jurisdictional waters of the United States) areas associated with the SH 121 PSC are of two types, as indicated by the FWS Wetland Classification System. These two types are:

- Riverine - all freshwater habitats contained within a channel, including streams, springs, and/or rivers, except those dominated by trees, shrubs, or persistent emergent vegetation; and
- Palustrine - water systems dominated by emergent vegetation, or small (less than 20 acres), shallow (less than 6 ft in depth) bodies of water without shoreline features dominated by bedrock or wave action.

The jurisdictional waters of the United States associated with ponds within the PSC are composed of small man-made surface water impoundments intended for livestock watering. These impoundments are mostly less than 1 acre in surface area. Pond designations under the FWS include: (PUBHh) palustrine, unconsolidated bottoms, permanently flooded, dike impoundments; (PUBFh) palustrine, unconsolidated bottom, semi-permanently flooded, diked impoundment; and, (R2UBHx) riverine,

unconsolidated bottom, permanently flooded, excavated. The impoundments designated PUBHh and PUBFh generally have some emergent vegetation and might contain small forage fish or game fish. However, they are not considered to be of high quality or serve as an important wildlife habitat. Riverine jurisdictional waters of the United States (streams and river) demonstrate appreciable flow only after rainfall or in the case of the Clear Fork of the Trinity River, those times when flow is being released from the Benbrook dam or spillway. Vegetation contained within floodplain areas associated with streambed jurisdictional waters of the United States within the PSC is composed of deciduous hardwood broad-leaf trees. There are approximately 20 jurisdictional waters of the United States within or in close proximity to the proposed Southwest Parkway, mostly the palustrine variety (stock ponds). The potential impact to jurisdictional waters of the United States as well as permit requirements, which for the purpose of this document constitute all ponds and streams crossings, were addressed by estimating the area within the proposed ROW for each of the Build alternatives. The USACE permits associated with each one of the Build alternatives are as follows:

- NWP # 14-*Linear Transportation Crossings* authorizes an acreage limit of 0.50 ac with a PCN threshold of 0.10 ac
- NWP # 25-*Structural Discharges* authorizes the discharges of material such as concrete, sand, rock, etc. into tightly sealed forms or cells where the material will be used as a structural member for standard pile supported structures, such as bridges.
- NWP # 33-*Temporary Construction, Access and Dewatering* authorizes temporary structures, work and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites; provided that the associated primary activity is authorized by the Corps of Engineers.

Construction impacts depicted in the following Tables V-13 –16 represent the worst case scenario for each alternative. Use of bridge structures in jurisdictional areas would eliminate or lessen the degree of impact to waters of the US. It is anticipated that bridge structures will be used in some, if not most areas, however, design work has not yet been initiated for the project.

Alternative A

A total of five wetlands, as defined by the NWI, are located within Alternative A's ROW, all of which are palustrine except for one riverine. The affected wetlands include R2UBHx (Map id #1), PUBFh (Map id #2), and PUBHh (Map id #3, Map id #4, and Map id #5), depicted in Exhibits V-1-A through V-4-A. The jurisdictional waters of the United States (Map id #6 through Map id #23) are also depicted on Exhibits V-1-A through V-4-A. The approximate linear fill footage for each waters of the US is as follows: Map id #1, no fill required, a bridge structure would cross the stream; Map id #2, 111 ft; Map id #3, 219 ft; Map id #4, 275 ft, and Map id #5, 142 ft. Table V-13 depicts the estimated impacts to wetlands and jurisdictional waters with total acreage and the approximate impacted acreage as well as their wetland classification. A total of approximately 0.27 acres of the PUBFh (semi-permanently flooded); 1.29 acres of PUBHh (permanently flooded); 0.90 acres R2UBHx and 6.78 acres of jurisdictional waters are within the ROW.

Construction would potentially impact approximately 0.90 acres of riverine wetlands, 1.56 acres of palustrine wetlands and 6.78 acres of jurisdictional waters of the United States.

A USACE Section 404 NWP #25-Structural Discharges and #33-Temporary Construction, Access and Dewatering and PCN are anticipated to be required for the wetlands impacted at the Clear Fork of the Trinity River Crossing (Map id#1 and #6). A Section 404 IP is anticipated for the pond at Map id #5, 11, 12 and 21. A NWP #14 with a PCN is anticipated to be required for impacts at Map id #2, 3 and 4 ponds as well as for the impacts at Map id #7, 8, 9, 10, 13, 14, 16, 17, 18, 19, 22 and 23. A NWP #14 without a PCN is anticipated to be necessary for impacts at Map id #15 and 20. Mitigation for the loss of palustrine wetlands is not anticipated because they constitute stock ponds and are not currently wildlife habitat friendly areas. Impacts to riverine wetlands and jurisdictional waters of the United States would be temporary during construction and these areas would be allowed to return to their preconstruction state. Implementing the sediment and erosion control measures discussed in the part *Construction Impacts- Water* (Chapter V, Environmental Consequences) would minimize construction impacts.

Alternative B

A total of five palustrine and one riverine wetland are located within the ROW. The potentially affected wetlands include R2UBHx (Map id #1), PUBFh (Map id #2) and PUBHh (Map id #3, Map id #4, and Map id #5), depicted in Exhibits V-1-B through V-4-B. The jurisdictional waters (Map id #6 through Map id #23) are also depicted on Exhibits V-1-B through V-4-B. The approximate linear fill footage for each palustrine/riverine wetland is as follows: jurisdictional water Map id #1, no fill required, a bridge structure would cross the stream; Map id #2, 111ft; Map id #3, 219 ft; Map id #4, 275 ft; and Map id #5, 142 ft. Table V-14 presents the estimated impacts to wetlands and jurisdictional waters total acreage and the approximate impacted acreage as well as their wetland classification. A total of approximately 0.21 acres of the PUBFh (semi-permanently flooded); 1.29 acres of PUBHh (permanently flooded); 1.05 acres R2UBHx and 6.40 acres of jurisdictional waters are within the Alternative B ROW.

TABLE V-13

ESTIMATED IMPACTS TO WETLANDS AND JURISDICTIONAL WATERS OF THE UNITED STATES ALTERNATIVE A

Map id#	FWS Classification	Soil Type	Wetland Wild Life	Wetland Classification**	Water Regime**	Wetland Size in ac	Water Elevation in ft ***	Affected Area in ac	% Affected Area	Expected Permits
1	R2UBHx	Frio Silt	High	Riverine, lower perennial, unconsolidated bottom, excavated	Permanently Flooded	0.90	NA	0.90	100%	NWPs 25, 33 and PCN
2	PUBFh	Slidell clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Semi-permanently Flooded	0.30	731.7	0.27	90%	NWP 14 and PCN
3	PUBHh	Sanger Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Permanently Flooded	0.64	764.7	0.18	28%	NWP 14 and PCN
4	PUBHh	Sanger Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Permanently Flooded	0.74	NA	0.44	59%	NWP 14 and PCN
5	PUBHh	Sanger Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Permanently Flooded	1.17	843.5	0.67	57%	404 Individual Permit
6	Jurisdictional Waters	Urban land*	Very poor	NA	NA	1.00	NA	1.00	100%	NWPs 25, 33 and PCN
7	Jurisdictional Waters	Frio Silty Clay	High	NA	NA	0.42	NA	0.42	100%	NWP 14 and PCN
8	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.45	NA	0.45	100%	NWP 14 and PCN
9	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.28	NA	0.28	100%	NWP 14 and PCN
10	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.43	NA	0.43	100%	NWP 14 and PCN
11	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	1.25	NA	1.25	100%	404 Individual Permit
12	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.83	NA	0.83	100%	404 Individual Permit
13	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.31	NA	0.31	100%	NWP 14 and PCN
14	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.24	NA	0.24	100%	NWP 14 and PCN
15	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.04	NA	0.04	100%	NWP 14

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TABLE V-13 (CONTINUED)

Map id#	FWS Classification	Soil Type	Wetland Wild Life	Wetland Classification**	Water Regime**	Wetland Size in ac	Water Elevation in	Affected Area in ac	% Affected	Expected Permits
16	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.16	NA	0.16	100%	NWP 14 and PCN
17	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.16	NA	0.16	100%	NWP 14 and PCN
18	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.10	NA	0.10	100%	NWP 14 and PCN
19	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.31	NA	0.31	100%	NWP 14 and PCN
20	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.03	NA	0.03	100%	NWP 14
21	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.56	NA	0.56	100%	404 Individual Permit
22	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.10	NA	0.10	100%	NWP 14 and PCN
23	Jurisdictional Waters	Frio Silty Clay	High	NA	NA	0.11	NA	0.11	100%	NWP 14 and PCN
					TOTALS	**10.53**		**9.24**		

**An 'Urban land' soil is defined by NRCS as that soil that have been altered and obscured to the extent that it can not be classified.*

***Information under these categories was determined from the FWS NWI and classification maps, 'NA' means that the information was not available from these sources.*

****Information under this category was determined from topographical maps and aerial photography, 'NA' means that the information was not available at the time the study was performed and may be field determined.*

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TABLE V-14

ESTIMATED IMPACTS TO WETLANDS AND JURISDICTIONAL WATERS OF THE UNITED STATES
ALTERNATIVE B

Map id#	FWS Classification	Soil Type	Wetland Wild Life	Wetland Classification**	Water Regime**	Wetland Size in ac	Water Elevation in ft ***	Affected Area in ac	% Affected Area	Expected Permits
1	R2UBHx	Frio Silt	High	Riverine, lower perennial, unconsollidated bottom, excavated	Permanently Flooded	1.05	NA	1.05	100%	NWPs 25, 33 and PCN
2	PUBFh	Slidell clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Semi-permanently Flooded	0.30	731.7	0.21	70%	NWP 14 and PCN
3	PUBHh	Sanger Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Permanently Flooded	0.64	764.7	0.18	28%	NWP 14 and PCN
4	PUBHh	Sanger Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Permanently Flooded	0.74	NA	0.44	59%	NWP 14 and PCN
5	PUBHh	Sanger Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Permanently Flooded	1.17	843.5	0.67	57%	404 Individual Permit
6	Jurisdictional Waters	Urban land*	Very poor	NA	NA	1.00	NA	1.00	100%	NWPs 25, 33 and PCN
7	Jurisdictional Waters	Frio Silty Clay	High	NA	NA	0.22	NA	0.22	100%	NWP 14 and PCN
8	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.22	NA	0.22	100%	NWP 14 and PCN
9	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.33	NA	0.33	100%	NWP 14 and PCN
10	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.43	NA	0.43	100%	NWP 14 and PCN
11	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	1.25	NA	1.25	100%	404 Individual Permit
12	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.83	NA	0.83	100%	404 Individual Permit
13	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.31	NA	0.31	100%	NWP 14 and PCN
14	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.24	NA	0.24	100%	NWP 14 and PCN

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TABLE V-14 (CONTINUED)

Map id#	FWS Classification	Soil Type	Wetland Wild Life	Wetland Classification**	Water Regime**	Wetland Size in ac	Water Elevation in ft ***	Affected Area in ac	% Affected Area	Expected Permits
15	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.04	NA	0.04	100%	NWP 14
16	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.16	NA	0.16	100%	NWP 14 and PCN
17	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.16	NA	0.16	100%	NWP 14 and PCN
18	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.10	NA	0.10	100%	NWP 14 and PCN
19	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.31	NA	0.31	100%	NWP 14 and PCN
20	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.03	NA	0.03	100%	NWP 14
21	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.56	NA	0.56	100%	404 Individual Permit
22	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.10	NA	0.10	100%	NWP 14 and PCN
23	Jurisdictional Waters	Frio Silty Clay	High	NA	NA	0.11	NA	0.11	100%	NWP 14 and PCN
					TOTALS	**10.30**		**8.95**		

**An 'Urban land' soil is defined by NRCS as that soil that have been altered and obscured to the extent that it can not be classified.*

***Information under these categories was determined from the FWS NWI and classification maps, 'NA' means that the information was not available from these sources.*

****Information under this category was determined from topographical maps, 'NA' means that the information was not available at the time the study was performed and may be field determined.*

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Construction would potentially impact approximately 1.05 acres of riverine wetlands, 1.5 acres of palustrine wetlands and 6.40 acres of jurisdictional waters.

A USACE Section 404 NWP # 25-*Structural Discharges* and #33-*Temporary Construction, Access and Dewatering* and PCN are anticipated to be required for the wetlands impacted at the Clear Fork of the Trinity River Crossings (Map id#1 and #6). A Section 404 IP is anticipated for the pond at Map id #5, 11, 12, and 21. A NWP #14 with a PCN is anticipated to be required for Map id #2, 3 and 4 ponds and the jurisdictional waters crossings at Map id #7, 8, 9, 10, 13, 14, 16, 17, 18, 19, 22 and 23. A NWP #14 without a PCN is anticipated to be required at Map id #15 and 20. Mitigation for the loss of palustrine wetlands is not anticipated because they constitute stock ponds and are not currently wildlife habitat friendly areas. Impacts to riverine wetlands and jurisdictional waters of the United States would be temporary during construction and these areas would be allowed to return to their preconstruction state. Implementing the sediment and erosion control measures discussed in the part *Construction Impacts- Water* (Chapter V, Environmental Consequences) would minimize construction impacts.

Alternative C

There are a total of four wetlands located within the Alternative C ROW, all of which are of the palustrine type except for one riverine. The potentially affected wetlands include R2UBHx (Map id #1), PUBFh (Map id #2) and PUBHh (Map id #3, Map id #4), depicted in Exhibits V-1-C through V-4-C. The jurisdictional waters of the United States (Map id #6 through 19 and Map id #23 through 26) are also located on V-1-C through V-4-C. The approximate linear fill footage for each palustrine/riverine wetland is as follows: jurisdictional water Map id #1, no fill required, a bridge structure would cross the stream; Map id #2, 111ft; Map id #3, 219 ft; and Map id #4, 275 ft. Table V-15 presents the potentially affected jurisdictional waters total acreage and the approximate impacted acreage as well as the their wetland classification. A total of approximately 0.21 acres of the PUBFh (semi-permanently

flooded); 0.62 acres of PUBHh (permanently flooded); 1.11 acres R2UBHx and 6.16 acres of jurisdictional waters are within the ROW.

Construction would potentially impact approximately 1.11 acres of riverine wetlands, 0.83 acres of palustrine wetlands and 6.16 acres of jurisdictional waters of the United States.

USACE Section 404 NWP # 25-*Structural Discharges* and #33-*Temporary Construction, Access and Dewatering* and PCN are anticipated to be required for the wetlands impacted at the Clear Fork of the Trinity River Crossings (Map id#1 and #6). A Section 404 IP is anticipated for the pond at Map id #11, 12, and 21. A NWP #14 and a PCN is anticipated to be required for Map id #2, 3 and 4 ponds and the jurisdictional waters for Map id #7, 8, 9, 10, 13, 14, 16, 17, 18, 19, 23, 24, 25, 26. A NWP #14 without a PCN is anticipated to be required for Map id #15 and 24. Mitigation for the loss of palustrine wetlands is not anticipated because they constitute stock ponds and are not currently wildlife habitat friendly areas. Impacts to riverine wetlands and jurisdictional waters of the United States would be temporary during construction and these areas would be allowed to return to their preconstruction state. Implementing the sediment and erosion control measures discussed in the part *Construction Impacts- Water* (Chapter V, Environmental Consequences) would minimize construction impacts.

<u>Alternative D</u>

A total of five wetlands located within the Alternative D ROW, all of which are of the palustrine type except for one riverine. The potentially affected wetlands include R2UBHx (Map id #1), PUBFh (Map id #2) and PUBHh (Map id #3, Map id #4, and Map id #5), depicted in Exhibits V-1-D through V-4-D. The jurisdictional waters of the United States (Map id #6 through Map id #23) are also depicted on Exhibits V-1-D through V-4-D.

The approximate linear fill footage for each palustrine/riverine wetland is as follows: jurisdictional water Map id #1, no fill required, a bridge structure would cross the stream;

Map id #2, 111ft; Map id #3, 219 ft; Map id #4, 275 ft; and Map id #5, 142 ft. Table V-16 presents the estimated impacts to wetlands and jurisdictional waters total acreage and the approximate impacted acreage as well as their wetland classification. A total of approximately 0.21 acres of the PUBFh (semi-permanently flooded); 1.29 acres of PUBHh (permanently flooded); 1.05 acres R2UBHx and 6.40 acres of jurisdictional waters are within the ROW. Construction would potentially impact approximately 1.05 acres of riverine wetlands, 1.50 acres of palustrine wetlands and 6.40 acres of jurisdictional waters of the United States.

USACE Section 404 NWP # 25-*Structural Discharges* and #33-*Temporary Construction, Access and Dewatering* and PCN are anticipated to be required for the wetlands impacted at the Clear Fork of the Trinity River Crossings (Map id#1 and #6). A Section 404 IP is anticipated for the pond at Map id #6, 11, 12, and 21. A NWP #14 with a PCN is anticipated to be required for Map id #2, 3 and 4 ponds and the jurisdictional waters crossings at Map id #7, 8, 9, 10, 13, 14, 16, 17, 18, 19, 22 and 23. A NWP #14 without a PCN is anticipated to be required at Map id #15 and 20. Mitigation for the loss of palustrine wetlands is not anticipated because they constitute stock ponds and are not currently wildlife habitat friendly areas. Impacts to riverine wetlands and jurisdictional waters of the United States would be temporary during construction and these areas would be allowed to return to their preconstruction state. Implementing the sediment and erosion control measures discussed in part *Construction Impacts- Water* (Chapter V, Environmental Consequences) would minimize construction impacts.

The permits mentioned in this Section were based upon approximations of the area affected at each site. Once a preferred alternative is identified and right of entry is obtained, a more accurate area impacted and the appropriate permit would be determined.
At which time, any required coordination with the USACE will be determined and initiated.

<u>Practicable Measures to Minimize Harm</u>

There are no feasible or practical alternatives to avoid the affected jurisdictional waters of the United States areas described. Erosion control measures will be utilized to minimize harm to riverine jurisdictional waters of the United States. These measures would comply with TNRCC Section 401 Tier I BMPs.

No-build Alternative

The No-build alternative would not impact any jurisdictional waters of the United States.

Water Body Modifications and Wildlife Impacts

Surface Water Resources

The Clear Fork of the Trinity River as well as various intermittent streams, such as West Buffalo Creek, Rock Creek and other unnamed tributaries to the Clear Fork are found within the SH 121T PSC. The Clear Fork of the Trinity River begins in Parker County and flows southwest into Tarrant County. According to the TNRCC 1998 Water Quality Inventory, the Clear Fork of the Trinity River, stream segment 0829: from the confluence with the West Fork Trinity River to Benbrook Dam, has been classified to have a limited water quality because of water quality standard violations. The stream supports a high aquatic life and it is used for contact recreation and for public water supply, but because of the high levels of chlordane in fish tissue, fish consumption is not supported through the lower mile of the segment. No fish kills have been reported and the principal source of contamination is urban runoff. Water flow within the PSC is influenced mainly by rainfall events.

Benbrook Lake reservoir is formed by the impoundment of waters of the Clear Fork of the Trinity River, and is located approximately 1 mile southwest and upstream of the PSC. According to the TNRCC 1998 Water Quality Inventory, Benbrook Lake, stream segment 0830: from Benbrook Dam to a point 220 yards (yd) downstream of US 377, up to the normal pool elevation of 694 ft, has been classified as having limited water quality or effluent limited because the lake is designated as a public water supply reservoir. The designation of Benbrook Lake as a public water supply reservoir affords special wastewater

TABLE V-15

ESTIMATED IMPACTS TO WETLANDS AND JURISDICTIONAL WATERS OF THE UNITED STATES
ALTERNATIVE C

Map id#	FWS Classification	Soil Type	Wetland Wild Life	Wetland Classification**	Water Regime**	Wetland Size in ac	Water Elevation in ft ***	Affected Area in ac	% Affected Area	Expected Permits
1	R2UBHx	Frio Silt	High	Riverine, lower perennial, unconsolidated bottom, excavated	Permanently Flooded	1.11	NA	1.11	100%	NWPs 25, 33 and PCN
2	PUBFh	Slidell clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Semi-permanently Flooded	0.30	731.7	0.21	70%	NWP 14 and PCN
3	PUBHh	Sanger Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Permanently Flooded	0.64	764.7	0.18	28%	NWP 14 and PCN
4	PUBHh	Sanger Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Permanently Flooded	0.74	NA	0.44	59%	NWP 14 and PCN
6	Jurisdictional Waters	Urban land*	Very poor	NA	NA	1.00	NA	1.00	100%	NWPs 25, 33 and PCN
7	Jurisdictional Waters	Frio Silty Clay	High	NA	NA	0.22	NA	0.22	100%	NWP 14 and PCN
8	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.22	NA	0.22	100%	NWP 14 and PCN
9	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.33	NA	0.33	100%	NWP 14 and PCN
10	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.43	NA	0.43	100%	NWP 14 and PCN
11	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	1.25	NA	1.25	100%	404 Individual Permit
12	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.83	NA	0.83	100%	404 Individual Permit
13	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.31	NA	0.31	100%	NWP 14 and PCN
14	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.24	NA	0.24	100%	NWP 14 and PCN
15	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.04	NA	0.04	100%	NWP 14
16	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.16	NA	0.16	100%	NWP 14 and PCN

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TABLE V-15 (CONTINUED)

Map id#	FWS Classification	Soil Type	Wetland Wild Life	Wetland Classification**	Water Regime**	Wetland Size in ac	Water Elevation in ft ***	Affected Area in ac	% Affected Area	Expected Permits
17	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.16	NA	0.16	100%	NWP 14 and PCN
18	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.10	NA	0.10	100%	NWP 14 and PCN
19	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.31	NA	0.31	100%	NWP 14 and PCN
23	Jurisdictional Waters	Frio Silty Clay	High	NA	NA	0.11	NA	0.11	100%	NWP 14 and PCN
24	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.05	NA	0.05	100%	NWP 14
25	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.25	NA	0.25	100%	NWP 14 and PCN
26	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.15	NA	0.15	100%	NWP 14 and PCN
					TOTALS	**8.95**		**8.10**		

**An 'Urban land' soil is defined by NRCS as that soil that have been altered and obscured to the extent that it can not be classified.*

***Information under these categories was determined from the FWS NWI and classification maps, 'NA' means that the information was not available from these sources.*

****Information under this category was determined from topographical maps, 'NA' means that the information was not available at the time the study was performed and may be field determined.*

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TABLE V-16

ESTIMATED IMPACTS TO WETLANDS AND JURISDICTIONAL WATERS OF THE UNITED STATES
ALTERNATIVE D

Map id#	FWS Classification	Soil Type	Wetland Wild Life	Wetland Classification**	Water Regime**	Wetland Size in ac	Water Elevation in ft ***	Affected Area in ac	% Affected Area	Expected Permits
1	R2UBHx	Frio Silty Clay	High	Riverine, lower perennial, unconsolidated bottom, excavated	Permanently Flooded	1.05	NA	1.05	100%	NWPs 25, 33 and PCN
2	PUBFh	Slidell Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Semi-permanently Flooded	0.30	731.7	0.21	70%	NWP 14 and PCN
3	PUBHh	Sanger Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Permanently Flooded	0.64	764.7	0.18	28%	NWP 14 and PCN
4	PUBHh	Sanger Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Permanently Flooded	0.74	NA	0.44	59%	NWP 14 and PCN
5	PUBHh	Sanger Clay	Very poor	Palustrine,unconsolidated bottom, diked/impounded	Permanently Flooded	1.17	843.5	0.67	57%	404 Individual Permit
6	Jurisdictional Waters	Urban land*	Very poor	NA	NA	1.00	NA	1.00	100%	NWPs 25, 33 and PCN
7	Jurisdictional Waters	Frio Silty Clay	High	NA	NA	0.22	NA	0.22	100%	NWP 14 and PCN
8	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.22	NA	0.22	100%	NWP 14 and PCN
9	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.33	NA	0.33	100%	NWP 14 and PCN
10	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.43	NA	0.43	100%	NWP 14 and PCN
11	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	1.25	NA	1.25	100%	404 Individual Permit
12	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.83	NA	0.83	100%	404 Individual Permit
13	Jurisdictional Waters	Slidell Clay	Very poor	NA	NA	0.31	NA	0.31	100%	NWP 14 and PCN
14	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.24	NA	0.24	100%	NWP 14 and PCN

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TABLE V-16 (CONTINUED)

15	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.04	NA	0.04	100%	NWP 14
16	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.16	NA	0.16	100%	NWP 14 and PCN
17	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.16	NA	0.16	100%	NWP 14 and PCN
18	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.10	NA	0.10	100%	NWP 14 and PCN
19	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.31	NA	0.31	100%	NWP 14 and PCN
20	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.03	NA	0.03	100%	NWP 14
21	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.56	NA	0.56	100%	404 Individual Permit
22	Jurisdictional Waters	Sanger Clay	Very poor	NA	NA	0.10	NA	0.10	100%	NWP 14 and PCN
23	Jurisdictional Waters	Frio Silty Clay	High	NA	NA	0.11	NA	0.11	100%	NWP 14 and PCN
					TOTALS	**10.30**		**8.95**		

**An 'Urban land' soil is defined by NRCS as that soil that have been altered and obscured to the extent that it can not be classified.*

***Information under these categories was determined from the FWS NWI and classification maps, 'NA' means that the information was not available from these sources.*

****Information under this category was determined from topographical maps, 'NA' means that the information was not available at the time the study was performed and may be field determined.*

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treatment requirements. All domestic wastewater dischargers, located within 5 mi upstream of public water supply reservoirs, are required to achieve advanced waste treatment. The classification of Benbrook Lake as "water quality limited" or "effluent limited" is due only because of the public water supply designation and does not mean that any water quality standards have been exceeded. The lake supports a high aquatic life and its designated uses are contact recreation and as mentioned, public water supply. The reservoir is a major source of water for the City of Fort Worth and Tarrant County and also provides recreation and flood control. No fish kills have been reported. Data for the current TNRCC evaluation period indicate attainment of criteria for designated uses.

In addition to Benbrook Lake, there are several small impoundments in the PSC consisting of ponds generally less than one acre in surface area. These are used mainly for livestock watering. The impact to these small water bodies ranges from 28% to 90% as discussed in *Jurisdictional Waters of the United States and Wetlands Impacts*, (Chapter V, Environmental Consequences).

Groundwater Resources

The Trinity Aquifer underlying the PSC consists of early Cretaceous age formations of the Trinity Group, which extends from the Red River in North Texas to the Hill Country of South-Central Texas. Formations comprising the Trinity Group are (from youngest to oldest) the Paluxy Sand, the Glen Rose and the Twin Mountain-Travis Peak. The Travis Peak formation has historically been the most productive in Tarrant County; its depth increases toward the east ranging from 550 ft at Eagle Mountain Lake to 1,490 ft at Arlington and has an approximate 300 ft thickness where it would cross the PSC. The alluvial deposits in Tarrant County furnish small to moderate quantities of ground water, the larger yields coming from lower terraces and floodplains. The quality of water from this formation is generally poor due to surface pollution.

Wildlife Habitat

The project is located within the Texan Biotic Province that lies within a transition area of the Blackland Prairies and East Cross Timbers. Residential/commercial development, industrial and/or agricultural activities within the PSC have displaced many native biotic communities. Those fauna that are present have adapted to and normally coexist with human development and are most diverse within the bottomland hardwood forests of the Clear Fork of the Trinity River and adjacent undeveloped land. The fauna generally found within the project area is typical of that found in the southeastern United States. The TPWD and the City of Fort Worth are currently stocking the Clear Fork of the Trinity River with channel catfish, largemouth bass and rainbow trout. Benbrook Lake, which is nearby, is an important habitat area for migratory bird feeding and staging as well as habitat for a variety of fish and other aquatic life.

Vegetation is composed primarily of big bluestem, little bluestem, Indian grass, switchgrass, gramas and buffalo grass. The area once contained significant amounts of prairie forbs such as western ragweed, sedges, asters and sageworts. Past mismanagement and cultivation have caused the uplands to be covered mostly by scrub oak, mesquite and juniper with mid and shortgrass understories. The bottomland trees are primarily hardwoods such as pecan, oak and elm. Characteristic understory shrubs and vines include skunkbush, saw greenbriar, bumelia and poison ivy.

Alternatives A, B, C and D

The Build alternatives would affect the small watering ponds located within project limits. Construction of the project would have little or no affect on the designated water uses within the area; no impoundment, relocation or channel deepening of the water bodies would be necessary. Temporary impacts would be limited to the construction phase and are discussed in the part *Construction Impacts,* (Chapter V, Environmental Consequences), and would be minimized by applying proper pollution prevention measures. The wildlife in the area would

be impacted during construction (surface disturbance, equipment and crew traffic) and during facility operation (usage, ROW maintenance, air pollution and urban runoff). The route of travel of some species would be impacted after construction of the facility, mainly on an east/west traverse between Hulen Street and Bryant Irvin Road. No impact on endangered/threatened species is expected to occur. The existing groundwater resources quality would not be adversely affected by the Build alternatives.

In accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, landscaping would be limited to seeding and replanting the ROW with native species of plants where possible. A mix of native grasses and native forbs would be used to re-vegetate the ROW.

No-build Alternative

The No-build alternative would have no impact on the water bodies and wildlife mentioned above.

Floodplain and Floodway Impacts

Coordination with FEMA and review of FEMA maps (last revised in August of 2000) has indicated the existence of both 100-year floodplains and floodways within the PSC. There are a total of 11 locations where the Build alternatives of the project would cross a floodplain, floodway, river or stream on FEMA classified zones AE and A. Zone AE has been designated as that special flood hazard area inundated by a 100-year flood where base flood elevations have been determined and zone A as the area inundated by a 100-year flood where base flood elevations have not been determined. The floodplains/floodways associated with the project is the Clear Fork of the Trinity River, its' tributaries and Benbrook Lake tributaries.

Most of the potentially impacted floodplain crossings would involve lateral encroachment (bridge crossings) as opposed to longitudinal encroachments (road construction within the floodplain). Each road crossing and type of encroachment, extent of the potential encroachment and type of structure involved at the crossings, is described in detail for each of the plan alternatives as follows:

Alternative A

1. *Clear Fork of the Trinity River at University Drive south of the IH 30 – Zone AE* (FEMA Map#48439C0405): the crossing at this location would involve the construction of a new bridge (lateral crossing), the alignment would cross approximately 1,300 ft of the Clear Fork of the Trinity River floodplain. The normal flow in the river would not be affected since bridges would span it. Limited fill material would be necessary for the bridge abutments.

2. *Clear Fork of the Trinity River tributary south of the railroad tracks – Zone AE* (FEMA Map#48439C0385): the crossing at this location would involve the construction of a new bridge structure (lateral encroachment) at Hulen Street and the Union Pacific Railroad tracks. The proposed alignment would cross approximately 500 ft floodplain of a tributary to the Clear Fork of the Trinity River.

3. *Clear Fork of the Trinity River north of Bellaire Drive – Zone AE* (FEMA Map#48439C0385): the crossing at this location would involve the construction of a new bridge structure including main lanes and frontage roads (lateral encroachment) the alignment would cross approximately 300 ft of the Clear Fork of the Trinity River floodplains. Bents in the floodway would be kept to a minimum. The bridge would span the normal flow of the river and no fill material is anticipated within the floodway.

4. *Clear Fork of the Trinity River unnamed tributary south of Overton Ridge - Zone AE* (FEMA Map#48439C0395): the crossing at this location would involve a new bridge (lateral encroachment), it would cross approximately 500 ft of the floodplain of an unnamed tributary to the Clear Fork floodplain. The number of bents placed within the floodway would be kept to a minimum. The bridge would span the normal flow of the tributary.

5. *East of Benbrook Lake floodplain area north of Cleburne Street (Proposed Sycamore School Road)- Zone A* (FEMA Map#48439C0395): the crossing at this location

would involve a new bridge (lateral encroachment), it would cross approximately 900 ft of the floodplain of an unnamed tributary to the Clear Fork floodplains. The number of bents placed within the floodway would be kept to a minimum. No fill material is anticipated within the floodway.

6. *East of Benbrook Lake floodplain area south of Cleburne Street (Proposed Sycamore School Road) - Zone A* (FEMA Map#48439C0510): the crossing at this location would involve a new bridge (lateral encroachment), it would cross approximately 1,600 ft of the floodplain of an unnamed tributary to the Clear Fork. Filling operations might be required at this location.

7. *East of Benbrook Lake floodplain area east of Old Granbury Road and south of proposed Risinger Road - Zone A* (FEMA Map#48439C0510): a new at grade elevation road (longitudinal encroachment) would be constructed within approximately 700 ft of the floodplain. Proposed design includes two 9ft x 7ft culvert boxes to provide for required floodplain relief. Filling operations would be required at this location.

8. *East of Benbrook Lake floodplain area at Old Granbury Road and north of FM 1187 - Zone A* (FEMA Map#48439C0510): a new at grade elevation road would be constructed within approximately 400 ft of the floodplain causing parallel encroachment. Four 10ft x 7ft culvert boxes would be located at the location to provide for required floodplain relief. Filling operations might be required at this location.

9. *Unnamed tributary to Rock Creek at FM 1187 and Old Granbury Road- Zone A* (FEMA Map#48439C0510): the crossing at this location would involve lateral encroachment at the south terminus of the project where the proposed highway ties into the existing FM 1187. A new at grade elevation road would be constructed approximately 300 ft within the floodplains to meet the existing highway. No fill material is anticipated at this location.

Alternative B

1. *Clear Fork of the Trinity River along Forest Park Boulevard south of Lancaster Avenue – Zone AE* (FEMA Map #48439C0405) the floodway impacts at this location would involve a longitudinal encroachment for the construction of a new Forest Park Boulevard connector. Fill material would be necessary for the construction of the road.

2. *Clear Fork of the Trinity River at University Drive south of the IH 30* – Zone AE (FEMA Map#48439C0405): the crossing at this location would involve the construction of a new bridge (lateral encroachment), located approximately 1,300 ft within the Clear Fork of the Trinity River floodplain. The normal flow in the river would not be affected because bridges would span it. Limited fill material would be necessary for the bridge abutments.

3. *Clear Fork of the Trinity River tributary south of the railroad tracks – Zone AE* (FEMA Map#48439C0385): the crossing at this location would involve the construction of a new bridge (lateral encroachment) at Hulen Street and the Union Pacific Railroad tracks. The proposed alignment would cross approximately 500 ft of floodplain of a tributary to the Clear Fork of the Trinity River.

4. *Clear Fork of the Trinity River north of Bellaire Drive – Zone AE* (FEMA Map#48439C0385): the crossing at this location would involve the construction of a new bridge including main lanes and frontage roads (lateral encroachment) located approximately 300 ft within the Clear Fork of the Trinity River floodplain. The number of bents placed within the floodway would be kept to a minimum. The bridge would span the normal flow of the river and no fill material is anticipated within the floodway.

5. *Clear Fork of the Trinity River unnamed tributary south of Overton Ridge - Zone AE* (FEMA Map#48439C0395): the crossing at this location would involve a new bridge structure (lateral encroachment), it would cross approximately 500 ft of the unnamed tributary of the Clear Fork floodplain. Bents in the floodway would be kept to a minimum. The bridge would span the normal flow of the tributary.

6. *East of Benbrook Lake floodplain area north of Cleburne Street (Proposed Sycamore School Road)- Zone A* (FEMA Map#48439C0395): the crossing at this location would involve a new bridge (lateral encroachment), it would cross approximately 900 ft of floodplain of an unnamed tributary to the Clear Fork. The number of bents placed within the floodway would be kept to a minimum. No fill material is anticipated within the floodway.

7. *East of Benbrook Lake floodplain area south of Cleburne Street (Proposed Sycamore School Road) - Zone A* (FEMA Map#48439C0510): the crossing at this location would involve a new bridge (lateral encroachment), it would cross approximately 1,600 ft of floodplain of an unnamed tributary to the Clear Fork. Filling operations might be required at this location.

8. *East of Benbrook Lake floodplain area east of Old Granbury Road and south of proposed Risinger Road - Zone A* (FEMA Map#48439C0510): a new at grade elevation road would be constructed within approximately 700 ft of the floodplain causing parallel encroachment. Proposed design includes two 9ft x 7ft culvert boxes

to provide for required floodplain relief. Filling operations would be required at this location.

9. *East of Benbrook Lake floodplain area at Old Granbury Road and north of FM 1187 - Zone A* (FEMA Map#48439C0510): a new at grade elevation road would be constructed within approximately 400 ft of the floodplain causing parallel encroachment. Four 10ft x 7ft culvert boxes would be located at the site to provide for required floodplain relief. Filling operations might be required at this location.

10. *Unnamed tributary of Rock Creek at FM 1187 and Old Granbury Road- Zone A* (FEMA Map#48439C0510): the crossing at this location would involve lateral encroachment at the south terminus of the project where the proposed highway ties into the existing FM 1187. A new at grade elevation road would be constructed approximately 300 ft within the floodplain to meet the existing highway. No fill material is anticipated at this location.

Alternative C

1. *Clear Fork of the Trinity River at University Drive south of the IH 30* – Zone AE (FEMA Map#48439C0405): the crossing at this location would involve the construction of a new bridge, located approximately 1,300 ft within the Clear Fork of the Trinity River floodplain. The normal flow in the river would not be affected because bridges would span it. Limited fill material would be necessary for the bridge abutments.

2. *Clear Fork of the Trinity River tributary south of the railroad tracks – Zone AE* (FEMA Map#48439C0385): the crossing at this location would involve the construction of a new bridge (lateral encroachment) at Hulen Street and the Union Pacific Railroad tracks. The proposed alignment would cross approximately 500 ft of floodplain of a tributary to the Clear Fork of the Trinity River.

3. *Clear Fork of the Trinity River north of Bellaire Drive – Zone AE* (FEMA Map#48439C0385): the crossing at this location would involve the construction of a new bridge including main lanes and frontage roads (lateral encroachment) located approximately 300 ft within the Clear Fork of the Trinity River floodplains. The number of bents placed within the floodway would be kept to a minimum. The bridge would span the normal flow of the river and no fill material is anticipated within the floodway.

4. *Clear Fork of the Trinity River unnamed tributary south of Overton Ridge - Zone AE* (FEMA Map#48439C0395): the crossing at this location would involve a new bridge (lateral encroachment), it would cross approximately 500 ft of floodplain of an unnamed tributary to the Clear Fork floodplain. The number of bents placed within

the floodway would be kept to a minimum. The bridge would span the normal flow of the tributary.

5. *East of Benbrook Lake floodplain area north of Cleburne Street (Proposed Sycamore School Road)- Zone A* (FEMA Map#48439C0395): the crossing at this location would involve a new bridge (lateral encroachment), it would cross approximately 900 ft of floodplain of an unnamed tributary to the Clear Fork. The number of bents placed within the floodway would be kept to a minimum. No fill material is anticipated within the floodway.

6. *East of Benbrook Lake floodplain area south of Cleburne Street (Proposed Sycamore School Road) - Zone A* (FEMA Map#48439C0510): the crossing at this location would involve a new bridge (lateral encroachment), it would cross approximately 1,600 ft of floodplain of an unnamed tributary to the Clear Fork. Filling operations might be required at this location.

7. *East of Benbrook Lake floodplain area east of Old Granbury Road and south of proposed Risinger Road - Zone A* (FEMA Map#48439C0510): a new at grade elevation road would be constructed within approximately 700 ft of the floodplain causing parallel encroachment. Proposed design includes two 9ft x 7ft culvert boxes to provide for required floodplain relief. Filling operations would be required at this location.

8. *Unnamed tributary of Rock Creek west of Stuart-Feltz Road – Zone A* (FEMA Map#48439C0510): a new at grade elevation road would be constructed within approximately 500 ft of this Zone A floodplain causing longitudinal encroachment. A 400 ft span bridge would be located at the site to provide for required floodplain relief.

9. *East of Benbrook Lake floodplain area at Old Granbury Road and north of FM 1187 - Zone A* (FEMA Map#48439C0510): a new at grade elevation road would be constructed within approximately 400 ft of the floodplain causing longitudinal encroachment. Four 10ft x 7ft culvert boxes would be located at the site to provide for required floodplain relief. Filling operations might be required at this location.

10. *Unnamed tributary of Rock Creek at FM 1187 and Old Granbury Road- Zone A* (FEMA Map#48439C0510): the crossing at this location would involve lateral encroachment at the south terminus of the project where the proposed highway ties into the existing FM 1187. A new at grade elevation road would be constructed approximately 300 ft within the floodplain to the meet existing highway. No fill material is anticipated at this location.

Alternative D

1. *Clear Fork of the Trinity River along Forest Park Boulevard south of Lancaster Avenue – Zone AE* (FEMA Map #48439C0405) the floodway impacts at this location would involve a longitudinal encroachment of approximately 3.7 ac for the construction of a new Forest Park Boulevard connector. Fill material would be necessary for the construction of the road.

2. *Clear Fork of the Trinity River at University Drive south of the IH 30* – Zone AE (FEMA Map#48439C0405): the crossing at this location would involve the construction of a new bridge, located approximately 1,300 ft within the Clear Fork of the Trinity River floodplain. The normal flow in the river would not be affected because bridges would span it. Limited fill material would be necessary for the bridge abutments.

3. *Clear Fork of the Trinity River tributary south of the railroad tracks – Zone AE* (FEMA Map#48439C0385): the crossing at this location would involve the construction of a new bridge (lateral encroachment) at Hulen Street and the Union Pacific Railroad tracks. The proposed alignment would cross approximately 500 ft of floodplain of a tributary to the Clear Fork of the Trinity River.

4. *Clear Fork of the Trinity River north of Bellaire Drive – Zone AE* (FEMA Map#48439C0385): the crossing at this location would involve the construction of a new bridge structure including main lanes and frontage roads (lateral encroachment) located approximately 300 ft within the Clear Fork of the Trinity River floodplain. The number of bents placed within the floodway would be kept to a minimum. The bridge would span the normal flow of the river and no fill material is anticipated within the floodway.

5. *Clear Fork of the Trinity River unnamed tributary south of Overton Ridge - Zone AE* (FEMA Map#48439C0395): the crossing at this location would involve a new bridge (lateral encroachment), it would cross approximately 500 ft of floodplain of an unnamed tributary to the Clear Fork. The number of bents placed within the floodway would be kept to a minimum. The bridge would span the normal flow of the tributary.

6. *East of Benbrook Lake floodplain area north of Cleburne Street (Proposed Sycamore School Road)- Zone A* (FEMA Map#48439C0395): the crossing at this location would involve a new bridge (lateral encroachment), it would cross approximately 900 ft of floodplain of an unnamed tributary to the Clear Fork. The number of bents placed within the floodway would be kept to a minimum. No fill material is anticipated within the floodway.

7. *East of Benbrook Lake floodplain area south of Cleburne Street (Proposed Sycamore School Road) - Zone A* (FEMA Map#48439C0510): the crossing at this location would involve a new bridge (lateral encroachment), it would cross approximately 1,600 ft of floodplain of an unnamed tributary to the Clear Fork. Filling operations might be required at this location.

8. *East of Benbrook Lake floodplain area east of Old Granbury Road and south of proposed Risinger Road - Zone A* (FEMA Map#48439C0510): a new at grade elevation road would be constructed within approximately 700 ft of the floodplain causing longitudinal encroachment. Proposed design includes two 9ft x 7ft culvert boxes to provide for required floodplain relief. Filling operations would be required at this location.

9. *East of Benbrook Lake floodplain area at Old Granbury Road and north of FM 1187 - Zone A* (FEMA Map#48439C0510): a new at grade elevation road would be constructed within approximately 400 ft of the floodplain causing longitudinal encroachment. Four 10ft x 7ft culvert boxes would be located at the site to provide for required floodplain relief. Filling operations might be required at this location.

10. *Unnamed tributary of Rock Creek at FM 1187 and Old Granbury Road- Zone A* (FEMA Map#48439C0510): the crossing at this location would involve lateral encroachment at the south terminus of the project where the proposed highway ties into the existing FM 1187. A new at grade elevation road would be constructed approximately 300 ft within the floodplain to meet the existing highway. No fill material is anticipated at this location.

Construction of river crossings and roadways would involve placement of bents within the floodway, excavations and filling operations that might increase the downstream water surface. Preliminary studies indicate that stream crossings and stormwater runoff from the facility would not result in exceeding the 100-year floodplain elevation. Detailed hydraulic studies would be performed during the Plan Specification and Estimates (PS&E) stages and would follow current TxDOT and FHWA design criteria and standards. The facility would allow proper conveyance of the 100-year frequency flood (acceptable inundation of the roadway being acceptable) without causing substantial damage to the roadway, streams or other property.

The project is not anticipated to increase the 100-year base-flood elevation by more than 1-foot. An increase of 1-foot of elevation would violate the FEMA flood regulations and

related Corridor Development Certificate requirements under the Trinity River Corridor common permit requirements. Coordination with FEMA would not be required if the proposed alignments do not raise the 100-year flood level by greater than 1-foot in elevation. There would be no affect on the status of the National Flood Insurance Program (NFIP); therefore, no additional coordination with FEMA would be required.

At this stage of project development no major changes to streams and floodplains elevations are anticipated. The USACE and FEMA would be notified of any significant change, when and if appropriate base hydraulic studies indicate a significant change to the floodplain elevation.

No-build Alternative

The No-build alternative would have no impact on the existing streams, floodways or floodplains.

Wild and Scenic Rivers Impacts

There are no wild or scenic rivers as designated by the National Parks Service within the Build alternatives PSC or vicinity. The project would not impact any present, proposed, or potential unit of the National Wild and Scenic Rivers system.

Coastal Barriers and Coastal Zone Impacts

There are no coastal barriers or coastal zones located within the PSC or vicinity. There are no coastal barriers or coastal zones that would be impacted by this project.

Threatened or Endangered Species, Trees and Vegetation Impacts

Endangered Species

Available information on threatened and endangered species from governmental agencies was obtained in order to assess the impact of the proposed SH 121T. The FWS branch office in Arlington, Texas provided the list of endangered, threatened, candidate species, and species of concern for Tarrant County. The TPWD Biological and Conservation Data System provided the State list for Tarrant County (Rev. 8/26/99). These two lists were combined and are presented in Table IV-5. The area around Benbrook Lake supports the feeding and staging cycles of a wide variety of migratory birds. Over 40 species of mammals and over 500 species of birds, both resident and transient are known to occur within Tarrant County and would have access to the PSC. The presence of any of these species within the PSC would be limited by their compatibility with urban activity.

Alternatives A, B, C and D

The project is not expected to jeopardize the continued existence or habitat of any threatened or endangered species listed in Table IV-5. No Federally or State designated endangered or threatened species were identified within the PSC during field visits. Rivers and stream crossings would be temporarily affected during construction. Sediment and erosion control measures would be implemented to minimize any negative impact on the stream environment.

No-build Alternative

The No-build alternative would have no affect on any threatened and endangered species or vegetation.

Trees, Vegetation, and Wildlife Habitat

The project area is located within the Texan Biotic Province in a transition area of the Blackland Prairies and East Cross Timbers. Oak-hickory forests mixed with bluestem prairies characterize this region. Soils are light colored, acid sandy loams or sands in the

uplands, with light brown to gray, acid sandy loams to clays in the bottomlands. According to *Preserving Texas' Natural Heritage*, by The Natural Heritage Policy Research Project, river valleys in the region historically supported a forest of hackberries and pecans mixed with oaks.

Hardwood trees such as pecan, oak, elm and mesquite can be found in the project area. Vegetation in the upland areas is composed of big bluestem, little blue stem, Indian grass, switchgrass, gramas, and buffalo composes the vegetation in the area. Shrubs and vines include skunkbush, saw greenbriar, bumelia, and poison ivy.

Alternatives A, B, C and D

Approximately 770 acres would be required for the proposed corridor. A total of 37 acres of trees, calculated through interpretation of aerial photography, might be removed for roadway construction. This area represents less than 5 percent of the total area located within the ROW. A tree survey was performed to determine the types and percent of trees over 6 in diameter at breast height (dbh) that might be cleared along the project. Four zones of tree areas were identified. These zones are delineated as follows:

1. North of IH 30 (area east of Forest Park Boulevard, south of the Holly Water Treatment Plant),
2. South of IH 30 (along Vickery Boulevard to Hulen Street),
3. Undeveloped property area (west of Hulen Street along the Clear Fork of the Trinity River and south to IH 20) and
4. South of IH 20 to FM 1187.

The first three zones maintain large tree concentrations; the section from IH 20 to FM 1187 is comprised of 95 percent mesquite and scrub bushes. In summary, the species of trees found along the project are: pecan, hackberry (*Celtis laevigata)*, live oak, elm, cedar elm, cottonwood (*Populus deltoids)*, hickory (*Carya cordiformis)*, post oak (*Quercus stellata)*, china-berry (*Melia azedarach)*, black willow (*Salix nigra)*, box elder (*Acer negundo)*,

mesquite, white mulberry (*Morus alba)*, and Bois D' Arc (*Macura pomifera)*. Ornamental trees include crape myrtle, sweetgum, live oak, holly, mimosa and common fig (*Ficus carica).*

A tree survey was performed in the areas north and south of IH 30. Table V-17 depicts the results of the tree survey located within the ROW.

TABLE V-17

PREDOMINANT TREE BLOCK COMPOSITION ALONG THE PSC

Species	% Of Canopy	Range of dbh in inches	Average dbh in inches	Height Range in ft
North of IH 30				
Hackberry	59	<2 – 36	12	8 – 50
Pecan	15	4 – 30	10	12 – 60
Elm	11	<2 – 40	14	10 – 40
China-berry	11	<2 – 10	5	10 – 15
Live Oak	3	18 – 24	20	30 – 35
Box Elder	1		16	30
South of IH 30				
Hackberry	43	<2 – 32	12	20 - 30
Pecan	23	4 – 24	8	15 – 35
Cottonwood	12	8 – 14	10	15 – 30
Live Oak	8	8 – 24	12	15 – 30
Elm	6	4 – 14	8	10 – 25
Hickory	5	6 – 10	8	15 – 25
China-berry	3	6 – 10	8	10 – 20

The vast majority of trees in the north area are associated with fence lines and property lines. Understory consists mainly of Bermuda grass (*Cynodon dactylon*) and poison ivy (*Toxicodendron radicans*) with occasional samplings of the dominant tree species. Ornamental trees in this area include crape myrtle, sweetgum, live oak, holly, fig, and mimosa.

South of IH 30, hackberry trees, pecan trees, cottonwood trees, live oak trees, elm trees, hickory trees, and china-berry trees are present and may be removed. Other trees present but uncommon were mesquite, fruitless mulberry, black willow, and Bois D' Arc trees. Ornamental trees include: live oaks and crape myrtles.

For the undeveloped property area, the percent trees within the ROW were determined to be: 4.3 percent of bois D' arc, 6.9 percent of cottonwood, 16.4 percent of hackberry, 4.3 percent of hickory, 50 percent of elm, 11.2 percent of post oak, and 6.9 percent pecan trees, and may be affected. Ornamental trees include: red oaks, mimosa, crape myrtle, and live oak trees. ROE has not been granted for this section so verification of species composition and attributes could not be conducted. The percent of canopy mentioned above is based upon previous site surveys.

Each of the Build alternatives would affect each of the areas to a varying degree; however, the species dominance and characteristics would remain consistent for each alternative. During construction, TxDOT would minimize the amount of native vegetation disturbed. During final project design mature woody vegetation and/or unusually large specimens might not require clearing if they are beyond the safety clear zone or in areas where guard fencing may be used. No habitat types requiring mitigation per the provision (4)(A)(ii) of the TxDOT – TPWD MOU will be impacted by the proposed project.

The Build alternatives would have minimal impact on the vegetation and trees along the PSC. The vegetation and trees within the PSC do not provide special habitat value for endangered or threaten species. No vegetation types exist in the PSC that fit the descriptions of rare vegetation series (S1, S2, or S3 series levels) as described by the TxDOT – TPWD MOU.

TxDOT would minimize the impact caused by the loss of vegetation by preserving as many trees as possible. In accordance with Provision (4)(A)(ii) of the MOU and at the Fort Worth District's discretion, no mitigation for impacts to non-regulated habitat will be offered.

TxDOT anticipates that any impacts to riparian vegetation would be mitigated for as part of Section 404 mitigation requirements.

No-build Alternative

The No-build alternative would have no known affect on any habitat composition for any particular wildlife species.

Historic Preservation Impact

Archeological Surveys

A TxDOT survey was performed along the PSC in 1994. The survey included an area extending from Fort Worth to Cleburne and resulted in the recording of one prehistoric archeological site: 41TR137. This site is located west of Old Granbury Road and south of Columbus Trail.

Two other previous TxDOT surveys have been performed within the vicinity of the PSC, one on IH 20 in the City of Benbrook and the other on a section of FM 1187. In addition, a survey for the Department of Housing and Urban Development included a tract of 22 acres east of Benbrook. No prehistoric archeological sites were identified as a result of these surveys.

An archeological survey of the northern sections of the PSC was conducted in March of 1999. It included nearly all of the northern sections of the PSC that were not surveyed in 1994. Certain areas in the northern section of the project were not surveyed, because they are currently the locations of active businesses in urban settings. Survey of these latter areas will be relegated to the construction phase of the project. The survey recently conducted (1999) covered a very large tract of private land that crosses a section of the Clear Fork of the Trinity River. Two archeological sites were discovered within the proposed ROW on the combined alternatives, one prehistoric (41TR170) and one historic (41TR171).

Five additional prehistoric archeological sites have been recorded in the general area of the project (see below) but none of these are located within the proposed ROW of the combined alternatives.

Archeological Sites

Prehistoric site 41TR170 was discovered buried within floodplain deposits on the south side of the Clear Fork. Survey of the 41TR170 area revealed a buried, multi-component prehistoric site. The site is extensive and covers a large portion of the ROW where the project area intersects the southern edge of the Clear Fork. Two distinct lenses of prehistoric cultural materials were detected, one buried at circa (ca) three feet below surface and one buried at ca 4.25 feet below the surface. This suggests the presence of at least two different prehistoric occupations during the late Holocene.

Site 41TR170 contains intact, rock lined hearth features, exhibits good organic preservation (animal bone and charcoal), and is buried at variable depths in the floodplain. Thus, Site 41TR170 appears to be undisturbed and exhibits several of the positive qualities by which the NRHP significance of archeological sites is measured. Geomorphic evaluation of the floodplain in this area suggests the presence of deep Holocene soils, and that the cultural materials might have been deposited relatively late in the Central Texas archeological sequence (Late or Post-Archaic, over the last 1000-2000 years).

Historic archeological site 41TR171 consists of a collection of historic to modern buildings and building remains located along an abandoned road. The site is located north of the Clear Fork of the Trinity River. This site consists of a pile of rough cut stone and fence remnants at the southern end of the site, barbed wire fencing and a dilapidated shed and cattle loader in the center, an old foundation remnant likely dating to the turn of the century further north, and a dilapidated shed at its northern end. Also included in the site are a number of collections

of trash and other refuse. About 50 percent of this site is located within the SH 121T ROW. Site 41TR171 is disturbed and contains a mix of historic and modern-age deposits. The site appears ineligible for the NRHP or as a SAL.

Five additional prehistoric archeological sites have been recorded in the general area of the project (41TR65, 66, 119, 137, 147). Of these, only Site 41TR137 is located close to the ROW. Archeological Site 41TR137, recorded in the TxDOT survey of 1994 is located near a shallow sloping terrace on the north side of a drainage leading into Lake Benbrook. At the time of recording, the site area was pastureland. Recorders observed a biface, chert flakes, flakes of other materials and fire-cracked rock. No features were observed and no shovel tests were performed in the site. Twenty-two shovel tests were performed west of the site in the projected ROW of the road. These produced negative results suggesting that the site would not be impacted by construction of the planned tollroad.

Historic Resources

NRHP Properties and SALs

Although one recorded Texas Historic Landmark is located within 0.25 mi from the location of the proposed new roadway, no NRHP properties or SALs have yet been designated within the PSC.

Historical Markers

Two cemeteries with historical markers are located in the area. Burke Cemetery is located 0.50 mi south of the project at the Clear Fork of the Trinity River and the Wouldburne Cemetery is in a residential development on the north side of Mary's Creek near its confluence with the Clear Fork of the Trinity River. Neither cemetery will be impacted by the proposed project.

One additional historical marker is situated west of the Cleburne city limit on US 67. It reads:

Site of Wardville (1/4 mi. S. of marker)
First county seat of Johnson County, chosen in Aug. 1855, and located on an 80-acre donation from William O'Neal. Named for Thomas William Ward (1807-72), a Republic of Texas soldier and second commissioner of the General Land Office of Texas. The first courthouse, 16 ft square, was built by O'Neal of logs overlaid with clapboards, at a cost of $439. When Wardville was found to violate the Texas Constitution's requirement that a county seat be within 5 mi of the center of the county, it was abandoned (1856). Ironically, later county line changes made it near the center.

Cemeteries

Four cemeteries are found within the general project area, but would not be affected by construction of the project. Two of the cemeteries were noted above and have historical markers associated with them. The other two are known as Muhlinghause and Crilleland Cemeteries situated along Rock Creek. Both sites are about a mile west of the project.

Historic Buildings and Structures

Historic Buildings and Structures — Field Survey Results

The following historic resource information identifies architectural sites (buildings, structures, objects, and districts, etc.) within the Area of Potential Effect (APE) for the proposed SH 121 project. The Area of Potential Effect, as designated by the TxDOT Environmental Affairs Division (TxDOT-ENV) for this proposed undertaking is one-quarter of a mile on either side of the proposed roadway. Archival research and a reconnaissance survey were conducted to identify historic-age sites (pre-1952) within the project APE.

The archival research consisted of reviewing the National Register of Historic Places (NRHP), the State Archeological Landmark (SAL) listings, and the Historic Fort Worth Library and property files which indicated that no National Register Markers, three Official State Historical Markers, and one City of Fort Worth Marker commemorating important historical figures were identified within the APE for the proposed route. The reconnaissance survey consisted of identifying, examining, and photographing potential sites of interest, and on occasion were supplemented with informal interviews with interested property owners. Based on the *Secretary of Interior's Standards and Guidelines for the Evaluation of Historic Properties* the historical significance and architectural integrity the buildings were evaluated for their potential eligibility to the NRHP.

The project area stretches from IH-30 to FM 1187. There were no architectural sites more than 50 years identified in the southern portion of the project area from IH-20 to FM 1187. However, there was a large concentration of historic-age resources located between IH 30 to IH 20 in the northern portion of the project area. As a result, the focus of the field survey was between Eighth Street and Hulen Street with which 257 residential, commercial, and industrial properties, bridges, railroad structures, and a botanical garden (Site Nos. 1

through 257) were identified and evaluated for National Register eligibility based on the following criteria. In addition, specific information pertaining to historic buildings including mapped location, photo documentation and the potential impact of each alternative is included in a Historic Buildings Report submitted under separate cover.

NRHP Listed and Potentially Eligible Sites

The field survey identified 13 potentially NRHP eligible sites in the APE of the proposed new location roadway. Residential dwellings, railroad structures, a botanical garden, a historic

district, an industrial property, and a bridge are the building types identified, and of which summaries of each are included below.

Site Summaries

Factory Place Neighborhood:

Site No: 36	**Deats Duplex House**
Location:	3930-32 Lisbon Street
Construction Date:	1929
Property type:	Domestic/Multi-family Residential
Status:	Potentially eligible for National Register listing.

The single-story, clapboard sided, rectangular-plan duplex is surmounted by a front-gabled roof with exposed rafters. It is accessed through two single door entries sheltered by two symmetrical front-gabled porches with brick pier supports. The original owner of the house was George W. Deats, master mechanic for the Texas & Pacific Railroad. He purchased the property the year the Lancaster Railroad Yards moved to this area, and built the house the following year. It has served as rental property and an owner-occupied residence for workers in the Texas and Pacific Lancaster Railroad Yards. It is potentially eligible for National Register listing under Criterion A: Event and its association with community planning and development west of Fort Worth.

Brooklyn Heights Neighborhood:

Site No: 37	**Graham-Merchant House**
Location:	3504 Lovell Avenue
Construction Date:	1901
Property type:	Domestic/Single-family Residential
Status:	Potentially eligible for State of Texas Historical Marker program; potentially eligible for National Register listing.

The single-story, L-plan, clapboard sided house is surmounted by a cross-gabled roof. Single door entries on the east elevation and south facade are accessed through a shed and half-hipped roof porch supported by square wood columns. The windows are single or pairs of 1/1 double-hung wood sash. They are flanked by wood shutters and sheltered by shed awnings. Two separate shed roof additions extend from the north elevation.

Howard B. Graham who lived in it until 1913 built the house. He then sold it to Calvin C. Merchant, a laborer, who lived there until his death in 1924. His wife occupied the house until 1939. The Graham-Merchant house is potentially eligible for the official Texas Historical Markers Program and for listing in the National Register of Historic Places under Criterion C: Design/Construction and under Criterion B: association with a significant person.

Site No. 77	**Centennial Yards, Texas and Pacific Lancaster Railyards**
Location:	South of 3900 Block of Vickery Boulevard
Construction Date:	1928
Property type:	Railroad
Status:	Potentially eligible for National Register listing under the Railroad Structures Multiple Property Group.

Historically, the rail yards consisted of two office and machine shops and one repair facility. In 1928, John Lancaster, president of the Texas and Pacific Railroad, unveiled plans to improve the downtown rail system. The improvement involved relocating the roundhouse, train yards, repair facilities, and shops from the depot to a spot three miles southwest of the central business district of Fort Worth. This new location of facilities spawned a new community of industries and railroad workers who lived near by. Originally, the main structure featured multi-paned casement windows, a projecting cornice, and a parapet along the front elevations. The rail yards are potentially eligible for National Register listing under the proposed Railroad Structures Multiple Property Group.

Site No. 78	**Municipal Rose Garden/Fort Worth Botanical Gardens**
Location:	2200 Botanic Garden Drive
Construction Date:	1933-34
Property type:	Botanical Gardens
Status:	Potentially eligible for National Register listing

Historically, the oldest botanical gardens in Texas, it consists of the main building and the Rose Garden. Built with Depression Relief funds, the City of Fort Worth borrowed $340,000 from the Reconstruction Finance Corporation to construct a new city park. Work was completed by the Civil Works Administration who employed stonemasons, carpenters, and unskilled workers. The design, by Hare and Hare of Kansas City, Missouri, was based on a Renaissance axial plan, incorporating a formal garden in the center with smaller gardens radiating out on terraces below. The walkways and shelters are made of Palo Pinto County sandstone. The entire site is potentially eligible for National Register listing under Criterion C: Design/Construction and Criterion A: for its association with the Depression Era.

Site No. 79	**Texas and Pacific Railroad Bridge**
Location:	2000 Block of Vickery Boulevard
Construction Date:	1927
Property type:	Railroad
Status:	Potentially eligible for National Register listing under the Railroad Structures Multiple Property Group.

The Texas and Pacific Railroad Bridge steel through truss system supported by reinforced concrete piers and approaches. It crosses the Clear Fork of the Trinity River and is potentially eligible for National Register listing under the Railroad Structures Multiple Property Group.

Mistletoe Heights Neighborhood:

Site No. 80	**Mistletoe Heights Neighborhood Historic District**
Location:	Southside of Fort Worth
Construction Date:	ca. 1909/1922
Property type:	Residential District
Status:	Potentially eligible for National Register listing as a historic district.

Although it was platted in 1890, Mistletoe Heights was not immediately annexed to the city. Annexation was achieved in two phases, in 1909 and 1922. It was only after World War I that the area was developed as a residential district; during this period, city government became more structured and apportionment of services more organized. By the late 1920s, the area was densely settled, with an area of large homes as well as smaller enclaves of more modest bungalows. Today, Mistletoe Heights is a local conservation area, one of nine subdivisions comprising the Forest Park Conservation District. It is potentially eligible National Register listing as historic district significance in community planning and development.

Site No: 85	**Agee-Renfro-Vandervoort House**
Location:	1200 Mistletoe Drive
Construction Date:	ca. 1915
Use:	Domestic/Single-family Residential
Status:	Contributing member of the Forest Park Conservation District; potentially eligible for National Register listing following restoration and/or documentation.

The 2-story, brick, Mediterranean-influenced dwelling is surmounted by a hipped tile roof with boxed eaves, a plain frieze; and a hipped dormer. A single door entry with sidelights is accessed through a 1-story, hip-roofed, partial-width porch with paired round columns on a solid brick railing. The windows are single and triple 1/1 double-hung wood sash; windows north and south of the porch have an arched transom. A hipped porte-cochere with brick piers is at north elevation.

Howard L. Agee, president and general manager of the Agee Screen Company is the earliest recorded owner of the house. The Renfro family, owners of a drug store chain, owned the house in the 1920s and 1930s. In 1940, they traded the house to the Vandervoort family, owners of the Vandervoort Dairy, in exchange for the provision of ice cream to the Renfro Drug Store. The Vandervoort family sold the house in 1954. The house is a contributing member of the Forest Park Conservation District, and eligible for National Register listing under Criterion C: Design/Construction.

Site No: 117	**Boyd House**
Location:	1138 Clara Street
Construction Date:	ca. 1919
Use:	Domestic/Single-family Residential
Status:	Contributor to the Forest Park Conservation District; potentially eligible for National Register listing following restoration and/or documentation.

The 2-story, stuccoed, Prairie-influenced dwelling is surmounted by a hipped roof with wide overhanging eaves. A double door entry is accessed through a one-story hipped corner porch supported by stucco piers and a solid railing with concrete coping. The windows are single and bands of narrow 1/1 double-hung wood sash. It was built by the first owner, Ellis H. Boyd, part owner of a motor company and oil well manufacturing company in the 1920s. Currently, it is a contributing member of the Forest Park Conservation District, and potentially eligible for listing in the National Register under Criterion C: Design/Construction.

Site No: 144	**Klar House**
Location:	2400 Mistletoe Boulevard
Construction Date:	ca. 1927
Use:	Domestic/Single-family Residential

Status: Contributing member of the Forest Park Conservation District; potentially eligible for National Register listing following restoration and/or documentation.

The single-story, brick, Prairie-influenced dwelling is surmounted by a hipped tile roof with wide overhanging eaves. It is accessed through a hip-roofed, partial-width porch supported by brick piers with decorative column capitals and a solid brick railing topped by concrete coping. Windows are single, paired and triple 1/1 double-hung wood-sash with decorative muntins in the upper sash. Three brick chimneys rise above the north, south, and west elevations. The house was built by Stein & Carb for Jacob Klar, a partner in the jewelry firm of Wolf & Klar. It is a contributing member of the Forest Park Conservation District, and potentially eligible for listing in the National Register under Criterion C: Design/Construction as an excellent example of an embellished bungalow.

Quality Hill:

Site No. 239 **Cobb-Burney House**

Location: 1598 Sunset Terrace

Construction Date: 1903

Property type: Domestic/Single-family Residential

Status: Currently a State of Texas Historical Marker; potentially eligible for National Register listing.

The 2-story, rectangular-plan, yellow brick, Prairie-influenced house is surmounted by a side-gabled roof with large overhanging eaves. A single door entry accesses the southwest facade sheltered by a flat roof porch supported by rectangular brick columns that partially spans the facade. The entrance door is flanked by a single 4/1 double-hung wood sash window to the northwest and southeast. Pairs of casement windows with decorative wood muntins are featured on the second level. Other windows include shorter single or ribbon casement with decorative wood muntins. A decorative brick pattern

defines the soffit line around the house and is featured between each window on the second level. A brick chimney rises above the southwest slope of the roof.

The house was built for Lyman D. Cobb, a mortgage company president, and his wife Emma. In 1919 Emma Cobb sold the home to Judge Ivy Burney, a lawyer whose special field was the cattle industry. Currently the house bears a State of Texas Historical Marker and is potentially eligible for National Register listing under Criterion C: Design/Construction and for its influences of the Chicago Prairie School style of architecture.

Site No. 255	**Saint Louis and San Francisco Railroad Bridge**
Location:	2200 Block of W. 7th Street
Construction Date:	1931
Property type:	Railroad
Status:	Potentially eligible for National Register listing under the Railroad Structures Multiple Property Group.

The Saint Louis and San Francisco Railroad Bridge is a steel through truss system supported by reinforced concrete piers. It features a long timber trestle that extends west across Trinity Park. The bridge was built after the Saint Louis and San Francisco Railroad bought the right-of-way crossing the Clear Fork of the Trinity River. It is potentially eligible for National Register listing under the Railroad Structures Multiple Property Group.

Site No. 256	**City of Fort Worth Water Works/North Holly Water Treatment Plant**
Location:	1500 11th Avenue
Construction Date:	1891-92 to 1954
Property type:	Industrial
Status:	Potentially eligible for listing in the National Register of Historic Places

The City of Fort Worth Water Works/North Holly Water Treatment Plant is divided into two separate pieces of property, North Holly and South Holly. North Holly is a historic property built prior to 1952, and includes the earliest building, the pump building, dating from 1891-92. The plant was built in response to the city's unprecedented growth related to the coming of the railroads and associated industries. Additionally, the rectangular-plan, block form buildings incorporate elements of Romanesque Revival and Mission Revival influences which are a prime example of municipal design from the early twentieth century. For this reason it is potentially eligible for listing in the National Register of Historic Places under Criterion A: Event and its association with the historic growth and development of Fort Worth, and Criterion C: Design/Construction.

The property on which South Holly is located was developed separately from North Holly. Land was acquired by the City of Fort Worth in 1956 for construction of South Holly, which opened for operation in 1958. Prior to the City's acquisition of the property, the land was undeveloped and not used for water filtration or treatment; however, the buildings were sensitively designed to emulate the simple rectangular forms and the Romanesque Revival style of North Holly. After coordination with TxDOT-ENV, the buildings were determined ineligible for the National Register because they do not meet the 50-year age requirement established by the 2002 letting date of the SH 121 project.

Site No. 257	**West Lancaster Bridge**
Location:	2800 Block of W. Lancaster
Construction Date:	1938
Property type:	Roadway Underpass-Overpass/Bridges
Status:	Potentially eligible for listing in the National Register of Historic Places

Crossing over the West Fork of the Trinity River and Trinity Park, the bridge was built to reduce traffic congestion on W. 7th Street. The underpass over Foch Street incorporates a retaining wall and a pedestrian stairway to the bridge level and was built to provide access to Farmington Field Stadium. According to the Tarrant County Historic Resource Survey, the bridge is potentially eligible listing in the National Register of Historic Places as part of the Roadway Underpass-Overpass Multiple Property Group. "The significance of the group lies in its scale – unusually large for a Texas city –

and in its portrayal of the city's commitment to accommodate rail facilities during a period of intense growth."(HPCTC 1982).

Non-eligible Sites

A total of 242 properties were identified in the project area that are not eligible for National Register listing, but are more than 50 years in age. Additionally, two buildings, Site Nos. 82 and 148, are included in the survey and are less than 50 years in age. They are modern houses located in the Mistletoe Heights neighborhood. Constructed within the last two decades, they detract from the overall historic integrity of the neighborhood, but are included in the survey to demonstrate the current context of the area. More specific information pertaining to each historic-age and modern building, including photographic documentation and its relation to the proposed roadway, is included in the *Historic Buildings Report*, under separate cover.

Build Alternatives- Impacts

Prehistoric Sites- Combined Alternatives

Two archeological sites will be directly impacted by the combined alternatives (A-D) at the project crossing of Clear Fork of the Trinity River (41TR170, 41TR171). Site 41TR170 was recommended as potentially eligible for the NHRP and as a SAL in the Section 106 Archeological survey report submitted to the Environmental Affairs Division (ENV) of TxDOT in August 1999. In a letter dated March 28, 2000, TxDOT requested SHPO concurrence that Site 41TR170 warranted comprehensive testing to determine its NRHP eligibility. In a letter dated April 24, 2000, the THC concurred that Site 41TR170 warranted testing. Formal testing of the site is on hold pending right of entry.

Site 41TR171 is located north of the Clear Fork of the Trinity River. The site was recommended as not eligible for the NRHP or as a SAL in the August 1999 archeology survey report. In a letter dated March 28, 2000, TxDOT requested SHPO concurrence that site 41TR171 was not eligible for inclusion on the NRHP or for listing as a SAL and that no further archeological work was necessary

at the site. In a letter dated April 24, 2000, the THC concurred that the portion of Site 41TR171 within the proposed ROW was not eligible for inclusion in the NRHP or for listing as a SAL and that no further archeological work was necessary at the site.

No other prehistoric archeological sites are known to be located within the direct impact zone of the project area. No known archeological sites in close proximity to the project would be affected. Should the proposed route change 0.25 mi toward the east, site 41TR137 might be affected and possible impacts to the site would then need to be investigated.

Historic Buildings

This section documents potential impacts to archeological and architectural resources by the SH121 Tollroad alternatives, and how they will be resolved. NEPA requires agencies of the federal government to consider effects of their actions on "the human environment," which includes cultural as well as natural aspects of the environment. Cultural resources are defined as any prehistoric or historic district, building, structure, object or archeological site included in, or eligible for inclusion in the National Register of Historic Places (NRHP).

Under the Technical Advisory 771 of the Federal Highway Administration, historic structures/archeological sites determined eligible for listing in NRHP by the State Historic Preservation Officer which will be directly impacted by a FHWA funded project are subject to evaluation under Section 4(f) of the DOT Act 1966 (23 CFR 771.135). Section 4(f) requires that the agency show that all planning to minimize harm to any NRHP property resulting from the proposed action was considered and that all feasible or prudent alternatives to avoid adverse impacts to the NRHP property have been explored.

In addition to Section 4(f) requirements, Section 106 (36 CFR 800) of the 1966 National Historic Preservation Act, as amended, also requires the agency to consult with the State Historic Preservation Officer (SHPO) concerning the potential effects that a proposed project may have on NRHP properties located within the project's Area of Potential Effects (APE). The law requires that the

agency show that project planners and engineers have "taken into account" the effects the project may have on NRHP properties and that a reasonable effort has been made to preserve the resource through avoidance or other means to minimize adverse impacts to the property and/or the historic resource.

The criteria for assessing effect are prescribed in 36 CFR 800.9. The law states: "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."

Examples of adverse effects on historic properties include, but are not limited to,

- ? physical destruction or damage to all or part of the property;
- ? change of the character of the property's use or of physical features within the property's setting that contributes to its historic significance;
- ? introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features.

All remaining identification, assessment, and treatment of historic properties, whether archeological or architectural in nature, shall be completed in accordance with the PA. The remainder of this section describes the archeological resources that may be impacted by individual alignments and the historic buildings that may be impacted.

NRHP Listed and Potentially Eligible Sites

Alternative A

No direct impacts to NRHP eligible resources will occur as a result of construction of Alternative A. Construction of this alternative would indirectly impact 11 NRHP eligible properties including six

houses, one historic district, one rail yard, one botanical garden, and one railroad bridge. In addition, construction of Alternative A may result in adverse effects to the indirectly impacted historic resources (see definition of "adverse effect" above). Evaluation of adverse effects is ongoing and will continue throughout the design phase of the PSC.

The first two houses to be indirectly impacted by Alternative A are in the central portion of the PSC and include the Deats Duplex (Site No. 36) and the Graham-Merchant House (Site No. 37). The Deats Duplex is at 3930-32 Lisbon Street. The house is approximately 700 feet west of the ROW, and previously described on page V-145 in the Factory Place Neighborhood. The Graham-Merchant House is at 3504 Lovell Avenue near the center of the project area. It is previously described on page V-146, and stands approximately 450 feet west of the projected ROW in the Brooklyn Heights Neighborhood.

Three houses that will be indirectly impacted by Alternative A are in the Mistletoe Heights Neighborhood just east of the Trinity River and south of the proposed roadway. The Agee-Renfro-Vandervoort House (Site No. 85) is at 1200 Mistletoe Drive and approximately 650 feet southeast of the ROW; the Boyd House (Site No. 117) is at 1138 Clara Street and approximately 750 feet southeast of the ROW; and the Klar House (Site No. 144) is at 2400 Mistletoe Boulevard and approximately 1000 feet southeast of the ROW. All of the houses are contributing members of the Forest Park Conservation District, and previously discussed on pages V-148 through V-150.

The Mistletoe Heights Neighborhood is recommended eligible for NRHP listing as a historic district, Mistletoe Heights Historic District (Site No. 80), and also stands to be indirectly impacted by the constriction of Alternative A. Previously described on page V-148, it is one of nine subdivisions comprising the Forest Park Conservation District. The district is approximately 300 feet to 1325 feet southeast of the ROW.

The Cobb-Burney House (Site No. 239) is at 1598 Sunset Terrace near the northeast termini of the PSC. The house is designated by a Texas Historical Marker and situated in the Quality Hill

Neighborhood. Previously discussed on page V-150, it is approximately 1100 ft east of the Alternative A ROW.

The Centennial Yards, also known as Texas and Pacific Lancaster Rail Yards (Site No. 77) previously described on page V-146-147 are just south of the 3900 Block of Vickery Boulevard. They are slightly south of the center of the project area, immediately adjacent to the proposed new location roadway. The Municipal Rose Gardens/Fort Worth Botanical Gardens (Site No. 78) are slightly north of the center of the project area at 2200 Botanic Garden Drive previously described on page V-147. The gardens start approximately 800 feet north of the projected ROW and extend to the north. The Texas and Pacific Railroad Bridge (Site No. 79) is at the 2000 Block of Vickery Boulevard. Previously described on page V-147, the bridge is approximately 75 feet southeast of the projected Alternative A ROW.

Alternative B

Alternative B may directly impact one potential NRHP eligible property, and indirectly impact six potential NRHP eligible properties. These include one water treatment plant, two houses, two bridges, one botanical garden, and one rail yard. According to verbal and graphic schematics presented by the engineer, it is understood that Alternative B is the same as Alternative D in the northern portion of the PSC. Therefore, Alternative B would have the same impacts to historic properties as Alternative D. Alternative D is considered the "original" alignment, and the following effect recommendations are a result of a previous review and consultation with TxDOT-ENV in February 2000.

The City of Fort Worth Holly Water Treatment Plant (Site No. 256) consists of two separate pieces of property, North Holly and South Holly. North Holly's simple rectangular block buildings incorporate elements of Romanesque Revival and Mission Revival styling and represent municipal design ideology of the early twentieth century. North Holly is potentially eligible for NRHP listing under Criteria A and C; however, there will be no direct taking is proposed by the project of any

building or part of the site that is the North Holly Water Plant, and therefore, no 4(f) evaluation will be required.

South Holly is the modern portion of the facility constructed between 1956 and 1958. While South Holly does maintain a sense of continuity with North Holly in terms of form, context and architecture, it is not eligible for the National Register of Historic Places because it does not meet the 50-year age requirement established by the 2004 letting date of the SH 121 project. Should the letting date be moved back until the year 2006, South Holly should again be formally evaluated for NRHP eligibility. While a direct taking is proposed for a small portion of South Holly, a Section 4(f) evaluation is not required.

The first house (Site No. 36) is the Deats Duplex at 3930-32 Lisbon Street. The house is approximately 700 ft west of the ROW, and previously described on page V-145 in the Factory Place Neighborhood. The second house, the Graham-Merchant House (Site No. 37) is at 3504 Lovell Avenue near the center of the project area. It is previously described on page V-146, and stands approximately 450 ft west of the projected ROW in the Brooklyn Heights Neighborhood.

The Centennial Yards, also known as Texas and Pacific Lancaster Rail Yards (Site No. 77) previously described on page V-146-147 are just south of the 3900 Block of Vickery Boulevard. They are slightly south of the center of the project area, immediately adjacent to the proposed new location roadway. The Municipal Rose Gardens/Fort Worth Botanical Gardens (Site No. 78) are slightly north of the center of the project area at 2200 Botanic Garden Drive previously described on page V-147. The gardens start approximately 800 ft north of the projected ROW and extend to the north. The St. Louis-San Francisco Railway Bridge (Site No. 255), previously described on page V-147, is at the 2200 Block of West 7th Street, the St. Louis-San Francisco Bridge is approximately 1200 ft west of the projected ROW.

The West Lancaster Bridge (Site No. 257) is located in close proximity to the proposed project area and is potentially eligible for the National Register of Historic Places under Criteria A and C. The SH

121 facility is currently proposed to lower to ground level approximately 200 feet south of the bridge, and then exist at grade, and pass under the bridge. Indirect impacts in the form of visual obstruction may alter the integrity of setting of the bridge and have the potential to be adverse. Therefore, indirect impacts to the bridge have the potential to represent a constructive-use 4(f) issue according to the TxDOT Environmental Affairs Division, who will consult with the SHPO to seek ways to minimize any potential adverse effects on the bridge. The current design suggests that no direct impacts will occur to the bridge. Should the design be altered resulting in direct impacts, the TxDOT Environmental Affairs Division will consult with the SHPO to seek ways to minimize any adverse effects on the bridge.

Alternative C

No direct impacts to NRHP eligible resources will occur as a result of construction of Alternative C. Construction of this alternative would indirectly impact 11 NRHP eligible properties including six houses, one historic district, one rail yard, one botanical garden, and one railroad bridge. In addition, construction of Alternative C may result in adverse effects to the indirectly impacted historic resources (see definition of "adverse effect" above). Evaluation of adverse effects is ongoing and will continue throughout the design phase of the PSC.

The first two houses to be indirectly impacted by Alternative C are in the central portion of the PSC and include the Deats Duplex (Site No. 36) and the Graham-Merchant House (Site No. 37). The Deats Duplex is at 3930-32 Lisbon Street. The house is approximately 700 feet west of the ROW, and previously described on page V-145 in the Factory Place Neighborhood. The Graham-Merchant House is at 3504 Lovell Avenue near the center of the project area. It is previously described on page V-146, and stands approximately 450 feet west of the projected ROW in the Brooklyn Heights Neighborhood.

Three houses that will be indirectly impacted by Alternative C are in the Mistletoe Heights Neighborhood just east of the Trinity River and south of the proposed roadway. The Agee-Renfro-Vandervoort House (Site No. 85) is at 1200 Mistletoe Drive and approximately 650 feet southeast of

the ROW; the Boyd House (Site No. 117) is at 1138 Clara Street and approximately 750 feet southeast of the ROW; and the Klar House (Site No. 144) is at 2400 Mistletoe Boulevard and approximately 1000 feet southeast of the ROW. All of the houses are contributing members of the Forest Park Conservation District, and previously discussed on pages V-148 through V-150.

The Mistletoe Heights Neighborhood is recommended eligible for NRHP listing as a historic district, Mistletoe Heights Historic District (Site No. 80), and also stands to be indirectly impacted by the constriction of Alternative C. Previously described on page V-148, it is one of nine subdivisions comprising the Forest Park Conservation District. The district is approximately 300 ft to 1325 feet southeast of the ROW.

The Cobb-Burney House (Site No. 239) is located at 1598 Sunset Terrace near the northeast termini of the PSC. The house is designated by a Texas Historical Marker and situated in the Quality Hill Neighborhood. Previously discussed on page V-150, it is approximately 1100 feet east of the Alternative C ROW.

The Centennial Yards, also known as Texas and Pacific Lancaster Rail Yards (Site No. 77) previously described on page V-146-147 are just south of the 3900 Block of Vickery Boulevard. They are slightly south of the center of the project area, immediately adjacent to the proposed new location roadway. The Municipal Rose Gardens/Fort Worth Botanical Gardens (Site No. 78) are slightly north of the center of the project area at 2200 Botanic Garden Drive previously described on page V-147. The gardens start approximately 800 feet north of the projected ROW and extend to the north. The Texas and Pacific Railroad Bridge (Site No. 79) is at the 2000 Block of Vickery Boulevard. Previously described on page V-147, the bridge is approximately 75 feet southeast of the projected Alternative C ROW.

Alternative D

Alternative D may directly impact one potential NRHP eligible property, and indirectly impact six potential NRHP eligible properties. They include one water treatment plant, two houses, two

bridges, one botanical garden, and one rail yard. Alternative D is considered the "original" alignment, and the following effect recommendations are a result of a previous review and consultation with TxDOT-ENV in February 2000.

The City of Fort Worth Holly Water Treatment Plant (Site No. 256) consists of two separate pieces of property, North Holly and South Holly. North Holly's simple rectangular block buildings incorporate elements of Romanesque Revival and Mission Revival styling and represent municipal design ideology of the early twentieth century. North Holly is potentially eligible for NRHP listing under Criteria A and C; however, no direct taking is proposed by the project of any building or part of the site that is the North Holly Water Plant, and therefore, no 4(f) evaluation will be required.

South Holly is the modern portion of the facility constructed between 1956 and 1958. While South Holly does maintain a sense of continuity with North Holly in terms of form, context and architecture, it is not eligible for the National Register of Historic Places because it does not meet the 50-year age requirement established by the 2004 letting date of the SH 121 project. Should the letting date be moved back until the year 2006, South Holly should again be formally evaluated for NRHP eligibility. While a direct taking is proposed for a small portion of South Holly, a Section 4(f) evaluation is not required at this time.

The first house (Site No. 36) is the Deats Duplex at 3930-32 Lisbon Street. The house is approximately 700 ft west of the ROW, and previously described on page V-145 in the Factory Place Neighborhood. The second house, the Graham-Merchant House (Site No. 37) is at 3504 Lovell Avenue near the center of the project area. It is previously described on page V-146, and stands approximately 450 ft west of the projected ROW in the Brooklyn Heights Neighborhood.

The Centennial Yards, also known as Texas and Pacific Lancaster Rail Yards (Site No. 77) previously described on page V-146-147 are just south of the 3900 Block of Vickery Boulevard. They are slightly south of the center of the project area, immediately adjacent to the proposed new location roadway. The Municipal Rose Gardens/Fort Worth Botanical Gardens (Site No. 78) are slightly north

of the center of the project area at 2200 Botanic Garden Drive previously described on page V-147. The gardens start approximately 800 feet north of the projected ROW and extend to the north. The Saint Louis and San Francisco Railroad Bridge (Site No. 255), previously described on page V-147, is at the 2200 Block of West 7th Street, the Saint Louis and San Francisco Bridge is approximately 1200 feet west of the projected ROW.

The West Lancaster Bridge (Site No. 257) is located in close proximity to the proposed project area and is potentially eligible for the National Register of Historic Places under Criteria A and C. The SH 121 facility is currently proposed to be lowered to ground level approximately 200 feet south of the bridge, and then exist at grade, and pass under the bridge. Indirect impacts in the form of visual obstruction may alter the integrity of setting of the bridge and have the potential to be adverse.

Therefore, indirect impacts to the bridge have the potential to represent a constructive-use 4(f) issue, according to the TxDOT Environmental Affairs Division, who will consult with the SHPO to seek ways to minimize any potential adverse effects on the bridge. The current design suggests that no direct impacts will occur to the bridge. Should the design be altered resulting in direct impacts, the TxDOT Environmental Affairs Division will consult with the SHPO to seek ways to minimize any adverse effects on the bridge.

No-build Alternative

Implementation of the No-build alternative would result in no affects on prehistoric or historic cultural resources.

Recommendations

Formal testing of the Site 41TR170 is on hold pending right of entry to the property or right-of-way acquisition. Subsequent to the testing phase, if the site is determined eligible for the NRHP, and that the project poses an adverse effect to the site, any adverse effects would be resolved through mitigation measures such as data recovery. Survey data suggests that the site is not a potential 4(f) issue, as there are no discovered burials or archeological deposits of such extreme importance that

would warrant preservation in place. Site 41TR171 is an historic archeological site which has been determined not eligible for the NRHP or as a SAL.

An archeological survey was completed by TxDOT archeologists in 1994 involving the entire length of the project except the north end. There should therefore be no need for additional work on those portions of the project previously surveyed. The only areas remaining to be surveyed for prehistoric sites are highly urbanized and located in the northern section of the project area adjacent to University Drive and the crossing of the Clear Fork of the Trinity River. The survey of the remaining parcels and formal testing of 41TR170 will be completed following right-of-way acquisition (see THC coordination letter in Appendix E). The results of the latest survey suggest that no additional prehistoric sites exist within the PSC, much of which is disturbed by historic fill.

Continuing coordination with the SHPO has resulted in a finding of No Adverse Effect on historic resources in the project vicinity on the condition that TxDOT consider minimizing avoiding increases in traffic, noise and light pollution in the designated historic areas. Please see SHPO coordination letter dated August 9, 2002 and TxDOT September 9, 2002 response letter in Appendix E.

TxDOT consultation with the State Historic Preservation Officer (SHPO) focused on the segment between Hulen Street and IH 30 of the project corridor because of the lack of historic resources elsewhere in the APE (see Appendix E). All historic properties have been identified within an APE of 1300' beyond the proposed ROW (see pages IV-27 thru IV -29). Potential effects on historic properties have been identified for each alternative under consideration (see pages V-146 thru V-153).

SHPO has concurred that Alternatives A and C will have no adverse effect on the historic properties. This is because the taking of property at the Holly Water Plant is eliminated, the visual intrusion on the Lancaster Bridge is eliminated and the visual intrusion that the direct connection to Forest Park Boulevard may have had on the Mistletoe Heights Neighborhood Historic District or the Sunset

Terrace neighborhoods is eliminated. Alternatives A and C were developed to avoid impacts, such as the visual impacts to neighboring residential areas and historic resources, that were identified through the public involvement process.

Alternatives B and D have been identified as having potential impacts at the Holly Water Plant, Lancaster Bridge and the Mistletoe Heights Neighborhood Historic District as either direct takes or indirect impacts. Those impacts would lead to a Section 4(f) evaluation.

Consultation with SHPO has been finalized for all alternatives. If an alternative is chosen that creates an adverse effect, TxDOT will resolve this effect by continuing consultation with the SHPO during the final design process

Hazardous Wastes Sites

Potential waste sites can be categorized as: hazardous, municipal, solid waste, demolition, or other environmentally sensitive materials that would require special handling prior to and during construction of the project.

For the purposes of this study, a hazardous waste site is a potentially contaminated area, regardless of size, where waste materials, UST's or other environmentally sensitive materials are stored, used, produced or ultimately disposed. The presence of these materials indicate the potential for contamination, thereby justifying further investigation to assess the waste related impacts to the project. Hazardous waste sites are regulated by the Resource Conservation Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Two categories of sites were identified within the PSC: former service/filling stations and commercial/industrial areas. Potential contamination associated with present and former service/filling stations located within the PSC is primarily related to the presence or former presence of UST's. UST's are strictly regulated by the TNRCC and EPA; however, UST's removed or taken out of service prior to the adoption of regulations might have released pollutants that remain in the

ground undetected. For these reasons, all current and former service/filling stations or any site that contains or formerly contained UST's should be considered potentially contaminated.

Commercial/Industrial areas might be contaminated due to the nature of the materials produced, raw materials used for production and/or the by-products of plant processes. There are numerous independently owned auto-repair businesses located along the northern section of the PSC. Auto-body shops and repair garages typically handle fuels, oils, paints, and solvents. The presence of these types of materials does not imply that the property is contaminated, but could indicate potential surface or underground contamination.

A *Phase I Environmental Assessment* (1998) "commercial" investigation was commissioned by the TxDOT Fort Worth District Office (Contract No. 44-845PF010) to identify areas of potential environmental concern relating to hazardous waste use on properties within the PSC. The report lists:

- TNRCC VCP,
- TNRCC LPST
- TNRCC registered PST sites,
- EPA RCRIS database information from the FINDS and
- The Texas Industrial and Hazardous Waste (TxIHW) database system.

A TxDOT HAZMAT study was subsequently conducted to identify any additional potential hazardous materials sites located within the potential ROW for Alternatives A, B, C and D. In addition to the databases mentioned above, the EPA *Envirofacts Database* was searched to locate RCRA and Superfund sites within or near the PSC. However, RCRA sites do not include conditionally exempt small quantity generators that might produce enough waste over time to affect the environment. An additional field investigation was conducted on October 4, 2001 to locate sites that might have been excluded from government databases. Three additional sites were located that might pose a potential hazardous material contamination. These sites are described as "potential" in each of the hazardous waste site tables that are

presented for the different Build alternatives. Further investigation of the sites identified in the study might be necessary prior to ROW acquisition and/or during construction.

Results from the 1998 *Phase I* "Commercial" investigation and the 2001 TxDOT research revealed that the majority of the hazardous waste sites within the PSC are located in two areas. As shown on Exhibits V-1-A, V-1-B, V-1-C and V-1-D, one of the areas is just north of IH 30 between Forest Park and Eleventh Avenue. The second area is along Vickery Boulevard between Concrete Street and Forest Park.

The following summarizes the hazardous wastes sites investigation results for each of the Build alternatives:

Alternative A

- Two VCP sites are located within the potential ROW (see Table V-18). These sites are located at Forest Park and Vickery Boulevard and at 2400 West Freeway and North Forest Park. The first site was previously designated as a metals processing facility, and was found to have elevated levels of metals in the soil. The VCP applicant is the FDIC and the case is in the withdrawal phase. The second site is a municipal solid waste landfill facility. Soil and groundwater contamination from metals and petroleum hydrocarbons has been identified at this site. According to the TNRCC VCP Database, as of April 26, 2001, the site is currently in the remediation phase. High levels of methane have been detected, which represents a hazard if construction activities should take place in the area.

- Four RCRA sites within the potential ROW store and/or generate hazardous materials/waste as either a small quantity or large quantity generator.

- Six LPST sites are located within the potential ROW. Records show that the leaking underground storage tanks at these facilities have been removed from the ground and the sites have all been issued closure by the TNRCC.

- Ten PST sites are registered within the potential ROW. Within these sites, there are twenty-nine UST's and six ASTs.

- Three potential sites that would require further investigation as show in Table V-18 (Map id H30, H31 and H32) represent commercial enterprises that potentially generate hazardous wastes and are not currently carried in any regulatory database. These sites are shown on Exhibits V-1-A and are located along Vickery Boulevard.

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TABLE V-18

HAZARDOUS WASTE SITES

ALTERNATIVE A

SITE	DESCRIPTION	LUST/VCP NUMBER	ADDRESS	MAP ID
FOREST PARK AND VICKERY BLVD.	VCP	58	FOREST PARK AND VICKERY BLVD.	H1
2400 WEST FREEWAY AND NORTH FOREST PARK	VCP	273	2400 WEST FREEWAY AND N. FOREST PARK	H2
BAILEY LINCOLN MERCURY	RCRA LQG / PST / LPST	TXD064211659 / 15969 / 107806	2300 WEST FREEWAY	H3
CLEVELAND TECHNICAL CENTER	RCRA SQG	TXD987983608	KIMZEY ST. AND VICKERY BLVD.	H4
UNITED REFRIGERATION, INC.	RCRA	TXD988085973	3528 CONCRETE ST.	H5
COOKSEY LUTHER PRINTING CO.	RCRA SQG	TXD008021354	1920 WENNECA	H6
CHEVRON 106179	LPST	109578	809 FOREST PARK	H12
HOWELL INSTRUMENTS INC.	LPST / PST	109164 / 36155	3479 W. VICKERY BLVD.	H13
UNION PACIFIC RR RADIO REPAIR SHOP	LPST	105973	3250 KIMZEY ST.	H14
CAMERON WHOLESALE	LPST / PST	102726 / 410	3701 RUTLEDGE ST.	H15
VACANT LOT	LPST	097880	2500 W VICKERY BLVD.	H16
RICHARD CARR CONSTRUCTION CO., INC.	PST	3113	3501 CONCRETE ST.	H20
ALL SAINTS HOSPITAL CITYVIEW	PST	71890	7100 OAKMONT BLVD.	H21
WILLIAMSON DICKIE MFG. CO.	PST	1898	1909 W. VICKERY BLVD.	H22
UNION PACIFIC CENTENNIAL YARD	PST	24781, 65239	KIMZEY ST. AND VICKERY BLVD.	H23
HOWARD F. KANE PLUMBING CO., INC.	PST	72066	4025 W. VICKERY BLVD.	H24
CHICKASAW LUMBER CO.	PST	27990	2705 W. VICKERY BLVD.	H25
CAIN'S BUILDERS SUPPLY CO., INC.	PST	18328	1933 W. VICKERY BLVD.	H26
GULF SERVICE STATION 60106179	PST	5672	809 FOREST PARK	H27
C & J PAINT AND BODY	POTENTIAL		4317 W. VICKERY BLVD.	H30
GORECKI AUTO SERVICE	POTENTIAL		4337 W. VICKERY BLVD.	H31
QUALITY AUTOMOTIVE SERVICE CENTER	POTENTIAL		2200 W. VICKERY BLVD.	H32

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Alternative B

- One VCP site is located within the potential ROW for Alternative B (see Table V-19). This site is also within the potential ROW for Alternative A, and is located at Forest Park and Vickery Boulevard. The site was previously designated as a metals processing facility, and was found to have elevated levels of metals in the soil. The VCP applicant is the FDIC and the case remains open at this time.

- Four RCRA sites within the potential ROW store and/or generate hazardous materials/waste as either a small quantity or large quantity generator.

- Seven LPST sites are located within the potential ROW. Records show that the leaking underground storage tanks at six of the facilities have been removed from the ground and the sites have been issued closure by the TNRCC. As of December 19, 2001, the remaining LPST facility is in the monitoring and risk assessment phase.
  It is:
  1. City of Fort Worth Water Service Center, 2201 W. Doggett Street

- Eleven (11) PST sites are registered within the potential ROW. Within these sites, there are thirty-six UST's and six AST's.

- Three potential sites that would require further investigation as show in Table V-19 (Map id H30, H31 and H32) represent commercial enterprises that potentially generate hazardous wastes and are not currently carried in any regulatory database. These sites are shown on Exhibits V-1-B and are located along Vickery Boulevard.

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TABLE V-19

HAZARDOUS WASTE SITES

ALTERNATIVE B

SITE	DESCRIPTION	DESTATE NUMBER	ADDRESS	MAP ID
FOREST PARK AND VICKERY BLVD.	VCP	58	FOREST PARK AND VICKERY BLVD.	H1
BAILEY LINCOLN MERCURY	RCRA LQG / PST / LPST	TXD064211659 / 15969 /107806	2300 WEST FREEWAY	H3
CLEVELAND TECHNICAL CENTER	RCRA SQG	TXD987983608	KIMZEY ST. AND VICKERY BLVD.	H4
UNITED REFRIGERATION, INC.	RCRA	TXD988085973	3528 CONCRETE ST.	H5
COOKSEY LUTHER PRINTING CO.	RCRA SQG	TXD008021354	1920 WENNECA	H6
CHEVRON 106179	LPST	109578	809 FOREST PARK	H12
HOWELL INSTRUMENTS INC.	LPST / PST	109164 / 36155	3479 W. VICKERY BLVD.	H13
UNION PACIFIC RR RADIO REPAIR SHOP	LPST	105973	3250 KIMZEY ST.	H14
CAMERON WHOLESALE	LPST / PST	102726 / 410	3701 RUTLEDGE ST.	H15
VACANT LOT	LPST	097880	2500 W VICKERY BLVD.	H16
CITY OF FORT WORTH WATER SERVICE CENTER	LPST / PST	104539, 099503 / 7524	2201 W DOGGETT ST.	H17
RICHARD CARR CONSTRUCTION CO., INC.	PST	3113	3501 CONCRETE ST.	H20
ALL SAINTS HOSPITAL CITYVIEW	PST	71890	7100 OAKMONT BLVD.	H21
WILLIAMSON DICKIE MFG. CO.	PST	1898	1909 W. VICKERY BLVD.	H22
UNION PACIFIC CENTENNIAL YARD	PST	24781, 65239	KIMZEY ST. AND VICKERY BLVD.	H23
HOWARD F. KANE PLUMBING CO., INC.	PST	72066	4025 W. VICKERY BLVD.	H24
CHICKASAW LUMBER CO.	PST	27990	2705 W. VICKERY BLVD.	H25
CAIN'S BUILDERS SUPPLY CO., INC.	PST	18328	1933 W. VICKERY BLVD.	H26
GULF SERVICE STATION 60106179	PST	5672	809 FOREST PARK	H27
C & J PAINT AND BODY	POTENTIAL		4317 W. VICKERY BLVD.	H30
GORECKI AUTO SERVICE	POTENTIAL		4337 W. VICKERY BLVD.	H31
QUALITY AUTOMOTIVE SERVICE CENTER	POTENTIAL		2200 W. VICKERY BLVD.	H32

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Alternative C

- One VCP site is located within the potential ROW for Alternative C (see Table V-20). This site is located at is located at Forest Park and Vickery Boulevard. The site was previously designated as a metals processing facility, and was found to have elevated levels of metals in the soil. As of December 2001, the VCP remains open at this time.

- Four RCRA sites within the potential ROW store and/or generate hazardous materials/waste as either a small quantity or large quantity generator.

- Six LPST sites are located within the potential ROW. Records show that the leaking underground storage tanks at these facilities have been removed from the ground and the sites have all been issued closure by the TNRCC.

- Ten (10) PST sites are registered within the potential ROW. Within these sites, there are twenty-nine UST's and six AST's.

- Three potential sites that would require further investigation as show in Table V-20 (Map id H30, H31 and H32) represent commercial enterprises that potentially generate hazardous wastes and are not currently carried in any regulatory database. These sites are shown on Exhibits V-1-C and are located along Vickery Boulevard.

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TABLE V-20

HAZARDOUS WASTE SITES

ALTERNATIVE C

SITE	DESCRIPTION	PHASE/SP NUMBER	ADDRESS	MAP ID
FOREST PARK AND VICKERY BLVD.	VCP	58	FOREST PARK AND VICKERY BLVD.	H1
BAILEY LINCOLN MERCURY	RCRA LQG / PST / LPST	TXD064211659 / 15969 / 107806	2300 WEST FREEWAY	H3
CLEVELAND TECHNICAL CENTER	RCRA SQG	TXD987983608	KIMZEY ST. AND VICKERY BLVD.	H4
UNITED REFRIGERATION, INC.	RCRA	TXD988085973	3528 CONCRETE ST.	H5
COOKSEY LUTHER PRINTING CO.	RCRA SQG	TXD008021354	1920 WENNECA	H6
CHEVRON 106179	LPST	109578	809 FOREST PARK	H12
HOWELL INSTRUMENTS INC.	LPST / PST	109164 / 36155	3479 W. VICKERY BLVD.	H13
UNION PACIFIC RR RADIO REPAIR SHOP	LPST	105973	3250 KIMZEY ST.	H14
CAMERON WHOLESALE	LPST / PST	102726 / 410	3701 RUTLEDGE ST.	H15
VACANT LOT	LPST	097880	2500 W VICKERY BLVD.	H16
RICHARD CARR CONSTRUCTION CO., INC.	PST	3113	3501 CONCRETE ST.	H20
ALL SAINTS HOSPITAL CITYVIEW	PST	71890	7100 OAKMONT BLVD.	H21
WILLIAMSON DICKIE MFG. CO.	PST	1898	1909 W. VICKERY BLVD.	H22
UNION PACIFIC CENTENNIAL YARD	PST	24781, 65239	KIMZEY ST. AND VICKERY BLVD.	H23
HOWARD F. KANE PLUMBING CO., INC.	PST	72066	4025 W. VICKERY BLVD.	H24
CHICKASAW LUMBER CO.	PST	27990	2705 W. VICKERY BLVD.	H25
CAIN'S BUILDERS SUPPLY CO., INC.	PST	18328	1933 W. VICKERY BLVD.	H26
GULF SERVICE STATION 60106179	PST	5672	809 FOREST PARK	H27
C & J PAINT AND BODY	POTENTIAL		4317 W. VICKERY BLVD.	H30
GORECKI AUTO SERVICE	POTENTIAL		4337 W. VICKERY BLVD.	H31
QUALITY AUTOMOTIVE SERVICE CENTER	POTENTIAL		2200 W. VICKERY BLVD.	H32

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Alternative D

- Two VCP sites are located within the potential ROW (see Table V-21). These sites are located at Forest Park and Vickery Boulevard and at 2400 West Freeway and North Forest Park. The first site was previously designated as a metals processing facility, and was found to have elevated levels of metals in the soil. As of December, 2001, the VCP case remains open. The second site was a municipal solid waste landfill facility. Soil and groundwater contamination from metals and petroleum hydrocarbons has been identified at this site. According to the TNRCC official in charge of this VCP, as of December, 2001, the site is currently under investigation and litigation. High levels of methane have been detected, which represents a hazard if construction activities should take place in the area.

- Eight RCRA sites within the potential ROW store and/or generate hazardous materials/waste as either a small quantity or large quantity generator.
- Ten LPST sites are located within the potential ROW. Records show that the leaking underground storage tanks at eight of the facilities have been removed from the ground and the sites have been issued closure by the TNRCC. As of December 19, 2001, the two remaining LPST facilities are in the monitoring and risk assessment phases. They are:
  1. North Holly Water Treatment Plant, 1120 Fournier Street
  2. City of Fort Worth Water Service Center, 2201 W. Doggett Street
- Eighteen (18) PST sites are registered within the potential ROW. Within these sites, there are forty-seven UST's and six AST's.
- Three potential sites that would require further investigation as show in Table V-21 (Map id H30, H31 and H32) represent commercial enterprises that potentially generate hazardous wastes and are not currently carried in any regulatory database. These sites are shown on Exhibits V-1-D and are located along Vickery Boulevard.

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TABLE V-21

HAZARDOUS WASTE SITES

ALTERNATIVE D

[illegible]	DESCRIPTION	[illegible] NUMBER	[illegible]	[illegible]
FOREST PARK AND VICKERY BLVD.	VCP	58	FOREST PARK AND VICKERY BLVD.	H1
2400 WEST FREEWAY AND NORTH FOREST PARK	VCP	273	2400 WEST FREEWAY AND N. FOREST PARK	H2
BAILEY LINCOLN MERCURY	RCRA LQG / PST LPST	TXD064211659 / 15969 / 107806	2300 WEST FREEWAY	H3
CLEVELAND TECHNICAL CENTER	RCRA SQG	TXD987983608	KIMZEY ST. AND VICKERY BLVD.	H4
UNITED REFRIGERATION, INC.	RCRA	TXD988085973	3528 CONCRETE ST.	H5
COOKSEY LUTHER PRINTING CO.	RCRA SQG	TXD008021354	1920 WENNECA	H6
LARS INDUSTRIES, INC.	RCRA LQG / RCRA SQG	TXD093193167 / TXR000013722	2012 15TH AVE.	H7
TECH ENGINE REBUILDERS	RCRA SQG	TX0000963132	1804 15TH AVE.	H8
GORDON PERMANN AUTO REPAIR CENTER	RCRA SQG / PST	TXD982291478 / 49203	3959 W. VICKERY BLVD.	H9
TIMS GERMAN AUTO	RCRA SQG	TXD988019667	3921 W. VICKERY BLVD.	H10
NORTH HOLLY WATER TREATMENT PLANT	LPST / PST	108239 / 57502	1120 FOURNIER ST.	H11
CHEVRON 106179	LPST	109578	809 FOREST PARK	H12
HOWELL INSTRUMENTS INC.	LPST / PST	109164 / 36155	3479 W. VICKERY BLVD.	H13
UNION PACIFIC RR RADIO REPAIR SHOP	LPST	105973	3250 KIMZEY ST.	H14
CAMERON WHOLESALE	LPST / PST	102726 / 410	3701 RUTLEDGE ST.	H15
VACANT LOT	LPST	097880	2500 W VICKERY BLVD.	H16
CITY OF FORT WORTH WATER SERVICE CENTER	LPST / PST	104539, 099503 / 7524	2201 W DOGGETT ST.	H17
B&B SERVICE STATION (CLOSED)	LPST / PST	101625, 38775	3709 W. VICKERY BLVD.	H18
FORMER SERVICE STATION	LPST / PST	101932, 31156	3950 W. VICKERY BLVD.	H19
RICHARD CARR CONSTRUCTION CO., INC.	PST	3113	3501 CONCRETE ST.	H20
ALL SAINTS HOSPITAL CITYVIEW	PST	71890	7100 OAKMONT BLVD.	H21
WILLIAMSON DICKIE MFG. CO.	PST	1898	1909 W. VICKERY BLVD.	H22
UNION PACIFIC CENTENNIAL YARD	PST	24781, 65239	KIMZEY ST. AND VICKERY BLVD.	H23
HOWARD F. KANE PLUMBING CO., INC.	PST	72066	4025 W. VICKERY BLVD.	H24
CHICKASAW LUMBER CO.	PST	27990	2705 W. VICKERY BLVD.	H25
CAIN'S BUILDERS SUPPLY CO., INC.	PST	18328	1933 W. VICKERY BLVD.	H26
GULF SERVICE STATION 60106179	PST	5672	809 FOREST PARK	H27
ELECTRONICS DOWNTOWN DIVISION	PST	46597	1515 11TH AVE.	H28
BAILEY PROPERTIES	PST	56885	1900 15TH ST.	H29
C & J PAINT AND BODY	POTENTIAL		4317 W. VICKERY BLVD.	H30
GORECKI AUTO SERVICE	POTENTIAL		4337 W. VICKERY BLVD.	H31
QUALITY AUTOMOTIVE SERVICE CENTER	POTENTIAL		2200 W. VICKERY BLVD.	H32

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It is not anticipated that any of the sites described would impact the development of the proposed facility. There would be no change to the environment along the project corridor related to hazardous waste conditions or established sites. Precautions and remediation measures would be necessary during the construction phase to ensure that all means are utilized to identify and remove any hazardous waste encountered while work is proceeding.

No-build Alternative

The No-build alternative would have no affect on the quantity of hazardous materials found in the PSC.

Energy Impacts

Alternatives A, B, C and D

A one-time energy expenditure (i.e., fossil fuels) would be required for construction of the Build alternatives. These resources are generally not recoverable; however, they are not in short supply and their use would not have an adverse effect upon continued availability of these energy resources. The commitment of these resources is based on the concept that commuters and other highway users would benefit from the highway improvement. The initial energy expenditure would be offset by improved access, safety, travel time and cost, and eventual energy savings provided by the proposed facility. Energy consumed by construction of the project (indirect energy) is averaged over the design life of the facility. This would result in a low annual usage of energy. Energy in the form of fossil fuels required by motorized vehicles (direct energy) would decrease with smooth uninterrupted traffic flow, reduced travel distances and decrease traffic congestion. Direct energy demands would be larger than indirect energy demands on this project considering the traffic volumes.

No-build Alternative

The No-build alternative would not require any energy expenditure for the construction of the proposed facility; however, the fuel energy consumed by traffic congestion and delays would continue to increase.

Construction Impacts

Construction of the proposed SH 121T project would have specific temporary affects related to air quality, noise, water and traffic. Proper planning and implementation of specific mitigation procedures would reduce or eliminate the impacts realized during construction of the facility. The following are some of the impacts likely to be encountered during construction:

Air Quality

Temporary air pollution from dust generated during the construction phase might create a nuisance to nearby residences, schools, churches and businesses along the PSC. Dust generated from construction activities would be controlled by sprinkling water on areas where intensive traffic occurs on non-paved areas, such as haul roads, equipment parking and cut and fill areas. Disposal of brush, vegetative spoil resulting from clearing operations and the control of dust during the construction phase would be in accordance with the TNRCC's Regulation 1, Rule 101 and Rule 104, respectively. Inspectors would be required by Federal contract to implement the applicable standards relating to dust suppression during the entire construction phase of the project. The inspectors would be responsible for putting into effect those pollution controls necessary to ensure compliance with the provisions of the contract.

Noise

It is not practical to predict noise levels at a particular location during the construction of the proposed facility. Heavy machinery, the major source of noise during construction, is

constantly moving in unpredictable patterns. Noise levels during daylight hours would be greater than usual within areas immediately adjacent to the proposed ROW from the heavy machinery and trucks. The duration of the daily construction would normally occur during daylight hours when occasional loud noises are more commonplace. There is a possibility that certain construction operations could produce temporary noise levels high enough to interfere with nearby noise sensitive activities. However, because of the relative short-term exposure periods imposed on any one receiver, extended disruption of normal activities is not considered likely. Provisions would be provided in the plans and specifications to require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work hour controls, equipment muffler systems, etc.

Water

Because this project would disturb more than 5 ac of land, an NPDES General Permit for Construction Activity would be required. This would be accomplished by filing a NOI with EPA stating that TxDOT would have a SW3P in place during construction of the project. Soil erosion and sediment-laden runoff from construction areas would present the most likely temporary impacts to streams and the river within the PSC. Impacts would be minimized through the implementation of erosion and sediment control practices (i.e., silt fence, rock berm, and drainage swales) from the Department's manual *Standard Specifications for the Construction of Highways, Streets and Bridges*. Other erosion and sedimentation control measures would likely include seeding and mulching disturbed areas, fiber mats, netting, dikes, dams, rock construction entrances, minimizing exposure of unprotected soil, temporary sedimentation ponds and proper construction of river and stream crossings. During construction of the proposed roadway, the surface area of erodible soils that would be exposed at any one time would be limited. Where appropriate, these temporary control structures would be in place prior to the initiation of construction and would be maintained throughout construction. Clearing of the vegetation would be limited and/or phased in order to maintain a water quality buffer. Upon completion of earthwork operations, disturbed areas would be restored and reseeded according to the Department's specifications for "Seeding for

Erosion Control." The contractor would take preventive measures to minimize and control the spill of fuels, lubricants, and hazardous materials during construction. Proper areas for spills disposals and materials storage would be designated and identified and would be protected from run-on and run-off. No long-term water quality impacts are expected as a result of the project.

Traffic Congestion, Detours and Safety

Maintenance and protection of traffic would be a primary concern of the contractor during construction. Access would be maintained at all times for emergency equipment. Also, construction operations would be coordinated to minimize delays to the public and to ensure that abutting properties would have access during all phases of construction. Traffic control measures would be in accordance with FHWA's *Manual of Uniform Traffic Control Devices and Traffic Control for Street and Highway Construction and Maintenance Operations*. Traffic control devices would likely include flagmen, signs, barricades, reflection markers, channeling devices and hazard warning lights.

Railroad Impacts

Alternatives A, B, C and D

The Build alternatives of the project would have impacts to two railroads at areas of specific alignments. The impacts would require main lane crossovers at the following locations:

Union Pacific Railroad: Union Pacific operates the Centennial Railroad Yard located at the intersection of proposed SH 121T and Hulen Street. The railroad yard would be crossed over by the main lanes of SH 121T. Relocation of existing tracks might be required.

Fort Worth and Western Rail (old South Orient Railroad): Fort Worth and Western Rail operates a north-south track that would require a crossover east of Old Granbury Road and south of Dirks Road. It is not anticipated that track realignment would be necessary.

No-build Alternative

The No-build alternative would not impact the Union Pacific Railroad Yard or the South Orient track line.

Relationship Between Local Short Term Uses of Man's Environment and the Maintenance and Enhancement of Long-term Productivity

The Southwest Parkway, SH 121T, project is a vital component of a much larger transportation system serving the Dallas-Fort Worth area. If constructed, it would offer a faster, safer and more efficient transportation system serving the southwest portion of Fort Worth and Tarrant County, and the northern part of Johnson County. It would become an essential part of the overall transportation network in Tarrant County.

Highway construction is classified as a long-term productive facility. The goal of the SH 121T project is to create a facility that fulfills the need for transportation service and is compatible with today's land use and enhances future development in the area. The long-term mission of the project would be to provide the most beneficial means of serving those wishing to use the system with the least amount of funds disbursed for continued maintenance and enhancement.

While there is no fixed timetable to distinguish the short-term effects from the long-term effects, a local short-term use of the environment is generally defined as a direct consequence of a project in its immediate vicinity. Short term effects, which in most cases are not considered to be permanent effects, include localized disruptions, higher noise levels, increased air pollution and the rerouting of traffic during the construction period, though these impacts might be relatively inconsequential in the long term. Long-term effects,

however, are related to direct and/or indirect results of the facility, which in most cases are considered to be permanent effects. In general, the short-term effects, which include the majority of the costs and inconveniences, are borne during or shortly after construction, while the long-term benefits are shared by both present and future generations. The economic costs of designing and building the facility would be supported in the near future. These would be the probable adverse impacts that cannot be avoided.

The project based on State, regional, and local comprehensive planning has taken into account future population growth, existing and future land usage as existing and future transportation needs. The proposed Build alternatives, whether freeway or toll facility, would have similar local short-term impacts and long term benefits. Based on comprehensive planning efforts for the project, implementation of the project, including the local short-term impacts and use of resources, is consistent with the maintenance and enhancement of the long-term productivity for the local area and the State.

Irreversible and Irretrievable Commitments of Resources Which Would Be Involved in the Proposed Action

Implementation of the proposed action involves a commitment of a range of natural, physical, human and fiscal resources. Land used for the construction of the proposed facility is considered an irreversible commitment during the time period that the land is used for transportation facility. Only in the most extreme case would the land be converted to another use. At present, there is no reason to believe such a conversion would ever be necessary, the development that such a facility would generate, and which would be dependent on the facility, would make abandonment of the facility impractical.

Considerable amounts of fossil fuels, labor and construction materials such as cement, aggregate, asphalt, sand, fill materials, lime and steel would be expended. Additionally, large amounts of labor and natural resources are used in the fabrication and preparation of construction materials. These materials are generally not retrievable, though they are not in

short supply, and their use would not have an adverse impact upon continued availability of these resources. Any construction would also require a substantial one-time expenditure of both State and Federal funds that are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, State, and region would benefit by the improved quality of the overall transportation system. These benefits would consist of improved accessibility and safety; savings in time spent commuting, and greater availability of quality services, that are anticipated to outweigh the commitment of these resources.

There would be irretrievable and irreversible commitments of land, material and capital used in the construction of the SH 121T Southwest Parkway project. Labor and energy used in the construction of the facility would be indirectly recovered because of increased vehicle efficiency and ease of traffic movement resulting from the project.

Secondary and Cumulative Project Impacts

The secondary and cumulative impacts of the proposed Build alternatives, i.e., construction of a multilane, controlled access facility on new location, can only be reasonably assessed in very general terms. However, in light of an overall goal to protect and enhance the human environment, participating agencies must make a concerted effort to address not only the direct and observable effects of a proposed action but also those that are indeterminate and not easily recognized.

By definition, secondary effects are those that are "caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable" (40 CFR 1508.8). Cumulative effects, which are even less defined, are "impacts which result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions" (40 CFR 1508.7).

The secondary and cumulative economic impacts of the project are related to issues such as: changes in land use and value (i.e., tax base); accessibility to and from business, residential, commercial and recreational points of interest; relocation of existing homes and businesses; and impacts to existing businesses due to changes in traffic patterns. Due to SH 121T's long history of planning and development; many of these issues have been addressed through the City's zoning decisions and in some instances, voluntary preservation of ROW by property owners. As discussed in part *Land Use* (Chapter V, Environmental Consequences), the City of Fort Worth has previously planned for a Build alternative and has made zoning decisions to match project plans, see Exhibits IV-1 through IV-4. Acquisition of ROW for construction purposes represents a loss of tax revenue for local authorities, although the relative impact on a citywide basis can be considered minor. Also, the losses due to ROW purchase would likely be offset as adjacent land develops and land values begin to increase.

It is expected that implementation of the proposed Build alternative would have a positive net economic impact for both Tarrant and Johnson Counties. This would mainly be due to improved accessibility that would in turn lead to increased development and urbanization, resulting in increased employment opportunities and an overall stimulation of the area's economy.

Similarly, the secondary and cumulative physical and environmental impacts can be reasonably assessed. Loss of jurisdictional waters of the United States, floodplain areas and wildlife habitat as well as impacts to air quality, water quality, and areas of historic significance have all been addressed in this document.

As stated previously in this document, planning for the proposed facility has occurred at a regional level through NCTCOG's *Mobility 2025 Plan Update* development process. In addition to traditional transportation goals, i.e., enhanced mobility, balanced multimodal systems, improved air quality, etc., equal consideration was given early in the process to other issues such as quality-of-life and financial goals. These goals were intended to represent the

region's commitment to a comprehensive, cooperative and continuous transportation process. While directing planning efforts to consider transportation's long term impact on the economy and the environment, the stated goals were also intended to provide transportation services and infrastructure to those traditionally under-served. In all, 21 goals were adopted to guide NCTCOG in the identification of specific transportation projects and programs. SH 121T, as a toll road facility, was one of the projects identified through this process.

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VI. PUBLIC INVOLVEMENT

Summary and Analysis of Public Meetings

Throughout the development of this project, there has been extensive public involvement with citizens, property owners and affected local governments regarding the proposed facility. Several opportunities for public comment have been afforded through public meetings, citizen advisory groups, a SH 121T Task Force and two formal public hearings.

On May 2, 1973, the first public hearing for the proposed SH 121 extension was held cooperatively by the City of Fort Worth, Tarrant County, NCTCOG and TxDOT. Approximately 450 people attended the hearing, a large majority of which favored the recommended "Route A" (see Exhibit I-1) as the preferred alignment. For reasons that were discussed in Chapter I of this document, little progress was reported between the years 1974 and 1980.

In July 1980, the NCTCOG RTC authorized a study of the Southwest Fort Worth sub-area. One year later, a CAC and a technical committee were established to carry forth the objectives of the study. The CAC was composed of elected officials and citizen representatives, and the technical committee included staff members from NCTCOG and five sub-area cities.

Following years of project development and analysis of alternatives, a public meeting was held at the First Baptist Church of Crowley on November 12, 1987, to discuss the SH 121 alignment from IH 20 to SH 174. Approximately 107 people attended the meeting at which four alternative alignments were presented for discussion and public input. The project received strong support in general, with a majority favoring the proposed "A1" alignment (Exhibit VI-1) that would extend SH 121 all the way south to US 67.

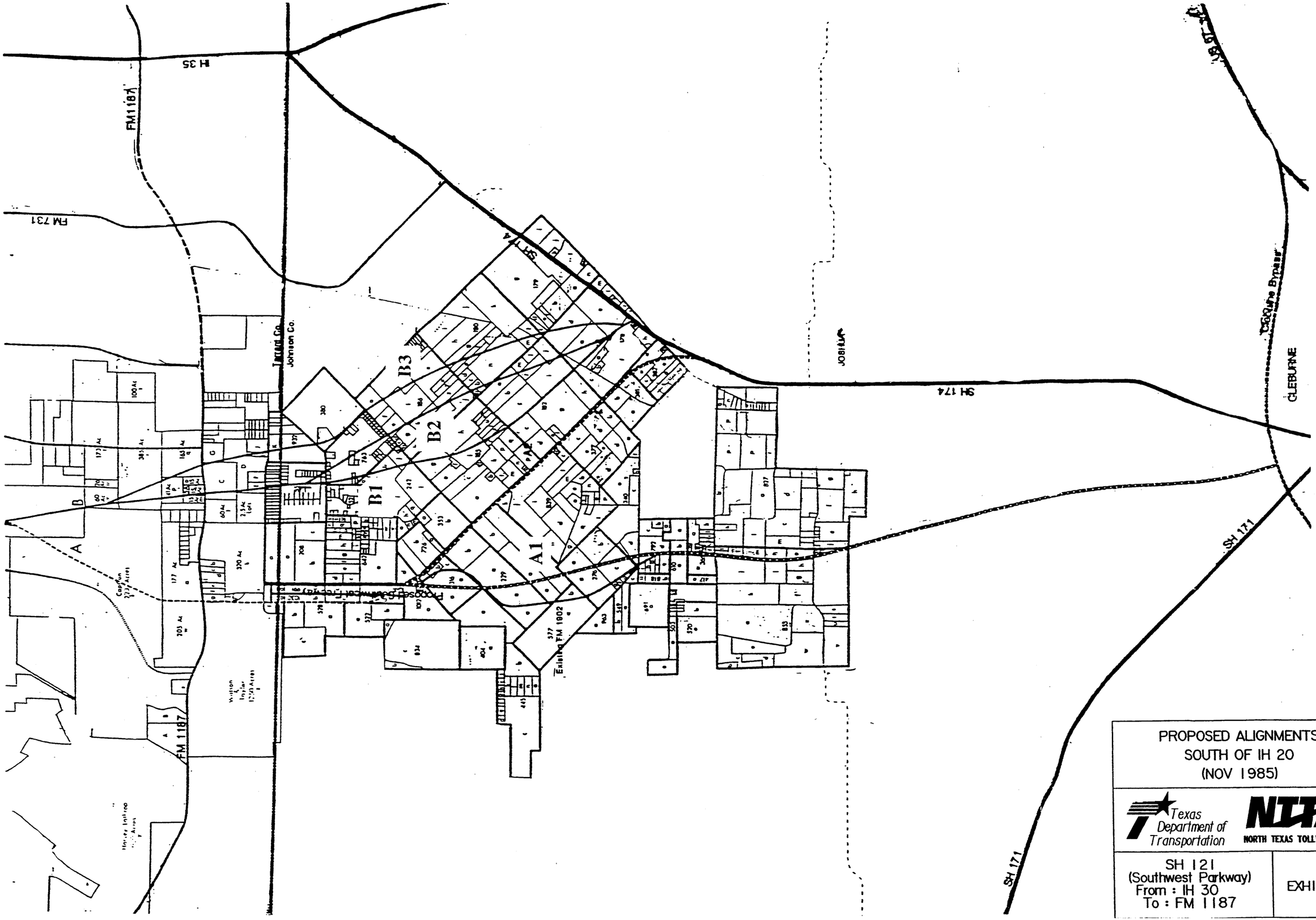
On April 12, 1988, public meeting notices for SH 121 from IH 35W to FM 1187 were sent out to appropriate State representatives and Senators, County Commissioners, the County

Judge, NCTCOG and elected officials from the City of Fort Worth. Legal notices were published in the Fort Worth Star Telegram on April 15 and May 6, 1988. Display advertisements were also placed in the newspaper.

The public meeting was subsequently held on May 17, 1988. As with the south section public meeting, four alternative alignments were presented for the northern section. The project limits were from IH 35W to IH 20. There were 120 people in attendance at this meeting, with equal support/opposition to the "Green" and "Red" alignments (see Exhibit I-3). In the months following the meeting, several letters were received by TxDOT reiterating the public's support for the proposed "Green" alignment and strong opposition to the "Red" alignment. Some individuals expressed disappointment over a perceived lack of notification concerning the meeting and requested that another opportunity for public comment be held.

The DEIS for the south section was approved for public involvement by the FHWA on October 12, 1989. A public hearing was scheduled and held on January 21, 1993, at the First Baptist Church of Crowley. In light of comments received by TxDOT on the north section regarding public notification of upcoming hearings, classified advertisements were placed twice each in the *Fort Worth Star Telegram*, the *Cleburne Times Review* and the *Burleson Star*. Adjacent property owners were individually notified by certified mail. A large majority of those who attended the hearing were in favor of the proposed alignment, which deviated only slightly from the originally proposed "Red" alignment (see Exhibit I-2).

Even with political and community consensus on at least one segment of the SH 121 extension, i.e., the south section, further project development was stalled once again due to limitations in funding sources. The SH 121 Task Force was formed in 1993 to pursue a feasible means of getting the project built. Over 30 community meetings and



PROPOSED ALIGNMENTS
SOUTH OF IH 20
(NOV 1985)

Texas Department of Transportation

NTTA
NORTH TEXAS TOLLWAY AUTHORITY

SH 121
(Southwest Parkway)
From : IH 30
To : FM 1187

EXHIBIT VI-1

November 1985

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briefings to elected officials took place between June and October of 1994 to review alternative designs and proposals for the northern section of SH 121. This effort resulted in the decision to consider development of the SH 121 extension as a toll parkway.

A public meeting was held on January 25, 1995, at the City of Cleburne Civic Center to inform the public about progress on the 121T project. Over 50 people attended the meeting. On April 12, 1995, a delegation of the project's local sponsors and members of the SH 121T Task Force appeared before the TTA (TTA, currently the North Texas Tollway Authority (NTTA)) Board of Directors in Dallas. At that meeting, the TTA Board of Directors passed Resolution 1531, that authorized staff to work with the SH 121 team in preparing a scope for the financial feasibility studies.

At a June 13, 1995, Board of Directors meeting in Fort Worth, the TTA adopted several resolutions with regard to the 121T project. Among others, an authorization to execute a joint venture contract with the local sponsor consultant to perform preliminary engineering and traffic revenue studies was signed.

On June 4, 1998, a public meeting was held jointly by the NTTA and TxDOT, at the Overton Park United Methodist Church in Fort Worth. 30-day and 15-day notices were published in the *Fort Worth Star Telegram*, informing the public of the upcoming meeting. Approximately 150 people attended the meeting, at which the proposed facility was shown and presented as a tollroad project. Exhibits of the proposed alignment were displayed, and technical and environmental presentations were given. Following the presentations, the floor was opened for a Question and Answer session. A copy of the meeting handouts, individual presentations as well as a summary of recorded questions and comments from the meeting are available for review at the TxDOT Fort Worth District Office, 2501 SW Loop, Fort Worth, Texas, 76133. A majority of the comments received, both at the meeting and in writing following the meeting, were in support of the project. Those opposed to the project cited issues such as

noise pollution, impacts from lighting and lack of adequate attention to rail/transit options as primary concerns.

On December 8, 1998, the Fort Worth City Council voted 7-2 in favor of the proposed tollroad project and passed a resolution authorizing an interlocal agreement between the City, TxDOT and the NTTA concerning the development of the Southwest Parkway (see Appendix A). Approximately 300 people were present at the City Council chambers, taking this last opportunity to influence the Council's vote. The City's endorsement of the project reaffirmed their commitment to:

- Acquire, or assist in the acquisition, of all required ROW (except at the I-30 and I-20/SH 183 interchanges),
- Provide support in the preparation of Environmental Impact Statements
- Work collaboratively to address possible funding shortfalls
- Assist the NTTA in obtaining necessary approvals, permits and further agreements
- Relocate and/or extend City-owned utilities as necessary; to permit connection to City storm water drainage systems, etc.

A resolution to appoint a CAC to the City Council was also passed on this date. The CAC would serve to ensure that "adequate citizen involvement continues prior to the final approval of the schematic design by the City" (Appendix A). The first of a series of meetings was held on March 17, 1999.

On December 11, 1998, a joint meeting of the Intermodal Transportation Steering Committee and the Transportation Committee of Fort Worth's transportation management association, Downtown Fort Worth, Inc., was held at the Fort Worth Club Tower. Representatives from the NTTA and NCTCOG presented a briefing on the SH 121T project, and answered questions and concerns raised by the committee.

The Fort Worth Chamber of Commerce also presented an opportunity for citizen's concerns to be heard regarding the project by hosting two meetings on February 24, 1999, at the Southwest Regional Library Auditorium. Invitations to the meeting were sent to all owners and business managers along Vickery Boulevard. Following presentations by the NTTA and the technical consultant, representatives from TxDOT were on hand to respond to ROW and relocation related issues. Several of the business owners and operators in attendance that would be displaced by the project and had concerns about the timing of the project and the extent of TxDOT's relocation assistance. A mailing list was compiled after the meeting for all those interested in receiving TxDOT's brochure on procedures for ROW acquisition and relocation assistance.

The first meeting of the CAC, held on March 17, 1999, took place at the Will Rogers Memorial Center in Fort Worth. An overview of the history of the SH 121T project was presented. Issues and concerns to date were discussed by committee members. The project schedule was also discussed and a draft mission statement for the Advisory Committee was presented. The principal focus of public comments dealt with questions regarding the configuration of the facility (the northern terminus, the number of lanes, access road locations, and toll plazas). Questions were also raised regarding the anticipated benefit of the proposed facility. No objections to the project were voiced.

A total of seven committee meetings were held, culminating in the presentation of recommendations to the City Council in October 1999. In addition, the City Council was brought up to date on the project in a briefing presented by City staff on February 1, 2000.

In April of 2000, the City of Fort Worth created a PRT to review the geometric design as proposed by the TxDOT/NTTA design team. By the end of April 2000 the PRT presented their observations and recommendations to the City of Fort Worth resulting in the City of Fort Worth's decision to pursue further detailed study of the PRT's recommendations. In May of 2000 the City of Fort Worth formed a PDT responsible for the oversight of the

detailed study and for the purposes of retaining an outside consultant team to perform the study. This study would re-examine the SH 121T/IH 30 interchange from the City of Fort Worth's perspective and develop additional alternatives in cooperation with the public.

Over the course of the next six months the City's consultant team evaluated the previous alternatives, developed additional alternatives and presented their findings to the PDT and the public. Workshops and public meetings were held once a month between August and October 2000 to solicit comment and direction from the PDT and public. Information provided to the public at these meetings included basic highway geometric design criteria, alternative plan options, potential aesthetic mitigation measures, traffic projections occurring within the corridor with and without the project and a general explanation of the NEPA process. The meetings were structured to encourage comment through the use of break out groups staffed with facilitators to lead the discussions.

In December 2000 the PDT made its recommendations to the City of Fort Worth City Council. These recommendations included the "A1R1" SH 121T/IH 30 interchange alternative, to be referred to henceforth as Alternative A, modifications to the typical section of the facility, as well as alternative interchange plans at several of the various grade separations occurring along the corridor. The City Council approved the recommendations and presented their findings to the TxDOT/NTTA design team at the end of December 2000.

Upon review of the PDT recommendations, the TxDOT/NTTA design team determined that certain integral plan elements of Alternative A violated safety and design criteria. In an effort to address the PDT's recommendations, the TxDOT/NTTA design team developed an additional alternative comprised of the desirable plan elements from the previously developed alternatives. This "Combination Alternative", to be referred to henceforth as Alternative C, was developed during the spring of 2001.

On June 4th and June 7th, 2001, public meetings were jointly conducted by the NTTA and TxDOT to discuss the current alternatives being studied. The location of the June 4 meeting was the Will Rogers Memorial Center-Amon G. Carter Exhibits Hall and that of the June 7 meeting was the Trinity Valley School. Three alternatives were presented to the public and both written and verbal comments were solicited (See Exhibit I-5). The three alternatives presented included Alternative A (the PDT's recommended alternative), Alternative B (the CAC's "Modified" Alternative), and Alternative C (the "Combination" alternative). Overall the project was met with minimal opposition. Public comment focused on the various plan alternatives throughout the project corridor.

The comments received from the previous public meetings were summarized and used to determine the public's preferred plan alternative for the proposed alignments. The input of the public was incorporated into the three alternative plans, and the resulting alternatives were presented in the final set of public meetings. The meetings were jointly conducted by the NTTA and TxDOT on November 27th and December 3rd, 2001. The November 27th meeting was held at the Trinity Valley School and the December 3rd meeting at the Will Rogers Memorial Center-Amon G. Carter Exhibits Hall. Once again, public comments were solicited regarding preferred plan elements for Alternative A, Alternative B, and Alternative C. Overall the project was met with minimal opposition.

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VII. AGENCY COORDINATION AND COMMENTS

Agency Coordination

From the very early stages of the SH 121T extension project, several local, State and Federal agencies have had the opportunity to comment on various aspects of the proposed facility. TxDOT led early project coordination, in cooperation with NCTCOG, the City of Fort Worth and Tarrant County. More recently, with the development of the project as a toll facility, the NTTA has assumed overall responsibility for the project.

Coordination was initiated with the EPA April 13, 1999. Based on the EPA's May 12, 1999 response letter, TxDOT will continue this coordination with the EPA during finalization of the EIS process. Coordination was initiated with the USACE April 13, 1999. Based on the USACE's May 13, 1999 response letter, TxDOT will continue this coordination with USACE during the finalization of the EIS process and during Section 404 of the Clean Water Act (CWA) permitting process. TxDOT initiated coordination with the USFWS on June 5, 2002 pursuant to 50 CFR 402.01. A Biological Assessment (BA) was submitted to USFWS at this time. USFWS responded on June 12, 2002 with the determination that the proposed project is not likely to adversely affect listed species. SHPO concurrence for archeological resources for the project was obtained June 12, 2002. Prior to construction Site 41TR170 will be tested and coordinated. SHPO concurrence for historic structure resources for the project was obtained June 12, 2002. SHPO has requested that TxDOT consider minimizing or avoiding increases in traffic, noise, and light pollution in designated historic areas. TxDOT has committed to SHPO's requests in a September 9, 2002 letter. All coordination letters are located in Appendix E.

Major Investment Study (MIS)

A major transportation investment study was required for all corridors where a significant transportation investment is anticipated to have regional impact, such as the proposed SH 121T. The MIS is intended to foster a cooperative and collaborative decision-making process involving state DOTs, MPOs, transit operators, the FTA and FHWA. By performing

integrated and thorough analyses in the planning stage of project development, potentially redundant steps can be reduced or eliminated in future stages.

Given the level of community and agency involvement exhibited throughout this project's development, the requirements and objectives of the MIS process have been met. As evidenced by the media and newspaper coverage directed toward this project, local interests have continued to be heard in a public forum. Beyond the immediate scope of the project, its inclusion in NCTCOG's Mo*bility 2025 Plan Update* further demonstrates heavy public input and region-wide participation.

Public outreach and involvement activities were critical components of the 18-month development process of *Mobility 2025 Plan Update*. A series of technical workshops were held with local governments and other planning agencies to provide technical review of travel forecasts, the evaluation of alternatives and plan recommendations. Numerous presentations were provided to elected officials including the RTC, the NCTCOG Executive Board, County Commissioners Courts and City Councils throughout the region. Other transportation agencies, including DART, FWTA and TxDOT were regularly briefed at different stages of the plan development. Fifteen public meetings were held throughout the region, where the community was invited to ask questions or provide comments, which were all reviewed and incorporated into the plan as much as possible. Over 3,500 interested citizens and businesses were notified of the hearings. Other outreach activities included the creation of an internet web site for *Mobility 2025 Plan Update,* presentations to civic and transportation advocacy groups, and working closely with the media.

The identification of potential tollroads as a viable means of reducing the gap between transportation needs and available funds was a high priority throughout NCTCOG's *Mobility 2025 Plan Update* planning process. As such, it has been the policy of RTC to move forward as expeditiously as possible towards the implementation of these projects.

At a meeting attended by representatives from the NCTCOG, on August 29, 1997, it was determined that the project would be designated an "Option 3" MIS (concurrent MIS/NEPA followed by a Final EIS) because a complete range of alternatives had been studied through previous environmental impact statements and public involvement activities. The decision to reject a "freeway" facility along the southwest corridor was supported by a majority of the local community, elected officials and affected agencies. Alternatives for SH 121T such as transit, rail, high occupancy vehicle lanes, TSM/TDM improvements, bicycle/pedestrian improvements, parking management, employer trip reduction programs, etc., have been addressed in the regional CMS.

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IX. LIST OF DEIS RECIPIENTS

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- US Army Corps of Engineers
- US Department of the Interior (Fish and Wildlife Service)
- US Environmental Protection Agency

Others

- Tarrant County
- Johnson County
- City of Fort Worth
- City of Cleburne
- City of Crowley
- City of Burleson
- City of Joshua
- NCTCOG
- Fort Worth Independent School District
- Fort Worth Public Library
- Texas Christian University Library
- Governor, State of Texas
- Historic Fort Worth, Inc.
- Historic Preservation Council for Tarrant County, Texas
- Tarrant County Historical Commission
- Texas Department of Agriculture
- Texas Natural Resource Conservation Commission
- Texas Parks and Wildlife Department
- Texas Railroad Commission
- US Department of Agriculture
- US Department of Health and Human Services
- US Department of Housing and Urban Development

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LIST OF ACRONYMS, ABBREVIATIONS AND TERMS

AADT	Annual Average Daily Traffic
ACHP	Advisory Council on Historic Properties
ADT	Average Daily Traffic
AHPA	Archeological and Historic Preservation Act
APE	Area of Potential Effect
APTS	Advanced Public Transportation System
ARPA	Archeological Resource Protection Act
AST	Aboveground Storage Tank
ATIS	Advanced Traveler Information System
ATM	Advanced Transportation Management
ATMS	Advanced Traffic Management System
ATP	Anti-Tampering Programs
BA	Biological Assessment
BMP	Best Management Practices
CAAA	Clean Air Act Amendments
CAC	Citizen's Advisory Committee
CALINE3	California Line Source Model
CBD	Central Business District
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations

CMS	Congestion Management Systems
CMSA	Consolidated Metropolitan Statistical Area
CO	Carbon Monoxide
CWA	Clean Water Act
DART	Dallas Area Rapid Transit
DEIS	Draft Environmental Impact Statement
DFWRTM	Dallas-Fort Worth Regional Travel Model
DOT	United States Department of Transportation
DRAM	Disaggregated Residential Allocation Model
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMPAL	Employment Allocation Model
EPA	United States Environmental Protection Agency
ETC	Estimated Time of Construction Completion
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FINDS	Facility Index System
FM	Farm-to-Market Road
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
FWPCA	Federal Water Pollution Control Act
FWS	United States Department of Interior, Fish and Wildlife Services

FWTA	Fort Worth Transit Authority
HAZMAT	Hazardous Material
HOV	High Occupancy Vehicle
HUD	United States Department of Housing and Urban Development
I/M	Inspection/Maintenance
IH	Interstate Highway
IP	Individual Permit
ISTEA	Intermodal Surface Transportation Efficiency Act
ITS	Intelligent Transportation Systems
LOS	Level of Service
LUST	Leaking Underground Storage Tank
MIS	Major Investment Study
MO	Minute Order
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NCTCOG	North Central Texas Council of Governments
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NOI	Notice of Intent
NO_x	Nitrogen Oxides
NPDES	National Pollution Discharge Elimination System

NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NTTA	North Texas Tollway Authority
NWI	National Wetlands Inventory
NWP	Nationwide Permit
O_3	Ground Level Ozone
PAC	Project Area Corridor
Pb	Lead
PCN	Preconstruction Notification
PDP	Project Development Plan
PDT	Project Development Team
PM	Particulate Matter
ppb	Part Per Billion
ppm	Parts Per Million
PRT	Project Review Team
PSC	Project Study Corridor
PUBHh	Palustrine, Unconsolidated Bottoms, Permanently Flooded, Dike Impoundments
PUBFh	Palustrine, Unconsolidated Bottoms, Semi-permanently Flooded, Dike Impoundments
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Act Information System
ROW	Right-of-Way

RTC	Regional Transportation Council
R2UBHx	Riverine, Unconsolidated Bottom, Permanently Flooded, Excavated
SAL	State Archeological Landmarks
SH	State Highway
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SW3P	Storm Water Pollution Prevention Plan
TAC	Texas Antiquities Code
TARL	Texas Archeological Research Laboratory
TCM	Transportation Control Measures
TDA	Texas Department of Agriculture
TDH	Texas Department of Health
TDM	Travel Demand Management
TEA-21	Transportation Equity Act for the 21st Century
THC	Texas Historical Commission
THL	Texas Historical Landmarks
THM	Texas Historical Markers
TIP	Transportation Improvement Plan
TMA	Transportation Management Association
TNRCC	Texas Natural Resource Conservation Commission
TORP	Texas Outdoor Recreation Plan
TPWD	Texas Parks and Wildlife Department

TRWD	Tarrant Regional Water District
TSM	Transportation Systems Management
TSS	Total Suspended Solids
TTA	Texas Turnpike Authority
TxDOT	Texas Department of Transportation
ENV	TxDOT Environmental Affairs Division
TxIHW	Texas Industrial and Hazardous Waste Database
US	United States Highway
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
UST	Underground Storage Tank
VCP	Voluntary Cleanup Programs
VOC	Volatile Organic Compounds

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APPENDICES

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APPENDIX A

STATE AND LOCAL PROJECT AUTHORIZATIONS

ATTACHMENT 1:	CITY OF FORT WORTH, MAYOR AND COUNCIL COMMUNICATION NO. G-6454. APPROVAL OF MINUTE ORDER 83516 PROVIDING FOR THE CONSTRUCTION OF SH 121 FROM I-35W TO FM 1187 (SOUTHWEST FREEWAY).
ATTACHMENT 2:	CITY OF FORT WORTH RESOLUTION NO. 1886 IN SUPPORT OF A STUDY OF TOLL ROAD FINANCING OF ALL OR PORTIONS OF THE SH 121 EXTENSION FROM IH 35W IN THE CITY OF FORT WORTH TO US 67 IN THE CITY OF CLEBURNE.
ATTACHMENT 3:	CITY OF FORT WORTH RESOLUTION NO. 2474 AUTHORIZING AN AGREEMENT BETWEEN THE CITY OF FORT WORTH, THE NORTH TEXAS TOLLWAY AUTHORITY, AND THE TEXAS DEPARTMENT OF TRANSPORTATION CONCERNING DEVELOPMENT OF THE SOUTHWEST PARKWAY. MAYOR AND COUNCIL COMMUNICATION NO. C-17178. RESOLUTION AUTHORIZING SOUTHWEST PARKWAY INTERLOCAL AGREEMENT BETWEEN THE CITY OF FORT WORTH, TEXAS DEPARTMENT OF TRANSPORTATION, AND THE NORTH TEXAS TOLLWAY AUTHORITY.
ATTACHMENT 4:	CITY OF FORT WORTH RESOLUTION NO. 2482 CREATING A CITIZEN ADVISORY COMMITTEE TO THE CITY COUNCIL RELATING TO THE SOUTHWEST PARKWAY (SH 121-T) PROJECT.

Mayor and Council Communication

DATE	REFERENCE NUMBER	SUBJECT:	PAGE
10-8-85	G-6454	APPROVAL OF MINUTE ORDER 83516 PROVIDING FOR THE CONSTRUCTION OF S.H. 121 FROM I-35W TO FM 1187 (SOUTHWEST FREEWAY)	2 of ___

RECOMMENDATION

It is recommended that the City Council accept the attached Minute Order 83516 as outlined below.

BACKGROUND

On January 3, 1984 (M&C G-5864), the City Council formally endorsed the Southwest Freeway and a related implementation strategy. On December 11, 1984, (M&C G-6185), the Council approved the hiring of a consultant to perform a feasibility study of the eastern alignment as proposed by City staff. This alignment did, in fact, prove feasible and that fact has been accepted by appropriate State Highway Commission authority. The Highway Commission, meeting in regular session on August 29, 1985, approved an order canceling the previously approved Route A presented in a public meeting on May 2, 1973 and further provided for in Minute Order 68084, and ordered the Engineer-Director to tender Minute Order 83516 containing the following basic provisions:

Providing the City and/or County will:

1. Furnish all necessary right-of-way clear of obstructions and free of cost to the State from Hulen Street south to FM 1187, with acquisition procedures to be in accordance with federal and state laws governing same; and

2. Donate to the State all of the right-of-way required for this project that is on property owned by the City (not acquired for public road proposes) immediately upon approval of a geometric layout and being furnished a right-of-way map and instruments of conveyance. The City retains the right to use the donated R.O.W. until needed for construction purposes.

3. Secure all necessary right-of-way and adjust utilities from Hulen Street, northeast to Interstate Highway 35W, according to policies of the State Department of Highways and Public Transportation, with acquisition procedures to be in accordance with Federal and State laws governing the acquisition policies for acquiring real property. Reimbursement to the City or County will be in accordance with Article 6702-1, Sec. 4.301, Subsec. C., V.A.C.S., as amended. The City and/or County may request the State to assume responsibility of acquisition under the "Alternate Procedure" authorized by the State Highway and Public Transportation Commission by Minute Order 80312. The City and County will contribute ten percent (10%) of the right-of-way cost in a manner prescribed by the State Department of Highways and Public Transportation.

4. Provide for construction of approved frontage roads from Hulen Street south to Farm to Market Road 1187.

DATE	REFERENCE NUMBER	SUBJECT	PAGE
10-8-85	G-641	APPROVAL OF MINUTE ORDER 83516 PROVIDING FOR THE CONSTRUCTION OF S.H. 121 FROM I-35W TO FM 1187 (SOUTHWEST FREEWAY)	2 of 2

5. Secure authority to obtain acceptable and necessary earth construction material at no cost to the State from the channel of the West Fork of the Trinity River, as needed to construct embankment in an economical manner.

The State Department of Highways and Public Transportation will:

1. Proceed with route, location and design studies, including engineering, social, economic, and environmental studies, and hold appropriate public meetings and hearings to establish a route and design that is consistent with the goals and objectives of the community.

2. Provide Relocation Assistance as may be required and determined to be eligible under the Relocation Assistance Program.

3. Provide for construction of main lanes, necessary frontage roads and interchanges between Interstate Highway 35W and Hulen Street, and construction of main lanes from Hulen Street to Farm to Market Road 1187, all as required by traffic and as funds become available.

4. Maintain the facility upon completion of construction.

The State Department of Highways and Public Transportation will control location and design of the entire project and will retain the right to inspect, approve or disapprove all engineering work, construction plans, specifications and construction.

The State Department of Highways and Public Transportation will not be bound to a firm commitment to future construction schedules due to the many related factors over which the Department has no control.

The City will probably ask the S.D.H.P.T. to assume responsibility for R.O.W. acquisition from Hulen Street northeast to I-35W under the "alternative procedure" described above in order to avoid adding a large number of temporary staff. The task of acquiring the R.O.W. south of Hulen Street will be substantial. Although the City expects to get substantial land donations from developers, the cost for excess R.O.W. required for interchanges and grade separations, and R.O.W. from small holders will be quite large. This minute order places the responsibility for utility relocation south of Hulen on the City/County without any possibility of partial reimbursement from State or federal funds. The dollar amounts required for R.O.W. and utility relocation cannot be determined at this time, but will be significant.

APPROVED BY
CITY COUNCIL

OCT 15 1985

Ruth Alexander
City Secretary of the
City of Fort Worth, Texas

DAI:dj

SUBMITTED FOR THE CITY MANAGER'S OFFICE BY: David A. Lancey	DISPOSITION BY COUNCIL: ☐ APPROVED ☐ OTHER (DESCRIBE)	PROCESSED BY CITY SECRETARY
ORIGINATING DEPARTMENT HEAD: Gary Santerre		
FOR ADDITIONAL INFORMATION CONTACT: Jim Anderson 7906		DATE

STATE DEPARTMENT OF HIGHWAYS
AND PUBLIC TRANSPORTATION

MINUTE ORDER

TARRANT County

District No. 2

WHEREAS, in TARRANT COUNTY, Minute Order 68084 dated October 4, 1973 designated a STATE HIGHWAY extending from Interstate Highway 35W and State Highway 121, southwest to Farm to Market Road 1187 and approved Route A as displayed at the public hearing which was held on May 2, 1973; and

WHEREAS, appropriate local officials no longer support all of said Route A;

NOW, THEREFORE, IT IS ORDERED that the previous approval of Route A in Minute Order 68084 be and is hereby cancelled and the Engineer-Director is directed to tender the following proposal to the City of Fort Worth and Tarrant County:

Provided the City and/or County will:

1. Furnish all necessary right of way clear of obstructions and free of cost to the State from Hulen Street, south to Farm to Market Road 1187, with acquisition procedures to be in accordance with Federal and State laws governing the acquisition policies for acquiring real property.

2. Donate to the State all of the right of way required for this project that is on property owned by the City (not acquired for public road purposes), immediately upon approval of a geometric layout and being furnished a right of way map and instruments of conveyance. The City retains the right to use the donated right of way until needed for construction purposes.

3. Secure all necessary right of way and adjust utilities from Hulen Street, northeast to Interstate Highway 35W, according to policies of the State Department of Highways and Public Transportation, with acquisition procedures to be in accordance with Federal and State laws governing the acquisition policies for acquiring real property. Reimbursement to the City or County will be in accordance with Article 6702-1, Sec. 4.301, Subsec. C, V.A.C.S., as amended. The City and County may request the State to assume responsibility of acquisition under the "Alternate Procedure" authorized by the State Highway and Public Transportation Commission by Minute Order 80312. The City and County will contribute ten percent (10%) of the right of way cost in a manner prescribed by the State Department of Highways and Public Transportation.

4. Provide for construction of approved frontage roads from Hulen Street, south to Farm to Market Road 1187.

5. Secure authority to obtain acceptable and necessary earth construction material at no cost to the State from the channel of the West Fork of the Trinity River, as needed to construct embankment in an economical manner.

STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

TARRANT County

District No. 2

MINUTE ORDER

The State Department of Highways and Public Transportation will:

1. Proceed with route, location and design studies, including engineering, social, economic, and environmental studies, and hold appropriate public meetings and hearings to establish a route and design that is consistent with the goals and objectives of the community.

2. Provide Relocation Assistance as may be required and determined to be eligible under the Relocation Assistance Program.

3. Provide for construction of main lanes, necessary frontage roads and interchanges between Interstate Highway 35W and Hulen Street, and construction of main lanes from Hulen Street to Farm to Market Road 1187, all as required by traffic and as funds become available.

4. Maintain the facility upon completion of construction.

This action is taken with the understanding that the State Department of Highways and Public Transportation will control location and design of the entire project and will retain the right to inspect, approve or disapprove all engineering work, construction plans, specifications and construction.

This action is also taken with the further understanding that the State Department of Highways and Public Transportation cannot be bound to firm commitment to future construction schedules due to the many related factors over which the Department has no control.

Upon acceptance of the provisions of this Order by the appropriate officials of the City of Fort Worth and Tarrant County, the Engineer-Director is directed to enter into any necessary agreements with the City of Fort Worth and Tarrant County for development of plans for construction and to proceed with the work outlined herein.

This Order shall become operative upon acceptance by the City of Fort Worth and Tarrant County and if not accepted within 90 days of the date hereof, the action contained herein shall be automatically cancelled.

Submitted by: Copy L.F.E.

(Title) Program Engineer

Approved

Examined and recommended by:

Deputy Director

Engineer-Director

Approved:

Commissioner

Commissioner

Commissioner

Minute Number 83516

Date Passed AUG 29 85

A Resolution

RESOLUTION NO. 1886

IN SUPPORT OF A STUDY OF TOLL ROAD FINANCING
OF
ALL OR PORTIONS OF THE S.H.121 EXTENSION
FROM I.H.35W IN THE CITY OF FORT WORTH
TO U.S. 67 IN THE CITY OF CLEBURNE

WHEREAS, the City of Fort Worth and its citizens have repeatedly demonstrated their support for the timely completion of the S.H. 121 Extension from I.H. 35W in Fort Worth, Texas to U.S. 67 in Cleburne, Texas through resolutions and public testimony; and,

WHEREAS, public funding of major transportation projects continues to face significant obstacles; and,

WHEREAS, S.H. 121 will compete for funding with many other highly worthwhile transportation projects throughout our State, and,

WHEREAS, there exists the potential for financing of all or some portion of the S.H. 121 Extension through the use of toll road financing should the Texas Turnpike Authority determine the viability of such financing for this project; and,

WHEREAS, the Federal Intermodal Surface Transportation and Efficiency Act of 1991 (ISTEA), allows for toll road bond funds to be augmented with federal transportation funds to build toll roads under certain conditions;

NOW THEREFORE BE IT RESOLVED, that the City Council of the City of Fort Worth does hereby respectfully request that the Texas Turnpike Authority take such actions and conduct such studies as may be required to determine the viability of financing all or any portion of the S.H. 121 Extension from I.H. 35W in Fort Worth, Texas to U.S. 67 in Cleburne, Texas with toll road bonds or with a combination of toll road bonds and federal transportation funds; and,

BE IT FURTHER RESOLVED, that the City Council of the City of Fort Worth does hereby request that the Texas Department of Transportation consider various project phases to expedite construction of the S.H. 121 Extension and assist the Texas Turnpike Authority in determining the feasibility of toll road financing of all or any portion of the S.H. 121 Extension.

APPROVED
CITY COUNCIL
FEB 9 1993

IN WITNESS WHEREOF, we have hereunto set our hand and caused the great seal of the City of Fort Worth to be affixed this 9th day of February, 1993.

Kay Granger, Mayor

City Secretary of the City of Fort Worth, Texas

Carlos Puente, Council Member

Jewel Woods, Council Member

Chuck Silcox, Council Member

William Meadows, Council Member

Morris Matson, Council Member

Virginia Nell Webber, Council Member

Eugene McCray, Council Member

David Chappell, Council Member

CITY OF FORT WORTH

A Resolution

Adopted Resolution No. 2474

AUTHORIZING AN AGREEMENT BETWEEN THE CITY OF FORT WORTH, THE NORTH TEXAS TOLLWAY AUTHORITY, AND THE TEXAS DEPARTMENT OF TRANSPORTATION CONCERNING DEVELOPMENT OF THE SOUTHWEST PARKWAY

WHEREAS, the timely extension of State Highway 121 south and west from Interstate Highway 30 in Fort Worth to U.S. Highway 67 in Cleburne (the "Southwest Parkway") is a crucial element in the successful development of the City of Fort Worth (the "City"), as well as benefiting the surrounding region and the State of Texas; and

WHEREAS, the City acknowledges that the entire S.H. 121 (I-35 W to U.S. Highway 67) project is unlikely to be completed due to cost and issues related to routing through existing neighborhoods, (some of which are historically significant) and physical obstacles in the project section from I-35 W to approximately I-30; and

WHEREAS, the City desires to delete from further consideration this segment of the project (I-35 W to approximately I-30); and

WHEREAS, the Southwest Parkway has been on the City's Thoroughfare Plan since the 1960's; and

WHEREAS, the City commissioned an intermediate level feasibility study to consider whether various phases or segments of the Southwest Parkway could be developed as a turnpike; and

WHEREAS, the City, other local governing bodies and private sector interests presented their study to the Texas Transportation Commission (the "Commission") in July 1995, and requested the participation of the Texas Department of Transportation ("TxDOT") in the development and funding of some portion of the Southwest Parkway, and by adopted minute order the Commission committed to support the development of the Southwest Parkway; and

WHEREAS, public funding of major transportation projects continues to face significant obstacles, and the Southwest Parkway is competing for funding with other worthwhile transportation projects; and

WHEREAS, the North Texas Tollway Authority (the "Authority") is authorized to build and operate "turnpike projects", as that term is defined in the Turnpike Act (Tex. Transportation Code, Chapter 366) throughout Collin, Dallas, Denton and Tarrant Counties; and

WHEREAS, there exists the potential for expediting the completion of the Southwest Parkway by financing a portion of that projects' design and construction costs through the use of turnpike financing if the Authority can establish that the Southwest Parkway is a feasible turnpike project; and

WHEREAS, TxDOT has determined that the Southwest Parkway is necessary to alleviate congestion and ameliorate air quality, and supports the development of the Southwest Parkway as a turnpike project if the applicable legal requirements and other conditions can be satisfied; and

WHEREAS, the Fort Worth City Council and the Tarrant County Commissioner's Court have adopted resolutions requesting that the Authority take such actions and conduct such studies as may be necessary to determine the viability of jointly developing and financing the Southwest Parkway with a combination of turnpike revenue bonds, City funds, and federal and/or state transportation funds;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF FORT WORTH, TEXAS:

That the City Manager is authorized to execute an agreement between the City, TxDOT and the Authority, which agreement shall:

(1) Acknowledge the approval and support of the City and TxDOT for the financing, design, construction, operation and maintenance by the Authority of the Southwest Parkway as a turnpike project.

(2) Acknowledge the approval and acceptance of certain design assumptions in connection with that portion of the Southwest Parkway extending from its interchange with Interstate Highway 30 to the intersection with Alta Mesa Drive (the "Initial Turnpike Portion"), which design assumptions may be utilized by the Authority in further evaluating the feasibility of the Southwest Parkway as a turnpike project.

(3) Provide for the allocation of estimated project costs for the Initial Turnpike Portion.

(4) Set forth the obligations of the City, TxDOT and the Authority with regard to the Initial Turnpike Portion.

(5) Provide for the creation of a Technical Work Group composed of representatives of the City, TxDOT, the Authority, and the Federal Highway Administration, and such other members representing affected governmental or quasi-governmental bodies as designated by the City, TxDOT or the Authority (such other members being selected for the purpose of providing technical assistance only and shall not have the authority to bind the City, TxDOT or the Authority).

ADOPTED, this 8th day of December, 1998

Mayor

City Secretary

APPROVED AS TO FORM AND LEGALITY:

Assistant City Attorney

APPROVED
CITY COUNCIL
DEC 8 1998

City Secretary of the
City of Fort Worth, Texas

CITY OF FORT WORTH

City of Fort Worth, Texas

Mayor and Council Communication

DATE	REFERENCE NUMBER	LOG NAME	PAGE
12/8/98	C-17178	20SWPKWAY	1 of 2
SUBJECT	RESOLUTION AUTHORIZATING SOUTHWEST PARKWAY INTERLOCAL AGREEMENT BETWEEN THE CITY OF FORT WORTH, TEXAS DEPARTMENT OF TRANSPORTATION, AND THE NORTH TEXAS TOLLWAY AUTHORITY		

RECOMMENDATION:

It is recommended that the City Council adopt the attached resolution authorizing the City Manager to execute an interlocal agreement between the City, Texas Department of Transportation (TXDOT) and the North Texas Tollway Authority (the Authority) concerning the development of the Southwest Parkway (S.H. 121).

DISCUSSION:

The proposed interlocal agreement between the City, TXDOT, and the Authority concerns the extension of State Highway 121 south and west from Interstate 30 at Forest Park Boulevard, southwest of downtown Fort Worth to U.S. Highway 67 in Cleburne, also known as the Southwest Parkway.

The agreement supports the development of the Southwest Parkway as a turnpike project if the Authority can establish its feasibility as such. The Authority has provided for the preparation of a preliminary rate and revenue evaluation indicating potential feasibility for that portion of the Southwest Parkway extending from its interchange with I-30 to the intersection with Alta Mesa Drive (the "Initial Turnpike Portion"). This is predicated upon the assumption of a design of two lanes in each direction within a right of way of approximately 220 feet in width. The agreement approves these design assumptions, subject to modification in response to the Environmental Impact Study and review of design standards by the parties. The City may propose additional amenities and design features and will have approval rights over design through the schematic design phase (which will incorporate both structural and aesthetic elements) and the ability to review and comment subsequent to that phase.

Total estimated costs for the Initial Turnpike Portion is approximately $180 million. The Authority estimates that the Initial Turnpike Portion could generate sufficient revenues to support the issuance of $65-70 million in turnpike revenue bonds. The City commits to acquire, or cause to be acquired, all required right of way (with the exception of right of way at the I-30 and I-20/183 interchanges). TXDOT will provide for the construction of interchanges and provide other support including the preparation of Environmental Impact Statements. The City, TXDOT and the Authority agree to work collaboratively to address any remaining funding shortfalls, including investigation of funding from the North Central Texas Council of Governments and/or the use of federal funding.

In addition to providing right of way, the City also agrees to assist the Authority in obtaining necessary approvals, permits and further agreements; to relocate city-owned utilities; to extend City-owned utilities to the outside boundary of the right of way to facilitate utility service to toll plazas and other facilities; to permit connection to City storm water drainage systems; and, with TXDOT, to provide for the operation, maintenance, policing and regulating of service roads and other adjacent, intersecting and crossing streets.

City of Fort Worth, Texas

Mayor and Council Communication

DATE	REFERENCE NUMBER	LOG NAME	PAGE
12/8/98	C-17178	20SWPKWAY	2 of 2

SUBJECT	RESOLUTION AUTHORIZATING SOUTHWEST PARKWAY INTERLOCAL AGREEMENT BETWEEN THE CITY OF FORT WORTH, TEXAS DEPARTMENT OF TRANSPORTATION, AND THE NORTH TEXAS TOLLWAY AUTHORITY

The agreement provides for the creation of a Technical Work Group composed of representatives of the parties. The Technical Work Group will review and comment upon the proposed standards, design features, and aesthetic design of the project, and will conduct regularly scheduled meetings to discuss the schematic design, and preparation of plans, specifications and estimates.

The agreement further provides for public involvement through a series of public meetings to be held by the Authority during the schematic design process.

FISCAL INFORMATION/CERTIFICATION:

The Finance Director certifies that the execution of the attached interlocal agreement will not have a material impact on City funds. City funding for its portion of the project is contingent upon the establishment of project feasibility by the Authority and will be the subject of future agreements.

MG:j

Submitted for City Manager's Office by:		FUND	ACCOUNT	CENTER	AMOUNT	CITY SECRETARY
		(to)				
Mike Groomer	6140					
Originating Department Head:						
Hugo Malanga	7801	(from)				
Additional Information Contact:						
Hugo Malanga	7801					

A Resolution

CREATING A CITIZEN ADVISORY COMMITTEE TO THE CITY COUNCIL RELATING TO THE SOUTHWEST PARKWAY (SH-121T) PROJECT

NO. 2482

WHEREAS, on December 8, 1998, the City Council approved an agreement with the North Texas Tollway Authority and the Texas Department of Transportation (TxDOT) concerning the development of the Southwest Parkway; and

WHEREAS, the proposed Southwest Parkway is necessary to alleviate congestion and ameliorate air quality; and

WHEREAS, the proposed Southwest Parkway requires federal, state, tollway and local funding to provide for the design and construction of the project; and

WHEREAS, the proposed Southwest Parkway represents a combination of design options, which are necessary to achieve construction of the project within the identified revenues and to assure the completion of the project in a timely manner; and

WHEREAS, all parties to the agreement are committed to incorporating a high degree of aesthetic and urban design standards to the extent reasonably possible; and

WHEREAS, all parties to the agreement have agreed that the North Texas Tollway Authority, TxDOT and/or the City of Fort Worth may propose additional amenities, design features and standards, which may not necessarily have been included in initial concepts; and

WHEREAS, all parties to the agreement have agreed that the final approval of the schematic design must be made in writing by the City and TxDOT; and

WHEREAS, it is the desire of the Fort Worth City Council to assure that adequate citizen involvement continues prior to the final approval of the schematic design by the City.

CITY OF FORT WORTH

NOW THEREFORE BE IT RESOLVED THAT:

1) A Citizen Advisory Committee is hereby created to provide the City Council with recommendations and comments on the design of the Southwest Parkway (SH 121 T) project.

2) The Citizen Advisory Committee is to be appointed by the City Council and shall work through the City representative to the Technical Work Group (comprised of NTTA, TXDOT and City staff per the agreement) and within the work schedule of the Technical Work Group, to assure the comments are received in a timely manner consistent with the project construction time schedule.

3) The committee membership must be diverse and reflect a balance of community interests – including neighborhoods, historic preservation, scenic preservation, general business, and residential and commercial land development interests. The members must be committed to ensuring the best design possible for building the Southwest Parkway within identifiable, practical and available resources.

4) Upon approval by the City of the final schematic design, the Citizen Advisory Committee shall cease to exist.

Adopted this 12th day of January 1999.

Kenneth Barr

Mayor Kenneth Barr

APPROVED
CITY COUNCIL

JAN 12 1999

City Secretary of the
City of Fort Worth, Texas

CITY OF FORT WORTH

THE STATE OF TEXAS |

COUNTY OF TARRANT |

I, RUTH ALEXANDER, City Secretary of the City of Fort Worth, Texas, do hereby certify that the above and foregoing is a true and correct copy of Mayor and Council Communication No. G-6454, duly presented and adopted by the City Council of the City of Fort Worth, Texas, at a regular session held on the 15th day of October, A. D. 19 85, as same appears of record in The City Council Minute Book Page 407 & 408, Book B-3 in The City Secretary Office.

WITNESS MY HAND and the Official Seal of the City of Fort Worth, Texas, this the 21st day of October A. D. 19 85.

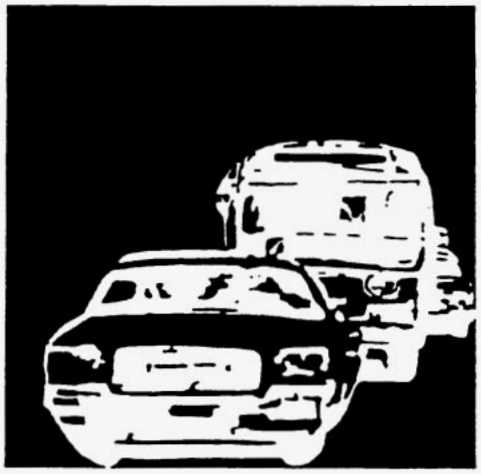
Ruth Alexander

City Secretary of the
City of Fort Worth, Texas

APPENDIX B

SOUTHWEST FORT WORTH
SUBAREA STUDY
APRIL 1984

Final Report



Southwest Fort Worth Subarea Study

April 1984

City of Fort Worth
Barton-Aschman Associates, Inc.
North Central Texas Council of Governments

The North Central Texas Council of Governments

The North Central Texas Council of Governments is a voluntary association of cities, counties, school districts and special districts within the sixteen-county North Central Texas region - established in January 1966 to assist local governments in planning for common needs, cooperating for mutual benefit, and coordinating for sound regional development.

The Council of Governments is an organization of, by, and for local governments. Its purpose is to strengthen both the individual and collective power of local governments - and to help them recognize regional opportunities, resolve regional problems, eliminate unnecessary duplication, and make joint regional decisions - as well as to develop the means to assist in the implementation of those decisions.

North Central Texas is a sixteen-county metropolitan region centered around Dallas and Fort Worth. It has a population of 3.9 million and an area of 12,627 square miles. NCTCOG currently has 189 member governments. The membership includes 16 counties, 141 municipalities, 19 independent school districts, and 13 special purpose districts.

NCTCOG's Department of Transportation and Energy

Since 1974 NCTCOG has served as the Metropolitan Planning Organization (MPO) for transportation for the Dallas-Fort Worth area. NCTCOG's Department of Transportation and Energy is responsible for the regional planning process for all modes of transportation. The Department provides technical support and staff assistance to the Regional Transportation Council and its technical committees, which compose the MPO policy-making structure. In addition the Department provides technical assistance to the local governments of North Central Texas in planning, coordinating, and implementing transportation decisions.

William J. Pitstick
Executive Director

North Central Texas Council
of Governments
P. O. Drawer COG
Arlington, Texas 76005-5888
(817) 640-3300

Gordon A. Shunk
Director of Transportation
and Energy

The NCTCOG offices are located in Arlington in the Centerpoint Two Office Building, 616 Six Flags Drive. Take Hwy. 360 exit off I-30 (turnpike) and proceed .5 mile southwest on Six Flags Drive.

The preparation of this report was financed in part through grants for technical studies from the Urban Mass Transportation Administration and the Federal Highway Administration of the U. S. Department of Transportation.

April 1984

PROJECT PARTICIPANTS

Project Staff

North Central Texas Council of Governments:

Project Manager-Michael Morris, Assistant Director of Transportation and Energy

Gordon Shunk, Director of Transportation and Energy
Dan Kessler, Transportation Planner II
Marty Minkoff, Transportation Planner
Julie Dunbar, Transportation Planner

City of Fort Worth:

Robert L. Herchert, City Manager
David Ivory, Assistant City Manager
James Toal, Director of Planning
Brad Taylor, Assistant Director of Planning
Bob Abbott, Senior Transportation Planner
Joe Pobiner, Associate Planner
Walt Cooper, Chief Traffic Engineer

Consultants:

Rod Kelly, Barton-Aschman Associates, Inc.
Sheldon Johnson, Barton-Aschman Associates, Inc.
William G. Barker, William G. Barker and Associates

Staff Review Committee Members

John Bartosiewicz, CITRAN
Mark Sowa, City of Burleson
Linda Watson, CITRAN
Jim Moore, Tarrant County
Kenneth Neystel, City of Benbrook
Dennis Woodard, City of Crowley
Chuck Talbot, Town of Edgecliff Village
Ed Callagher, City of Benbrook
Commissioner Cardwell, Parker County
Howard Reily, Texas Turnpike Authority

Southwest Quadrant Citizen Advisory/Review Committee Members

Robert Abels, Burleson Mayor
Berne Alger, South Area Chamber of Commerce
Dick Andersen, Tarrant County Commissioner
Rev. Jan Cain, Southside Area Ministries
Pablo Calderon, Rockwood Sector
Margaret DeMoss, CandleRidge Homeowners Association
Jerry Dunn, Benbrook Mayor
Walton Eller, Crowley Mayor

Abstract

TITLE: Final Report: Southwest Fort Worth Subarea Study

AUTHORS: City of Fort Worth
Barton-Aschman Associates, Inc.
North Central Texas Council of Governments

SUBJECT: A summary of a transportation study done for the southwest quadrant of Fort Worth to address long-range transportation alternatives.

SOURCE OF COPIES: Regional Data Center
NCTCOG
P. O. Drawer COG
Arlington, Texas 76005-5888
(817) 640-3300

NUMBER OF PAGES: 68

ABSTRACT: The southwest quadrant of Tarrant County is one of the most rapidly growing areas in the Dallas-Fort Worth region. Because of this anticipated demand and the lack of a major radial roadway facility in this corridor, the Southwest Fort Worth Subarea Study was initiated. The study recommends long-range transportation alternatives for the subarea which includes the Fort Worth central business district; the cities of Burleson, Edgecliff Village, Crowley, and Benbrook; and some nearby rural areas in and just beyond Tarrant County. Short-range transportation recommendations are documented in Technical Report 36, Southwest Fort Worth Subarea Study: Analysis of TSM/TCM Actions.

Southwest Quadrant Citizen Advisory/Review Committee Members (Continued)

Terri Ellis, Mistletoe Heights Association
Curtis Frazier, Central Area Chamber of Commerce
Dr. John Freese, Medical District Task Force
Joseph Gearhart, Arlington Heights Sector
John Glenn, Jr., Cassco Land Company
Rachel Gooch, P.T.A.C.
Bud Hughes, Western Hills Sector
Dr. Marie Kelly, Arlington Heights Sector
A. J. Lambert, Johnson County Commissioner
Gene Livesay, Sycamore Sector
William Marquardt, CBD Sector
Jon Nelson, Ryan Place Association
Joe Nichols, Wedgwood Sector
Don Otto, Cultural District
Tom Purvis, Park Board
Tom Reynolds, CBD Sector
Elizabeth Riggs, Southside Sector
Norm Robbins, Fort Worth Chamber of Commerce
Dan Roberts, Northeast Sector
Charles Robeson, Edgecliff Village
Jack Sallee, Parker County Commission
Betty June Shelvey, Sector One Sector
Herman Stute, Fort Worth City Council
Weldon Ward, Fort Worth Plan Commission
Kathy Wetherby, Fort Worth City Council
Gary Woodward, Hulen Mall

City Plan Commission Members

Weldon Ward (Chairman)
John Randolph Thompson, Jr.
Patricia L. Rangel
Earl Cox
Reuben Vallejo
Martin S. Moore (Vice Chairman)
Linda C. Baker
Rev. Nehemiah Davis
Carmen Smith

City Council Members

Bob Bolen, Mayor
Louis J. Zapata, District 2
Dwaine Johnson, District 3
Russell Lancaster, District 4
Bert C. Williams, District 5
Kathy Wetherby, District 6
Richard C. Newkirk, District 7 (Mayor Pro Tem)
Jim A. Bagsby, District 8
Herman F. Stute, District 9

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SUMMARY

The southwest quadrant of Tarrant County is one of the most rapidly growing areas in the Dallas-Fort Worth region. Because of this anticipated demand and the lack of a major radial roadway facility in this corridor, the Southwest Fort Worth Subarea Study was initiated. This two-year study was jointly sponsored by the Regional Transportation Council of the North Central Texas Council of Governments (NCTCOG) and the City of Fort Worth.

The study recommends both short- and long-range transportation alternatives for the subarea which includes the Fort Worth central business district; the cities of Burleson, Edgecliff Village, Crowley, and Benbrook; and some nearby rural areas in and just beyond Tarrant County.

By examining expected demographic, roadway, and transit ridership changes between 1980 and 2000, this study projects a 69 percent population increase and a 60 percent employment increase for the subarea. Vehicle miles of travel are expected to increase 105 percent, while presently committed increases in overall freeway, arterial, and collector capacities amount to only 36 percent. Peak-period vehicle speeds are projected to decrease 35 percent -- from 28 mph in 1980 to 18 mph in 2000. Need for downtown parking spaces would increase 108 percent, while the transit outlook would improve -- with a 99 percent passenger increase.

Growth-related traffic congestion has increased in this subarea during recent years primarily due to the lack of a main traffic artery to provide radial access to downtown Fort Worth. This results in increased delays and excessive travel times as congestion worsens.

Fort Worth voters approved a portion of the study's short-range recommendations in a May 1982 bond election. Projects were chosen for cost effectiveness, positive mobility, energy, and air quality impacts. Included in this bond package was a $1 million traffic signal system for the subarea.

The study findings represent involvement by many individuals and organizations. Since mid-1981, two advisory groups have examined the future of this subarea and reviewed short- and long-range transportation alternatives. A Citizen/Policy Committee (composed of mayors, city councilmembers, and community representatives) provided direction for the Staff Committee. The Staff Committee, responsible for technical support, included staff from NCTCOG's Transportation and Energy department and the five subarea cities. The consulting firm of Barton-Aschman Associates assessed cost and engineering aspects of each alternative. The two advisory groups reviewed subarea goals and projected land use, population growth, and travel. They also reviewed the various options and endorsed the recommended alternative.

Transportation impacts of 18 alternatives, including an "existing plus committed" option, were evaluated. These 18 options were narrowed to 4 alternatives, by considering cost and transportation impacts. The study further concluded that a combination of non-freeway options -- including parkway concepts, arterial improvements, bus improvements, and a transit guideway -- would not adequately serve future subarea transportation needs alone.

The study recommends a radial freeway through the subarea to downtown, to be constructed within the next 6 to 8 years. This 11.7 mile recommended freeway would extend from the I.H. 35W/S.H. 121 interchange southwest to Sycamore

School Road. This route exhibits the most favorable performance and cost impacts -- with minimal negative effects on residential or business neighborhoods, parks, the Cultural District, and other community facilities. Early funding of this alternative will avoid expected development pressures on the right-of-way. Also recommended were immediate examination of funding options and a preliminary engineering study for the selected freeway alignment.

PUBLIC INVOLVEMENT PROCESS AND PROJECT COMMITMENT

The Fort Worth City Council unanimously endorsed the Southwest Fort Worth Subarea Study Findings on January 3, 1984. The Council also instructed the City Manager to pursue potential funding from the State Department of Highways and Public Transportation, Tarrant County, and other agencies and individuals (Mayor and Council Communication, January 3, 1984). The Tarrant County Commissioners' Court endorsed the recommended alternative on January 30, 1984.

Several organizations have approved the recommended freeway alignment. Organizations and boards that have formally endorsed the recommended route include:

- Southwest Quadrant Transportation Study Citizen Advisory Committee
- Park and Recreation Advisory Board
- Fort Worth Streams and Valleys Committee
- Fort Worth Chamber of Commerce
- Cultural District Committee
- Fort Worth Independent School District
- Fort Worth Downtown, Incorporated
- Fort Worth City Plan Commission
- Sector One Planning Council
- Tarrant County Water Improvement District No. 1
- Fort Worth City Council
- Tarrant County Commissioners' Court

The City of Fort Worth is presently negotiating with private developers and land owners along the freeway alignment in order to determine the amount of right-of-way which will be provided by private individuals as well as the

amount of construction costs that will be assessed to the land owners. For example, it is anticipated that a share of cost for frontage roads will be assessed to property owners.

BACKGROUND AND STUDY PURPOSE

The Southwest Fort Worth Subarea is and will likely continue to be one of the most rapidly growing areas of the Dallas-Fort Worth metropolitan area. The growth in population and employment coupled with the lack of radial access and inadequate capacity from major arterials will result in severe transportation problems.

The purpose of this study is to:

1. Identify the desired land use and redevelopment objectives for the southwest quadrant.
2. Estimate the land use and population growth areas and rates.
3. Predict future transportation demand.
4. Evaluate all feasible transportation solutions including public transit and private automobile solutions.
5. Select an alternative that best accommodates the transportation demand in a cost-effective manner and promotes the land use and environmental objectives.

In July of 1980, the Regional Transportation Council, the Metropolitan Planning Organization for the Dallas-Fort Worth area, authorized study of the Southwest Fort Worth Subarea. Planning funds were provided by the Federal Highway Administration and the Urban Mass Transportation Administration. This project

is contained in the 1980 through 1984 Unified Planning Work Programs for North Central Texas.

This subarea contains a land area of approximately 180 square miles (see Exhibit 1). The subarea includes the Fort Worth central business district, the southwest quadrant of Fort Worth, and the cities of Benbrook, Crowley, Edgecliff Village, and Burleson. This subarea also represents the southwest portion of Tarrant County.

STUDY METHODOLOGY

The study began with the development of goals and objectives. From these study requirements, 18 alternatives were developed for evaluation and were studied in three phases. Exhibit 2 highlights the process used to determine the recommended alternative.

Also obtained from goals and objectives were the evaluation criteria and performance measures used in selecting the recommended alternative. Exhibit 3 documents these measures and illustrates the comprehensiveness of the evaluation process.

The first phase of the evaluation procedure considered only the transportation performance measures and reduced the original 18 alternatives to 10. This decision was based on an alternative's ability to remedy anticipated congestion levels. The second phase of study added cost considerations and eliminated six additional alternatives because of low benefit-cost ratios. The third and final phase evaluated the final four alternatives and considered transportation, cost, and environmental factors. The recommended alternative is the product of the Phase III evaluation.

EXHIBIT 1

SOUTHWEST FORT WORTH SUBAREA

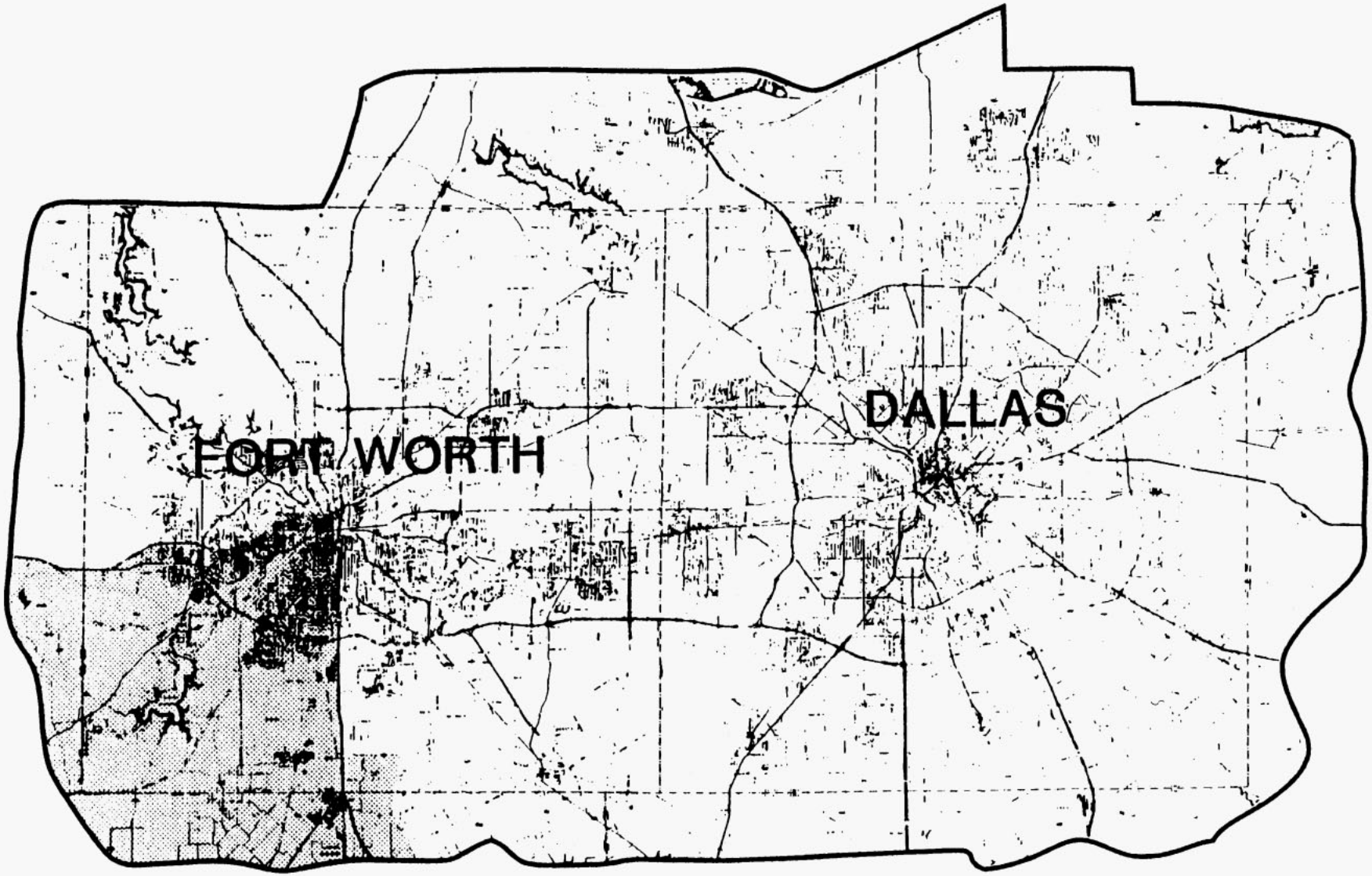


EXHIBIT 2

EVALUATION PROCESS

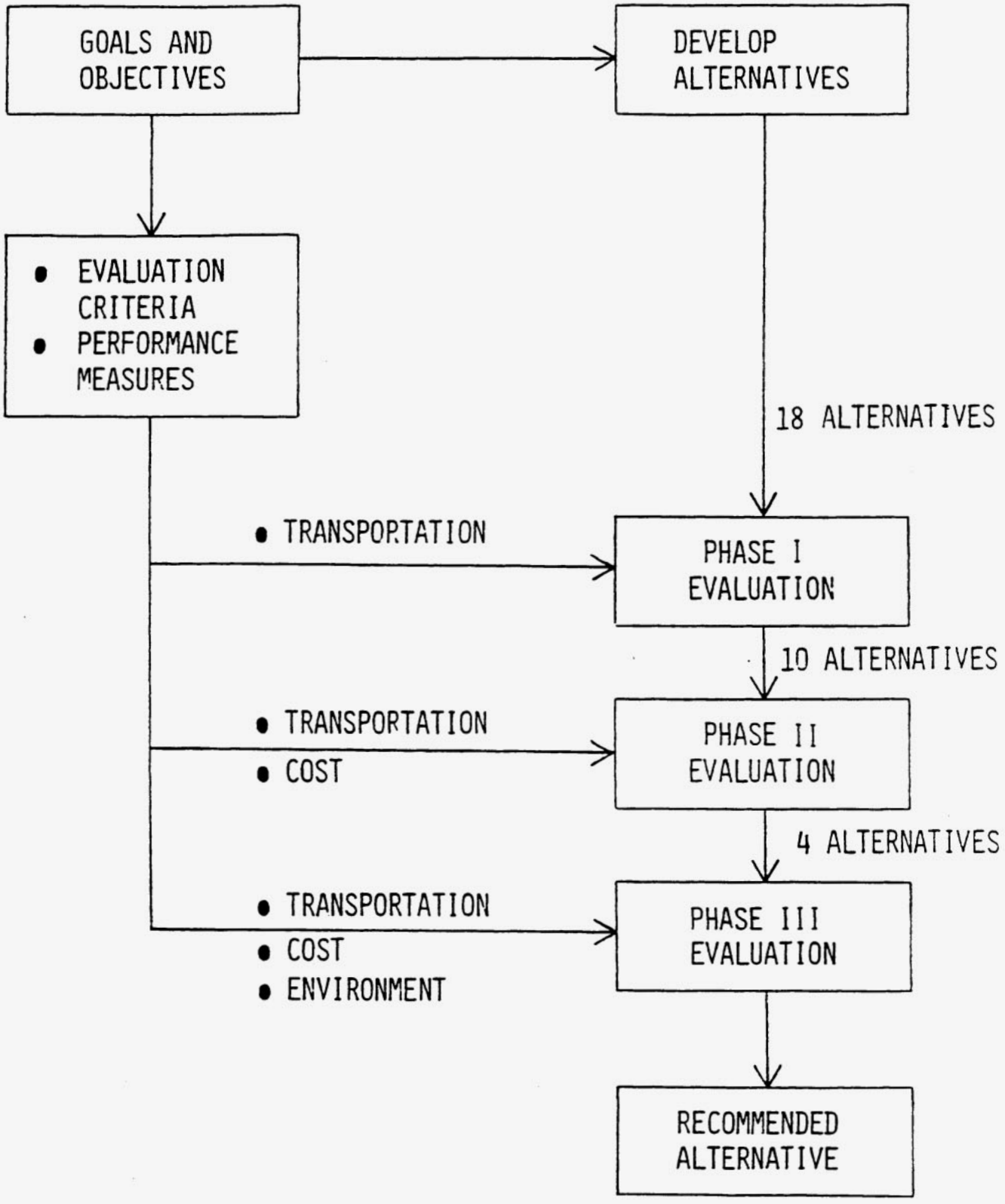


EXHIBIT 3

CRITERIA USED IN PHASE III EVALUATION

Evaluation Criteria	Performance Measure(s)
Cost	Annual Capital Costs, Right-of-Way Costs, and Operating and Maintenance Costs
Mobility	Total Vehicle Hours of Delay, Vehicle Miles of Travel, Level of Service, Peak-Period Speeds, and Transit Ridership
Environmental Impacts	
• Air Quality	Annual Hydrocarbon Emissions
• Water Quality	Runoff Surface Area (Sq. Ft.)
• Biological/Zoological	Extent Impacted
• Visual	Extent Impacted
• Historic Bldgs.	No. of Historic Bldgs./Extent Impacted
• Noise	Noise levels (dB)
• Energy	Annual Gallons of Fuel Consumed
Business/Residential Neighborhood Impacts	
• Household Displacements	No. of Households Displaced
• Business Displacements	No. of Businesses and Square Footage Displaced
• Disruption/Integrity	Extent Impacted
• Access	Extent Impacted
• Collector Street Travel	Collector VMT/Extent Impacted in Specific Areas
CBD Impacts	CBD Auto Speed
Growth/Redevelopment/Economic Impacts	Extent Impacted
Safety	Annual Property Damage
Construction Disruption	Duration in Days

NEED FOR ACTION

There are a variety of reasons behind the need for a transportation solution in the southwest quadrant of Fort Worth. Not only is the area experiencing rapid growth, but a substantial portion of that growth is located in the central corridor. It is this central corridor that has the greatest need for improvement since there is currently no available direct access route to the CBD.

The southwest quadrant of Fort Worth is projected to experience a substantial growth in population and employment by the year 2000. There were two different levels of year 2000 development used in the evaluation of alternatives. The first, referred to as Scenario 1, represents a conservative population growth estimate of 45.9 percent over the 1980 base year. Scenario 2 incorporates recent rezoning and platting activity approved for the southwest quadrant. This scenario results in a population growth estimate of 68.8 percent over the 1980 base year. Scenario 2 represents what is felt to be the most realistic development scenario. The population and employment values for 1980 and 2000 are shown in Exhibit 4.

The roadway and transit networks used to simulate the transportation conditions in 2000 consist of the existing 1980 system and those projects that are committed to be operative by 2000. By comparing 1980 conditions to those that would exist in 2000, the need for action in the southwest quadrant of Fort Worth is clearly demonstrated.

EXHIBIT 4

COMPARISON OF 1980 AND 2000 WEEKDAY SUBAREA PERFORMANCE

	1980	2000 Scenario 2	Percent Change
Demographic			
Population	207,614	350,393	68.8
Employment	142,636	228,042	59.9
Roadway			
Peak-Period Speed (mph)	27.7	17.9	-35.4
Peak-Period Arterial Speed (mph)	23.0	13.6	-40.9
Vehicle Miles of Travel	3,668,000	7,515,000	104.9
Roadway Capacity (Vehicle Miles of Capacity)	984,085	1,337,746	35.9
Parking Spaces Downtown	23,750	50,840	114.1
Transit			
Vehicle Miles of Travel	8,266	12,411	50.2
Peak Vehicles	83	163	96.4
Passengers	17,644	35,048	98.6
Speed	11.88	11.33	-4.6
Operating Cost (1983$)	$18,134	$31,011	71.0
Revenue (1983$)	$ 7,267	$14,370	97.7
Operating Ratio	40.1	46.3	15.5

The following list highlights the most significant performance changes between the 1980 and 2000 freeway and arterial systems:

- Projected increase in vehicle miles of travel of 105 percent
- Projected increase in roadway capacity of 36 percent
- Projected decrease in peak-period speed of 35 percent
- Projected increase in needed downtown parking spaces of 108 percent

Exhibit 4 contains the subarea roadway performance measures for 1980 and 2000. Along with the previously mentioned forecasts, the central corridor of the southwest quadrant demonstrates high peak-period travel times. In 1980, a person could travel 4.4 miles in 15 minutes. In 2000, it is projected that a driver could only travel 2.9 miles in this same period. A summary of the projected changes in the transit system follows:

- Projected increase in transit vehicle miles of travel of 50 percent
- Projected increase in the number of peak vehicles of 96 percent
- Projected increase in passengers of 99 percent
- Projected increase in operating cost of 71 percent
- Projected increase in revenue of 98 percent
- Projected improvement in the operating ratio of 16 percent

The population and employment growth in the southwest quadrant results in travel demand which far exceeds presently expected roadway improvements.

TRANSPORTATION ALTERNATIVES CONSIDERED

The need for a transportation solution is clearly demonstrated by the comparison of the 1980 and 2000 transportation system performance. However, in order to determine the appropriate solution, a comprehensive set of 18 alternatives was compiled for evaluation. To assist in the generation of

alternatives, a number of planning documents and alignment plans were reviewed for this subarea. In addition to these previous studies, additional suggestions were-obtained from various citizen groups, including the Southwest Quadrant Transportation Study Citizen Advisory Committee. The Fort Worth City Council, Fort Worth City Plan Commission, Park and Recreational Advisory Board and staff also provided input which helped in the formulation of the alternatives. Computer-generated data also guided the formulation of alternatives. The set of alternatives includes transit and roadway options in various combinations. All of the alternatives fall under one of the following descriptions:

- a Transportation Systems Management (TSM) strategy consisting of signal progression, street widenings, intersection grade separations, High-Occupancy-Vehicle lanes, and peripheral parking lots
- combinations of the above TSM alternative and three different horizontal parkway alignments
- a tollroad
- four different horizontal freeway alignments of varying lengths
- a passenger rail line or busway with a feeder bus system

The freeway alignments were considered in various sections in order to address the appropriate location and phasing of freeway construction.

The alternatives evaluated in this study covered a wide spectrum. Every feasible mode, whether it be bus, rail or auto, was included in the analysis. Consequently, the recommended solution was not obtained without examining all reasonable options.

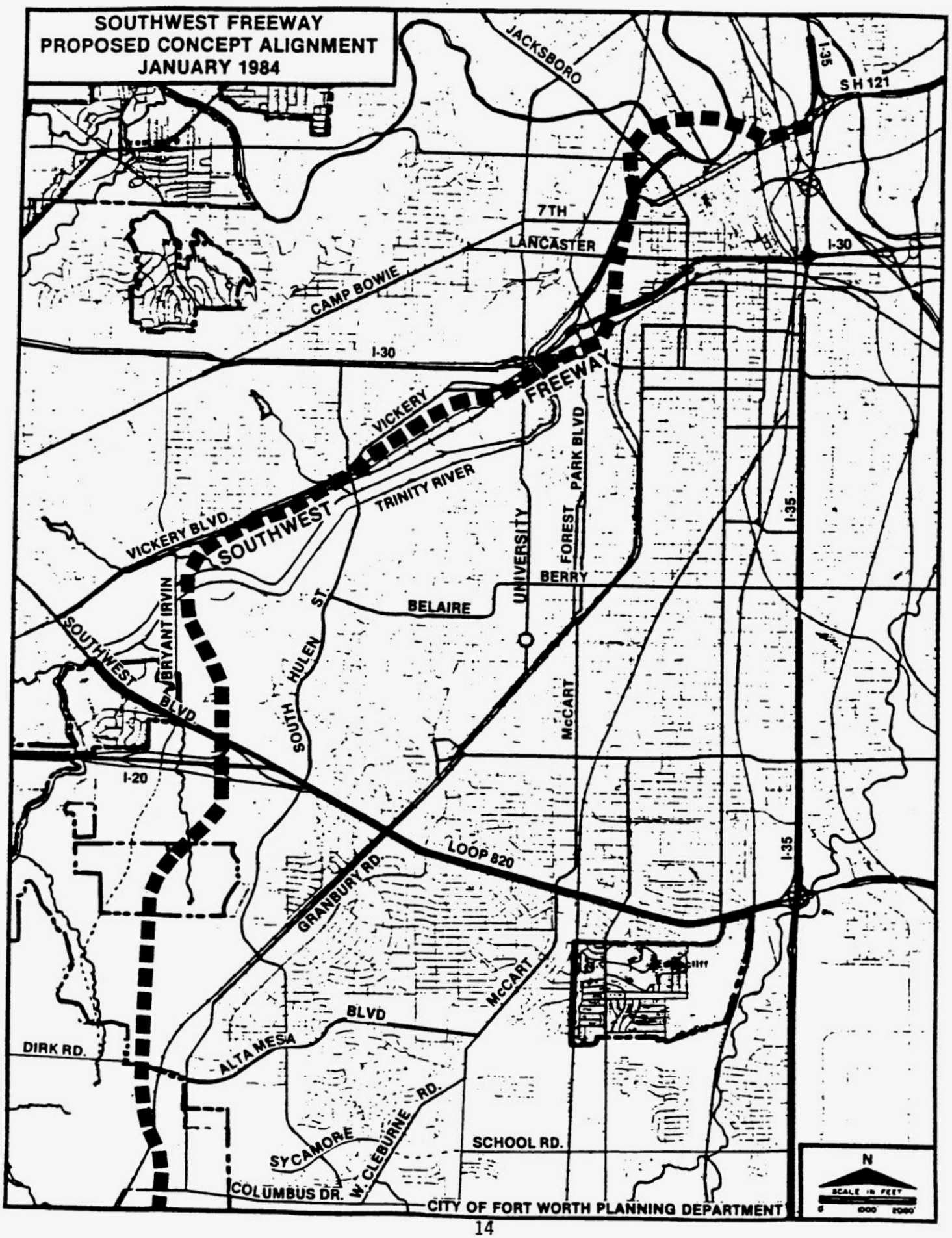
RECOMMENDED ALTERNATIVE

The alternative that has been selected for implementation consists of an 11.7 mile freeway extending from the existing S.H. 121/I.H. 35W interchange in downtown Fort Worth, southwest to Sycamore School Road. Exhibit 5 demonstrates this alignment. Based on the anticipated traffic volumes, it is recommended that the facility have six lanes throughout its entire length and have frontage roads from Hulen Street to Sycamore School Road. This recommended freeway creates very favorable impacts on transportation performance while minimizing negative impacts on residential and business neighborhoods, parks, and other community facilities. It is the least expensive option of the four freeway alignments evaluated in Phase III.

There were a variety of criteria that were used to evaluate each of the proposed alternatives. The proposed freeway alternative performs very well with respect to mobility as demonstrated by the 40 percent improvement in peak-period speed and the 156 percent improvement in peak-period corridor travel time over the 2000 existing plus committed system. This freeway also provides for a substantial decrease in the hours of delay experienced (46 percent). As a result of the proposed freeway, the cost to save one hour of delay is $0.74.

The capital cost of this alternative is $204.09 million. This cost includes lanes, bridges, frontage roads, right-of-way, relocation, and retaining walls. There are an estimated 43 residential displacements and 1,042,000 square feet of non-residential displacements associated with this alignment. Of the four freeway alignments that were considered, this proposed route has the highest benefit/cost ratio at 4.8.

EXHIBIT 5


SOUTHWEST FREEWAY
PROPOSED CONCEPT ALIGNMENT
JANUARY 1984
JACKSBORO
I-35
SH 121
7TH
LANCASTER
I-30
CAMP BOWIE
I-30
FREEWAY
VICKERY
PARK BLVD
TRINITY RIVER
VICKERY BLVD.
SOUTHWEST
UNIVERSITY
FOREST
I-35
BERRY
BELAIRE
ST.
SOUTHWEST
BRYANT IRVIN
SOUTH HULEN
BLVD.
McCART
I-20
LOOP 820
I-35
GRANBURY RD.
McCART
BLVD
ALTA MESA
DIRK RD.
RD.
SYCAMORE
W. CLEBURNE
SCHOOL RD.
COLUMBUS DR.
CITY OF FORT WORTH PLANNING DEPARTMENT
N
SCALE IN FEET
0
1000
2000

The recommended freeway alignment demonstrates a substantial improvement in safety, energy consumption, and air quality for the southwest quadrant of Fort Worth. Because the freeway would provide access to an area where travel would otherwise have to occur on arterial streets, the vehicle miles of travel on the arterial streets would decrease and so would the number of automobile accidents. The fuel consumption and vehicle emissions in the subarea would improve significantly from the levels demonstrated in the 2000 system. This improvement results from the more direct routes that would be available for travel on the freeway as well as the improved speed and efficiency of vehicle operation on the new facility. Because of the close proximity of this facility to the western and northern portions of the Fort Worth CBD, increased access to downtown is achieved through the use of direct ramping.

As is shown above, there are a number of criteria that can be highlighted to demonstrate the positive performance of this recommended transportation solution for the southwest quadrant of Fort Worth. By weighing all of these criteria, it is evident that this proposed 11.7 mile, 6-lane freeway is the best, most cost-effective solution to the transportation problems in the southwest quadrant of Fort Worth.

SOUTHWEST FORT WORTH SUBAREA STUDY - MAJOR FINDINGS AND RECOMMENDATIONS

The following eight recommendations were endorsed by the Fort Worth City Council on January 3, 1984:

1. The southwest quadrant has excellent growth potential. Achieving quality growth with a mix of low, medium, and high density development is in the best interest of Fort Worth, Crowley, Benbrook, Burleson, and Edgecliff

Village. Through careful planning, such growth would have positive economic and social impacts.

2. A freeway is needed within the next six-to-eight years to accommodate the transportation needs in the southwest quadrant that will result from the above mentioned growth. This study analyzed several non-freeway alternatives. No one or combination of non-freeway alternatives adequately serves future transportation needs.

3. Several freeway routes were studied and evaluated with respect to engineering feasibility, traffic performance, cost, and environmental impacts. The "Freeway-Eastern Alignment" alternative is recommended because of very favorable impacts on performance and cost, while minimizing negative impacts on residential and business neighborhoods, parks, the Cultural District, and other community facilities. The "Freeway-Eastern Alignment" produces benefits which best outweigh the direct and indirect costs. A "Freeway-West Alignment" through the Cultural District was also studied as a depressed facility. Compared to the eastern route, this western alternative would have practically the same traffic performance, slightly more cost, but has some significantly higher environmental costs primarily related to business displacement and impact on the existing and future integrity of the Cultural District/Botanic Garden/Trinity Park area.

However, it should be noted that the negative impact of a depressed "Freeway-West Alignment" is substantially reduced as compared to the same alternative at grade and elevated through the Cultural District.

4. It is recommended that the 11.7 mile continuous "Freeway-East Alignment" including the "South Alignment North of CBD," extending from I.H. 35/S.H. 121 southwest to Sycamore School Road be endorsed and scheduled for construction in the six-to-eight year time frame. However, if financial constraints necessitate construction phasing, it is recommended that the 8.3 mile stretch between I.H. 30 and Sycamore School Road be constructed as a first phase while assuring that the right-of-way between I.H. 35/S.H. 121 and I.H. 30 be protected for Phase II construction.

5. The need to endorse, fund, and implement this freeway is urgent because of heavy demand and also because the right-of-way is subject to development pressures in the next few years which could preclude the project's feasibility. Right-of-way purchase may be required in the near future in order to keep the project feasible.

6. Funding sources for right-of-way purchase and construction of this facility should be pursued immediately. An assessment of possible City, County, State, and Federal resources should be conducted. A tollroad facility may be feasible and should be considered as a funding option.

7. It is recommended that the freeway include special design elements to mitigate noise impacts, visual intrusion, etc. Small adjustments in route alignment, grade, construction of noise barriers, amenities to bridge and structural appearance and landscaping should be included as needed.

8. A preliminary engineering study should be conducted on the recommended alternative. This phase of study is the next logical step in a series of steps leading to implementation. Fort Worth, Tarrant County, Texas

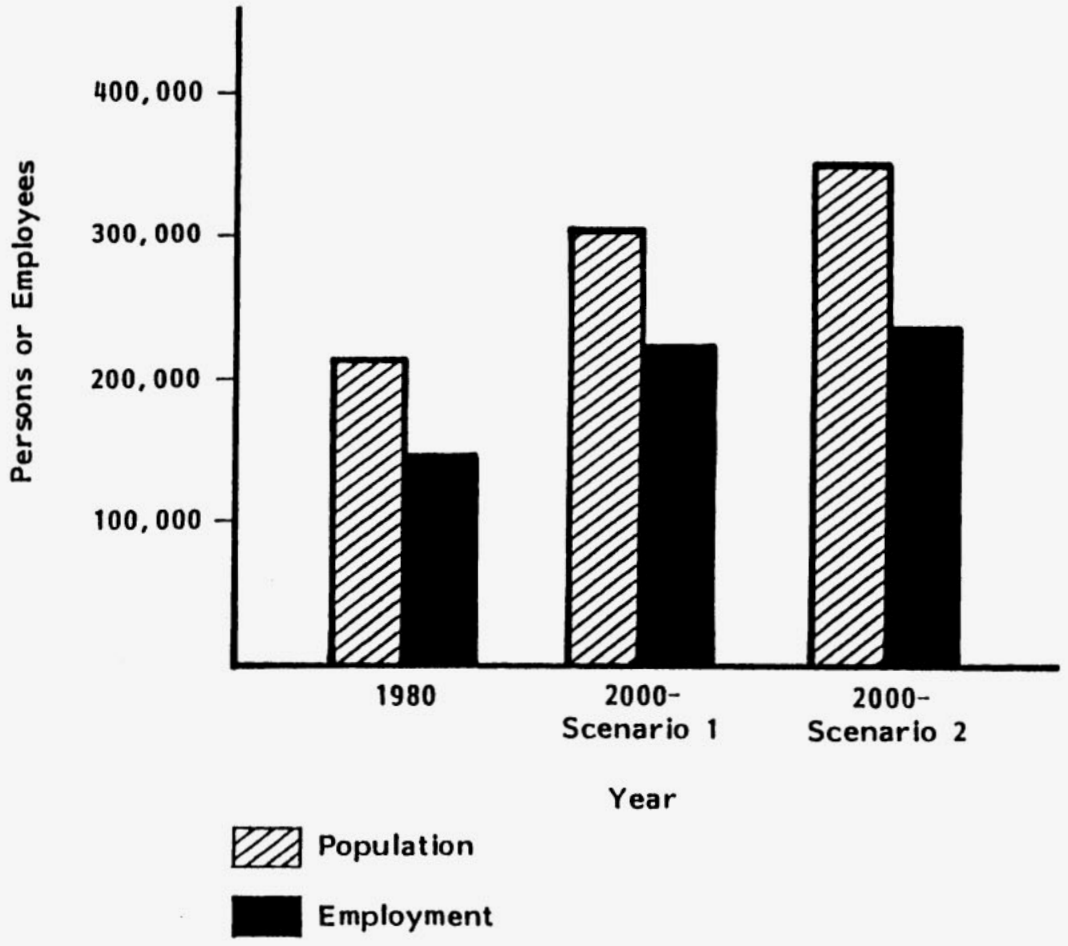
Department of Highways and Public Transportation, and Texas Turnpike Authority resources should be pursued in order to continue the process leading to the implementation of the recommended alternative.

APPENDIX 1: 1980 AND 2000 COMPARISON

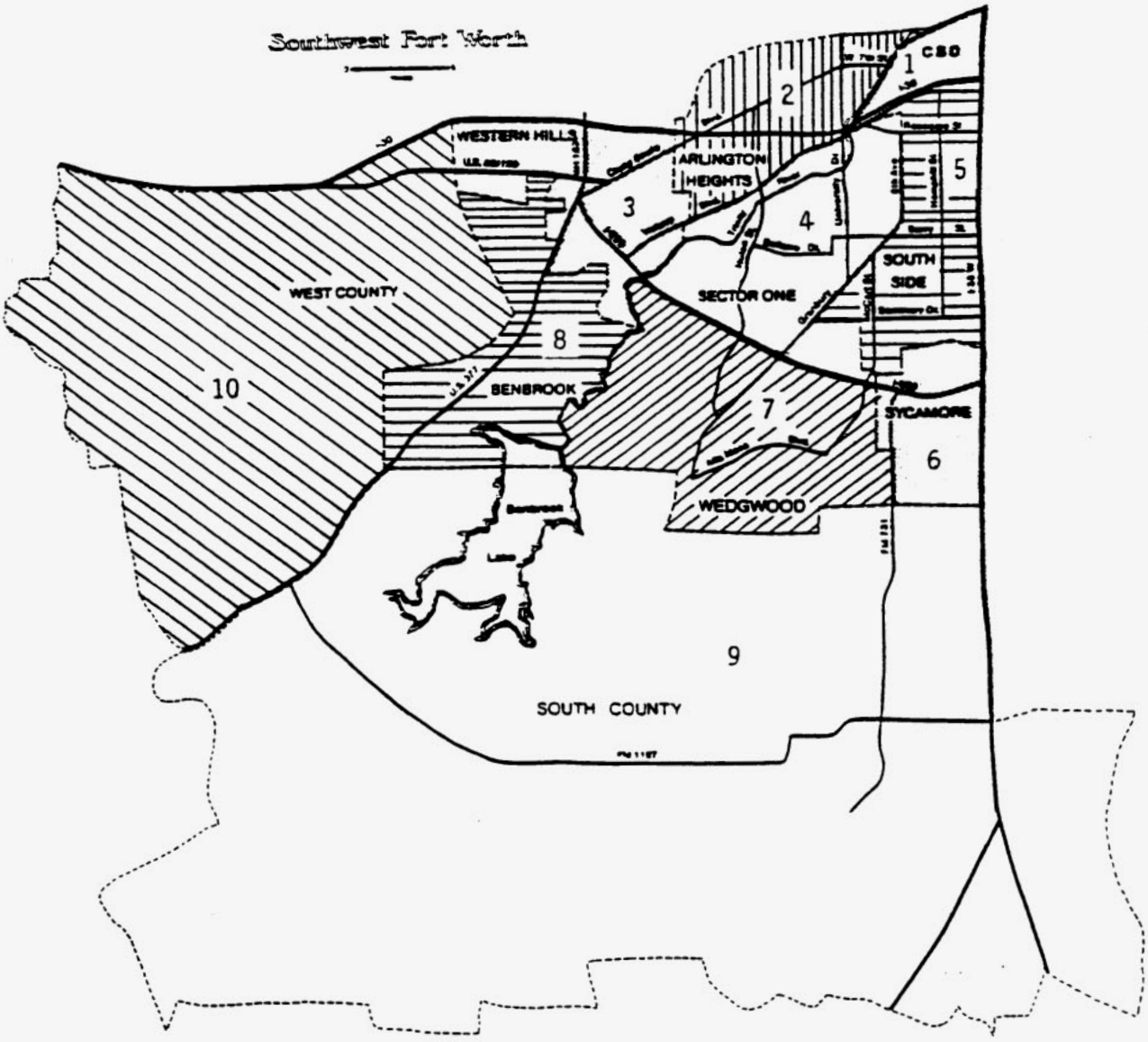
This section highlights a comparison of the 1980 and projected travel conditions for the year 2000. The data considers different population scenarios-1980, 2000-Scenario 1, and 2000-Scenario 2 and different roadway networks-1980 and 2000. The 1980 population is from the 1980 Census. The 2000-Scenario 1 population represents a conservative estimate of growth in the Southwest Quadrant. The 2000-Scenario 2 population demonstrates a more substantial amount of growth in the Subarea, especially south of I.H. 820. The roadway network used in the 1980 simulation represents what was on the ground for that year. The 2000 roadway network includes the existing system as well as those roadway projects that are committed to be in place by 2000. Some of these committed projects are:

- widening I.H. 30 from U.S. 80/U.S. 180 to I.H. 35W
- extending I.H. 20 from S.H. 183 to I.H. 30
- widening I.H. 20 from S.H. 183 to U.S. 287
- widening I.H. 820 from U.S. 80/U.S. 180 to I.H. 20
- widening I.H. 35W from Spur 280 to I.H. 20
- extending S.H. 121 from I.H. 35W to S.H. 199
- widening Berry from 6th to I.H. 35W
- extending Alta Mesa from McCart to I.H. 35W
- extending Hemphill from I.H. 20 to Risinger Road

Population and Employment in Subarea



DISTRICT DEFINITION



POPULATION BY DISTRICT

District	1980	2000 Scenario 1	2000 Scenario 2
1 - Central Business District	3,128	5,663	5,663
2 - Arlington Heights	25,492	26,532	26,532
3 - Western Hills	24,994	32,324	32,324
4 - Sector One	28,338	37,700	37,700
5 - Southside	41,282	42,825	42,825
6 - Sycamore	12,734	16,292	16,292
7 - Wedgwood	29,768	67,469	92,695*
8 - Benbrook	15,725	20,372	20,372
9 - South County/Crowley/Burleson	23,678	44,406	66,724*
10 - West County	2,475	9,266	9,266
TOTAL SUBAREA	207,614	302,849	350,393

* The Scenario 2 population increase represents additional development projected to occur by 2000 in Districts 7 and 9.

EMPLOYMENT BY DISTRICT

District	1980	2000 Scenario 1	2000 Scenario 2
1 - Central Business District	51,309	89,445	89,445
2 - Arlington Heights	18,233	22,930	22,930
3 - Western Hills	8,097	11,792	11,792
4 - Sector One	11,001	18,470	18,470
5 - Southside	36,990	46,693	46,693
6 - Sycamore	3,179	4,120	4,120
7 - Wedgwood	5,600	13,697	13,697
8 - Benbrook	1,729	2,984	2,984
9 - South County/Crowley/Burleson	6,029	7,653	7,653
10 - West County	469	595	595
TOTAL SUBAREA	142,636	218,379	228,042*

* The increase in employment (9,663) results from the 2000-Scenario 2 increase in population. A portion of this employment may be distributed outside the subarea.

DISTRICT PEAK PERIOD SPEED
(MPH)

District	1980	2000 * Scenario 1	2000 Scenario 2
1 - Central Business District	21.9	22.8	21.3
2 - Arlington Heights	26.4	25.6	21.7
3 - Western Hills	26.6	24.1	19.4
4 - Sector One	24.9	21.3	15.0
5 - Southside	24.2	24.6	21.1
6 - Sycamore	36.1	36.0	25.9
7 - Wedgwood	28.9	28.0	11.4
8 - Benbrook	23.0	29.9	23.3
9 - South County/Crowley/Burleson	45.0	39.0	21.1
10 - West County	49.5	47.7	47.2
TOTAL SUBAREA	27.7	27.3	17.9

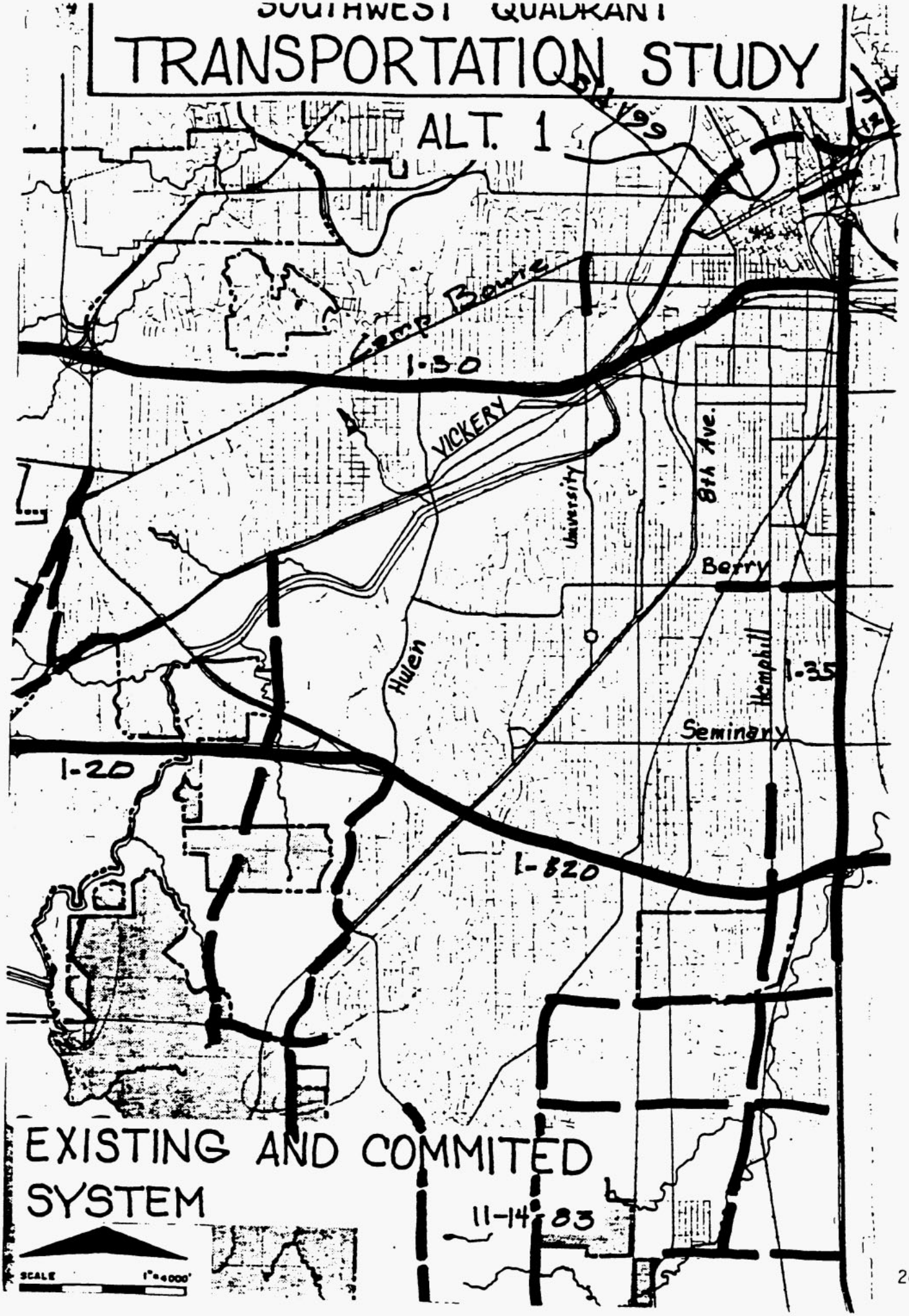
* The roadway network used for the 2000 evaluation represents the existing plus committed system only. The existing plus committed system is a substantial improvement over the 1980 roadway system. The speeds shown under Scenario 1 are significantly higher than would be exhibited without the committed projects.

APPENDIX 2: DESCRIPTION OF TRANSPORTATION ALTERNATIVES

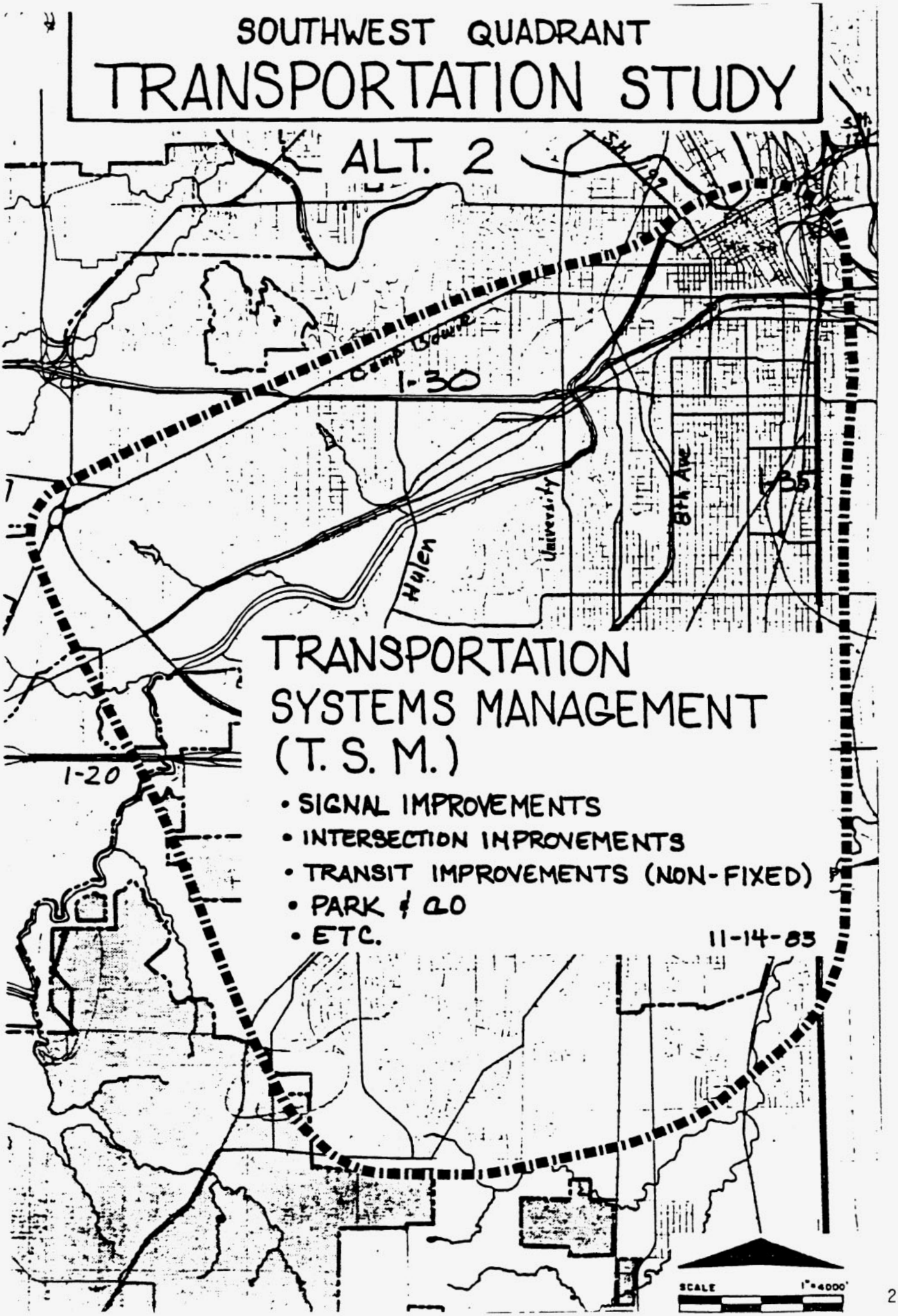
This section contains maps describing the major alternatives analyzed and evaluated in this study. The specific alternatives are described as follows:

Alternative(s)	Map Description
1	Existing and Committed System
2	Transportation System Management (TSM)
3	TSM + Parkway #1
4	TSM + Parkway #2
5	TSM + Parkway #3
6	Tollroad
7, 8, 9, 10	Freeway--East
11, 12, 13, 14, 15, 16	Freeway--West
17	Rail, Express, and Feeder Bus
18	20/30 Connection

Please note that several combinations of facility alignment, length, and downtown approach were examined for some of these alternatives.


SOUTHWEST QUADRANT
TRANSPORTATION STUDY
ALT. 1
Camp Bowie
I-30
VICKERY
University
8th Ave.
Berry
Hulen
Hemphill
I-35
Seminary
I-20
I-820
EXISTING AND COMMITED
SYSTEM
11-14-83
SCALE
1"=4000'

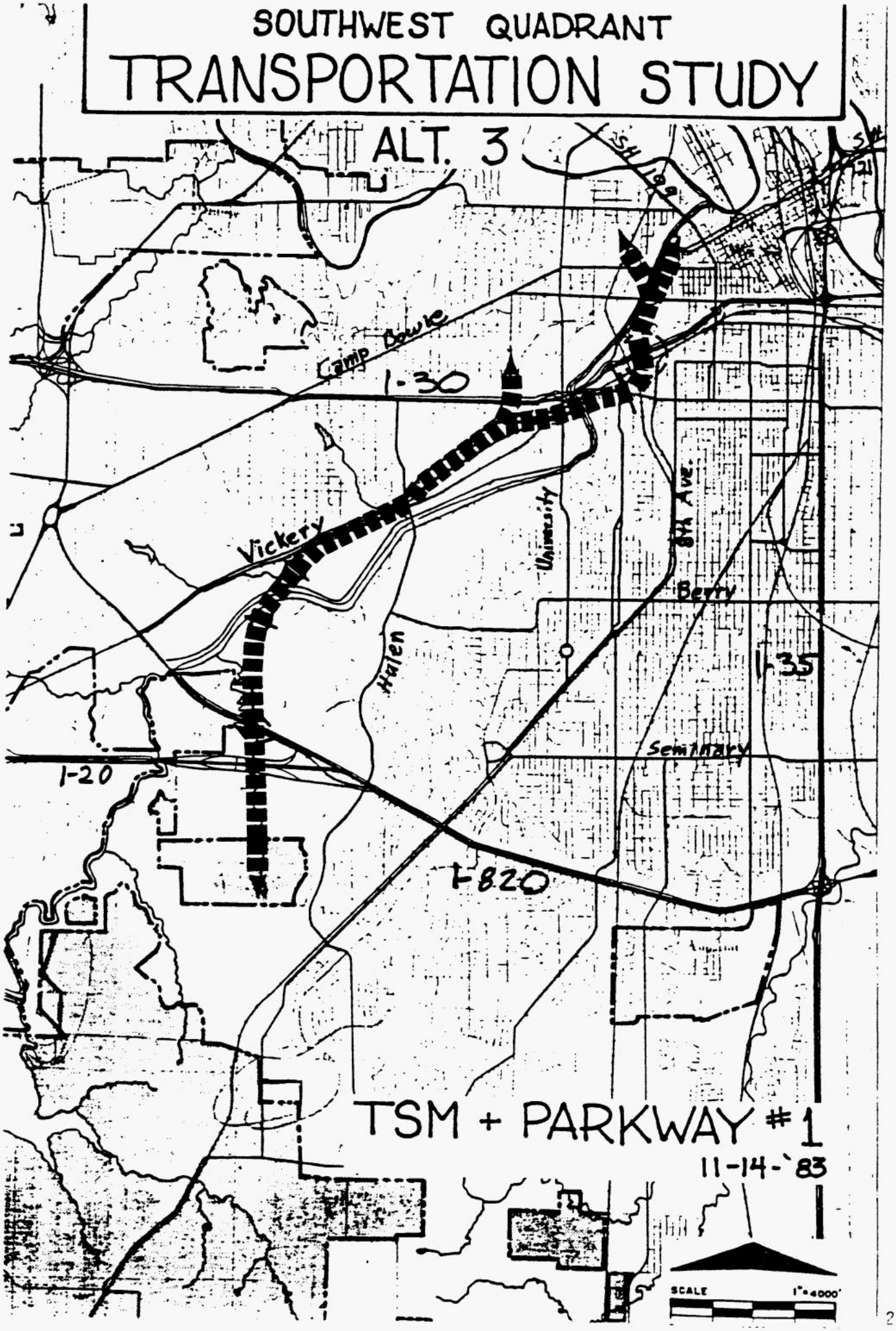
SOUTHWEST QUADRANT TRANSPORTATION STUDY



TRANSPORTATION SYSTEMS MANAGEMENT (T. S. M.)

- SIGNAL IMPROVEMENTS
- INTERSECTION IMPROVEMENTS
- TRANSIT IMPROVEMENTS (NON-FIXED)
- PARK & RIDE
- ETC.

11-14-85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ALT. 3
Camp Bowie
I-30
Vickery
University
8th Ave.
Berry
Hulen
I-35
Seminary
I-20
I-820
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11-14-'83
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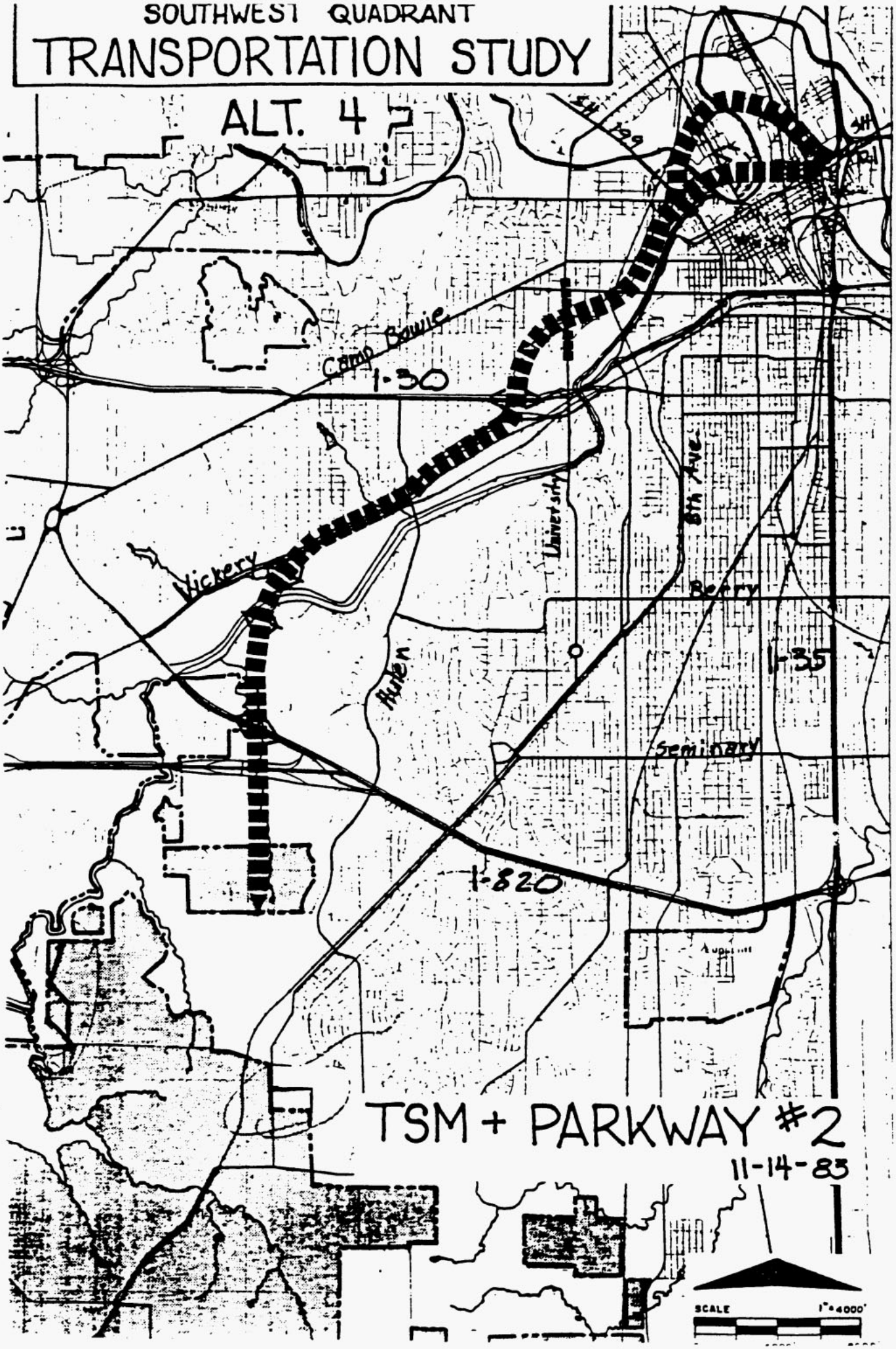
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I-820
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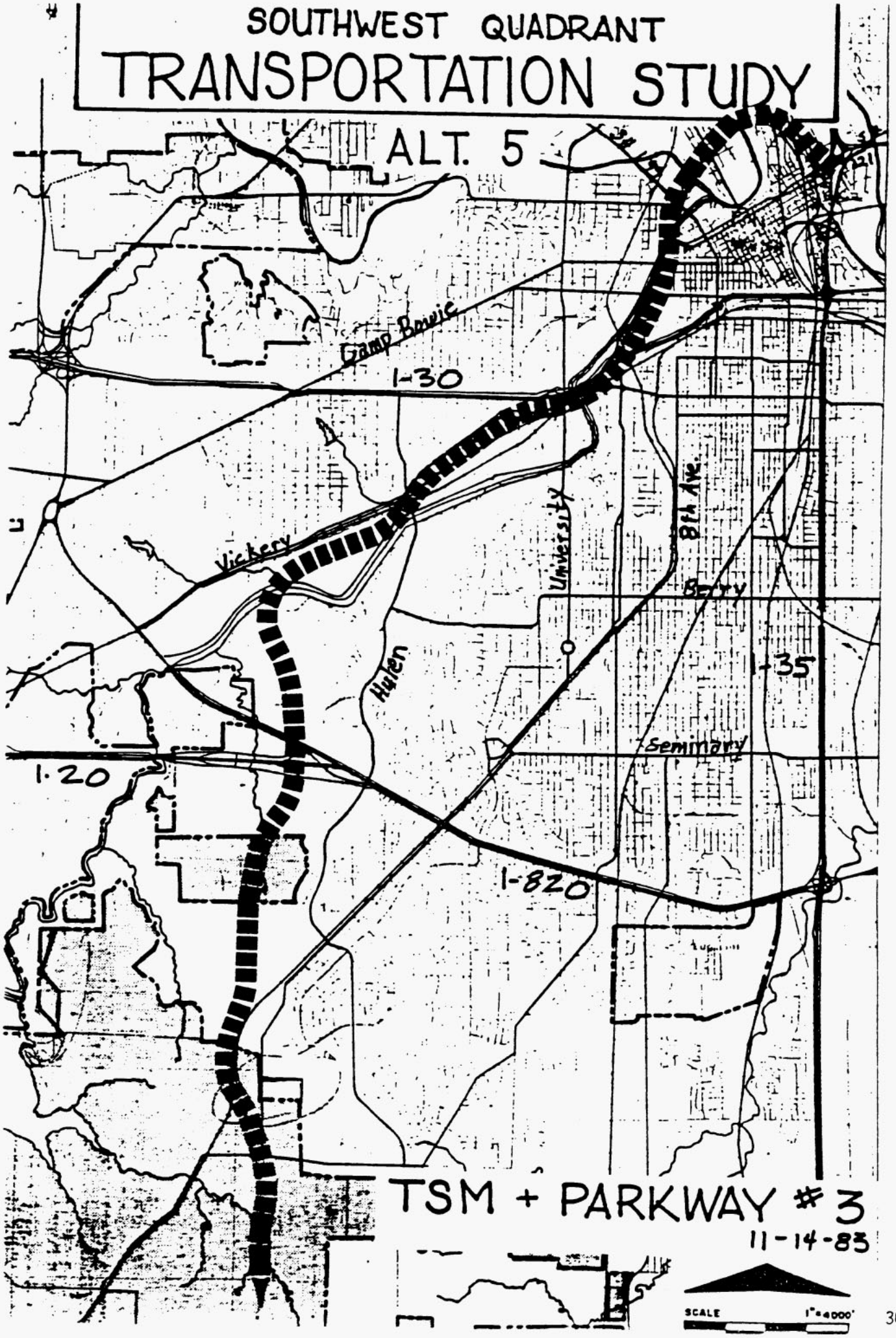
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TRANSPORTATION STUDY
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I-30
Vickery
University
8th Ave.
Berry
I-35
Hulen
Seminary
I-20
I-820
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11-14-83
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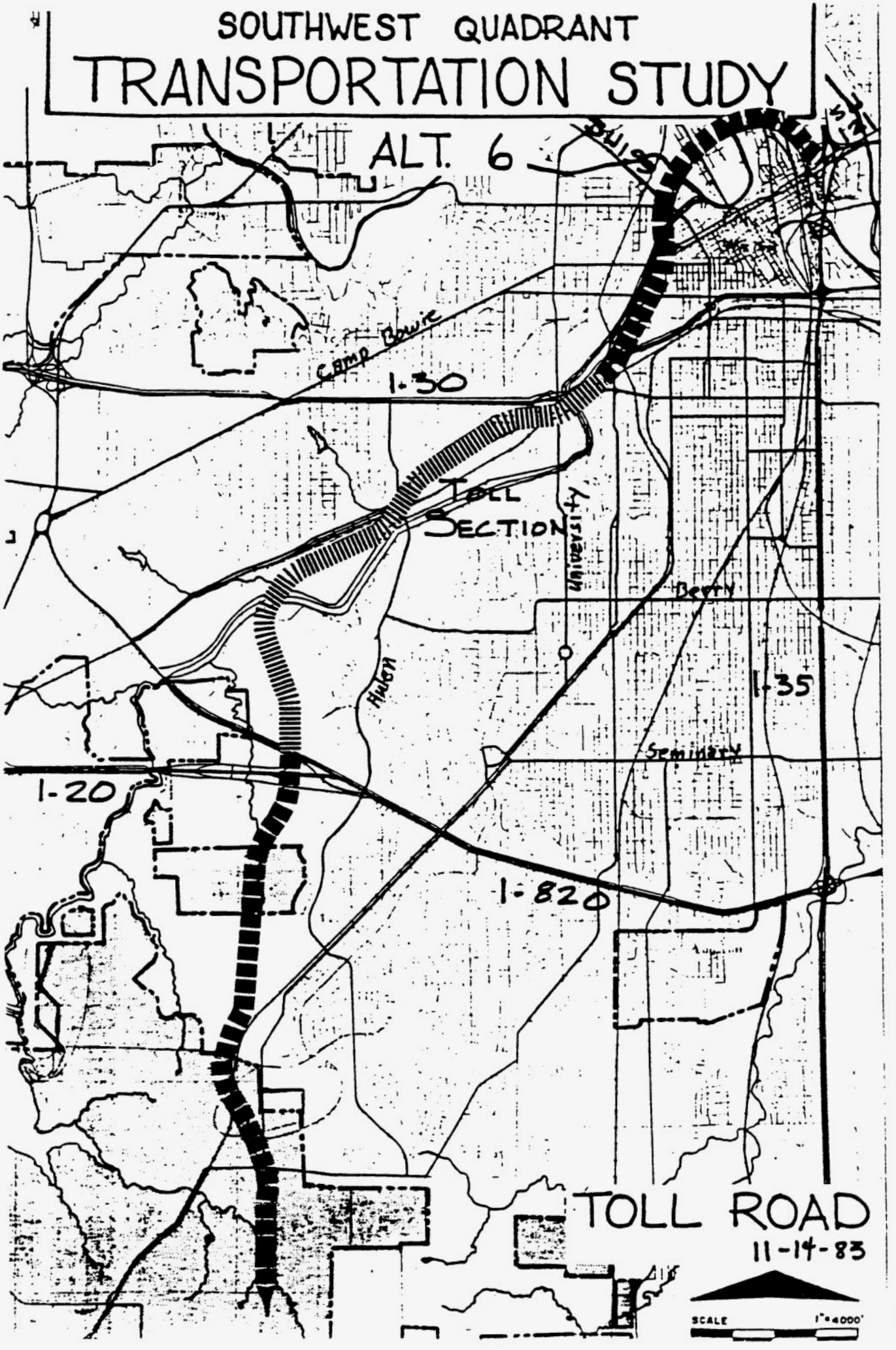
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TRANSPORTATION STUDY
ALT. 6
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TOLL SECTION
University
Berry
Hulen
I-35
Seminary
I-20
I-820
TOLL ROAD
11-14-83
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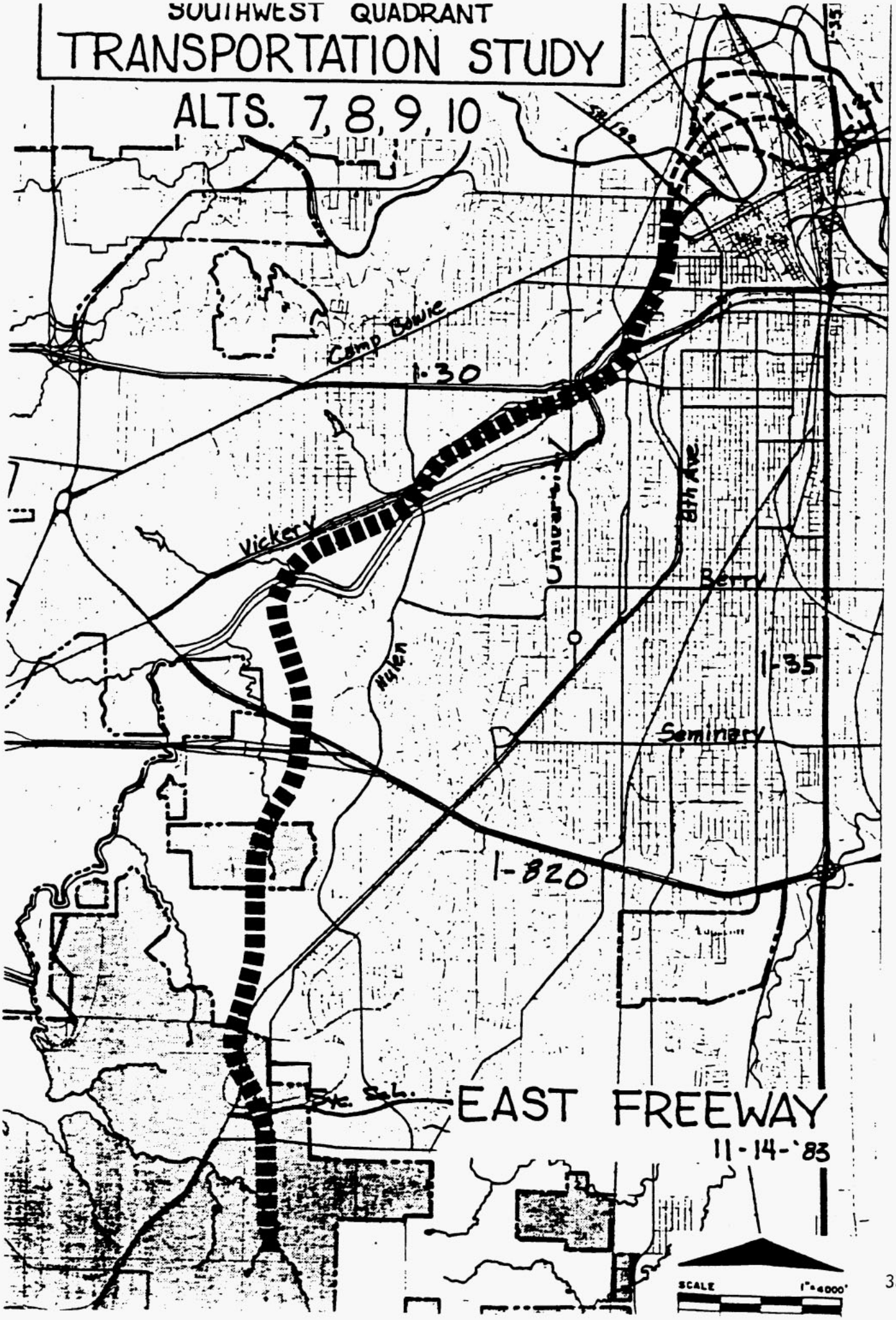
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TRANSPORTATION STUDY
ALTS. 7, 8, 9, 10
Camp Bowie
I-30
Vickery
University
8th Ave
Berry
Hulen
I-35
Seminary
I-820
EAST FREEWAY
11-14-'83
SCALE
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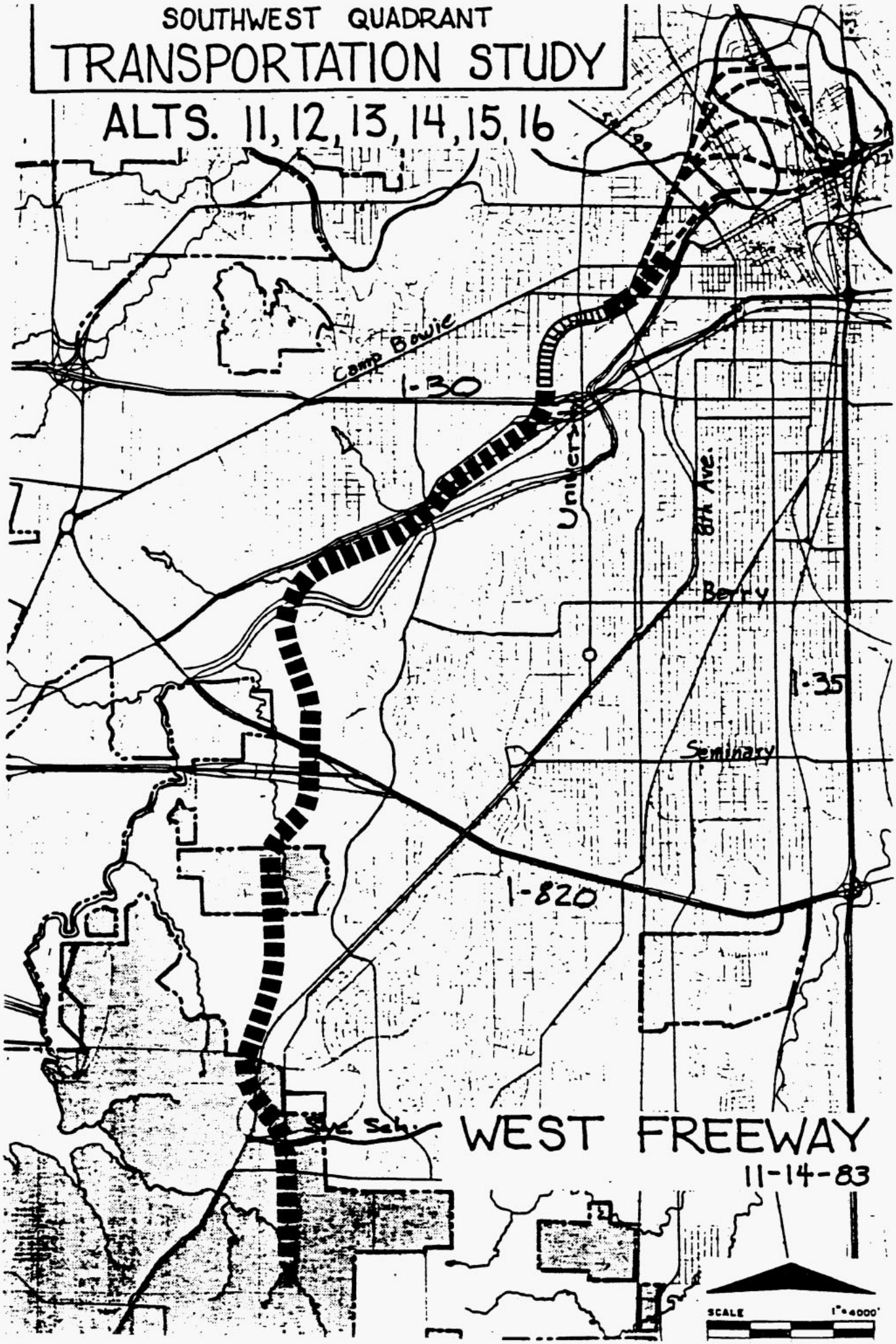
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TRANSPORTATION STUDY
ALTS. 11, 12, 13, 14, 15, 16
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I-30
University
8th Ave.
Berry
I-35
Seminary
I-820
WEST FREEWAY
11-14-83
SCALE
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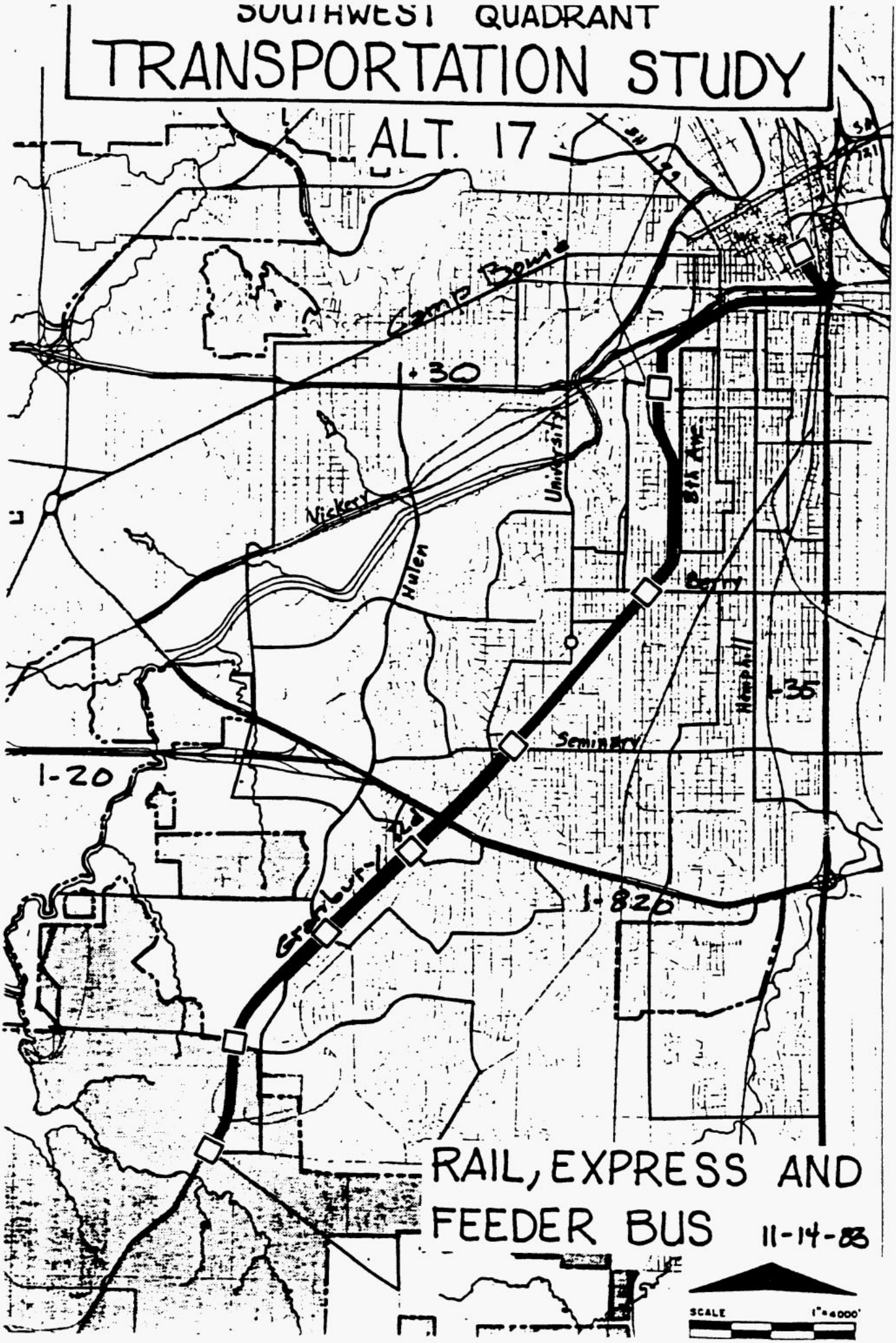
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TRANSPORTATION STUDY
ALT. 17
Camp Bowie
I-30
University
Nickery
Hulen
8th Ave
Berry
I-35
Seminary
I-20
I-820
RAIL, EXPRESS AND
FEEDER BUS
11-14-83
SCALE
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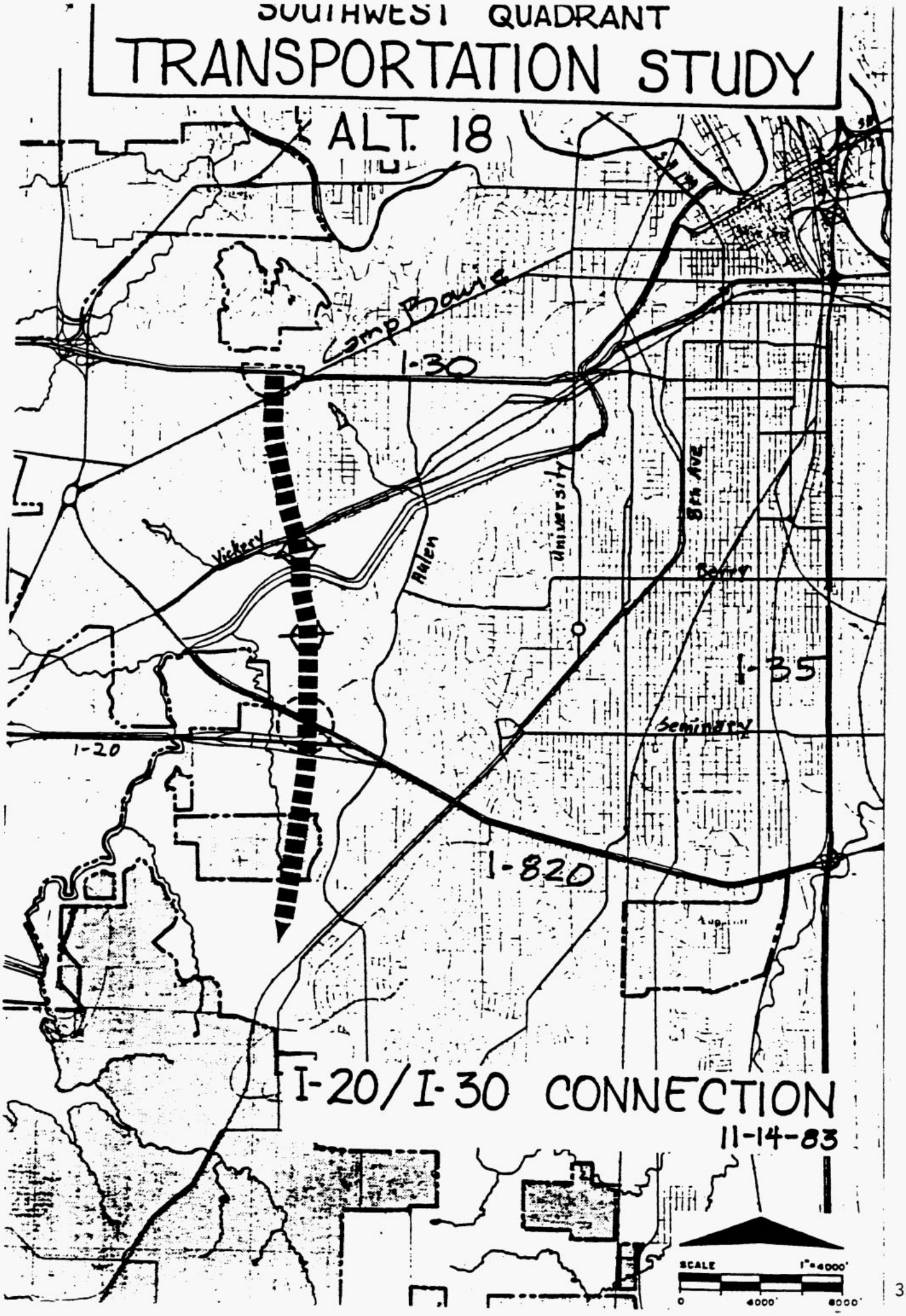
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TRANSPORTATION STUDY
ALT. 18
Camp Bowie
I-30
Vickery
Altem
University
8th Ave
Berry
I-35
Seminary
I-20
I-820
I-20/I-30 CONNECTION
11-14-83
SCALE
1"=4000'
0
4000'
8000'

APPENDIX 3: PHASE I EVALUATION

This section contains an assessment of each alternative developed in the study. Transportation performance measures were used to eliminate alternatives that were not effective in improving mobility.

PHASE I EVALUATION OF ALTERNATIVES

REVIEW

Freeway from I.H. 35W to ISA Boundary -

East/Far North - Low Volume
East/North - O.K., stop at Sycamore School
East/South - O.K., stop at Sycamore School
West/North - O.K., stop at Sycamore School
West/South - O.K., stop at Sycamore School

Freeway without I.H. 30 - S.H. 199 Section

East/North - Low Volume
West/North - Low Volume

Freeway without I.H. 30 - I.H. 35W Section

East - O.K., stop at Sycamore School

West - O.K., stop at Sycamore School

Far West - High residential displacements, difficult to interchange with I.H. 30, misdirection of travel, no extension possible

Tollroad between I.H. 30 and I.H. 20 - O.K., Parkway or Freeway South of I.H. 20

Parkway from I.H. 35W to Sycamore School - Too Expensive

Parkway from I.H. 30 to Sycamore School
East - Duplication with Parkway/TSM + Alternative
West - Duplication with Parkway/TSM + Alternative

Parkway using Bryant Irvin, Vickery and M.H. 50 - Need Existing Capacity

Parkway using Bryant Irvin, Vickery and Forest Park - Need Existing Capacity

Parkway/TSM + Alternative (Parkway I.H. 30 to Sycamore School)
East - O.K.
West - O.K.

Rail (8th/Granbury) - Low Ridership

Busway (8th/Granbury) - Low Ridership

SUMMARY: Remaining Alternatives for Phase II Screening

Existing Plus Committed
Freeway (East/North) from I.H. 35W to Sycamore School
Freeway (West/North) from I.H. 35W to Sycamore School
Freeway (East/South) from I.H. 35W to Sycamore School
Freeway (West/South) from I.H. 35W to Sycamore School
Freeway (East) - South of I.H. 30
Freeway (West) - South of I.H. 30
Tollroad south of I.H. 30
Parkway/TSM + (West) from I.H. 30 to Sycamore School
Parkway/TSM + (East) from I.H. 30 to Sycamore School

APPENDIX 4: PHASE II EVALUATION

This section contains the evaluation of the 10 most effective transportation alternatives developed for this subarea. This Phase II evaluation includes the detailed examination of the cost as well as the mobility aspects of each of the remaining alternatives.

COST COMPONENTS:

- LANES
- BRIDGES
- FRONTAGE ROADS
- TOLL BOOTHS (IF APPLICABLE)
- RIGHT-OF-WAY
- RELOCATION
- OPERATING
- MAINTENANCE
- RETAINING WALLS (IF APPLICABLE)

LEVEL OF SERVICE

A

D

B

E

C

F

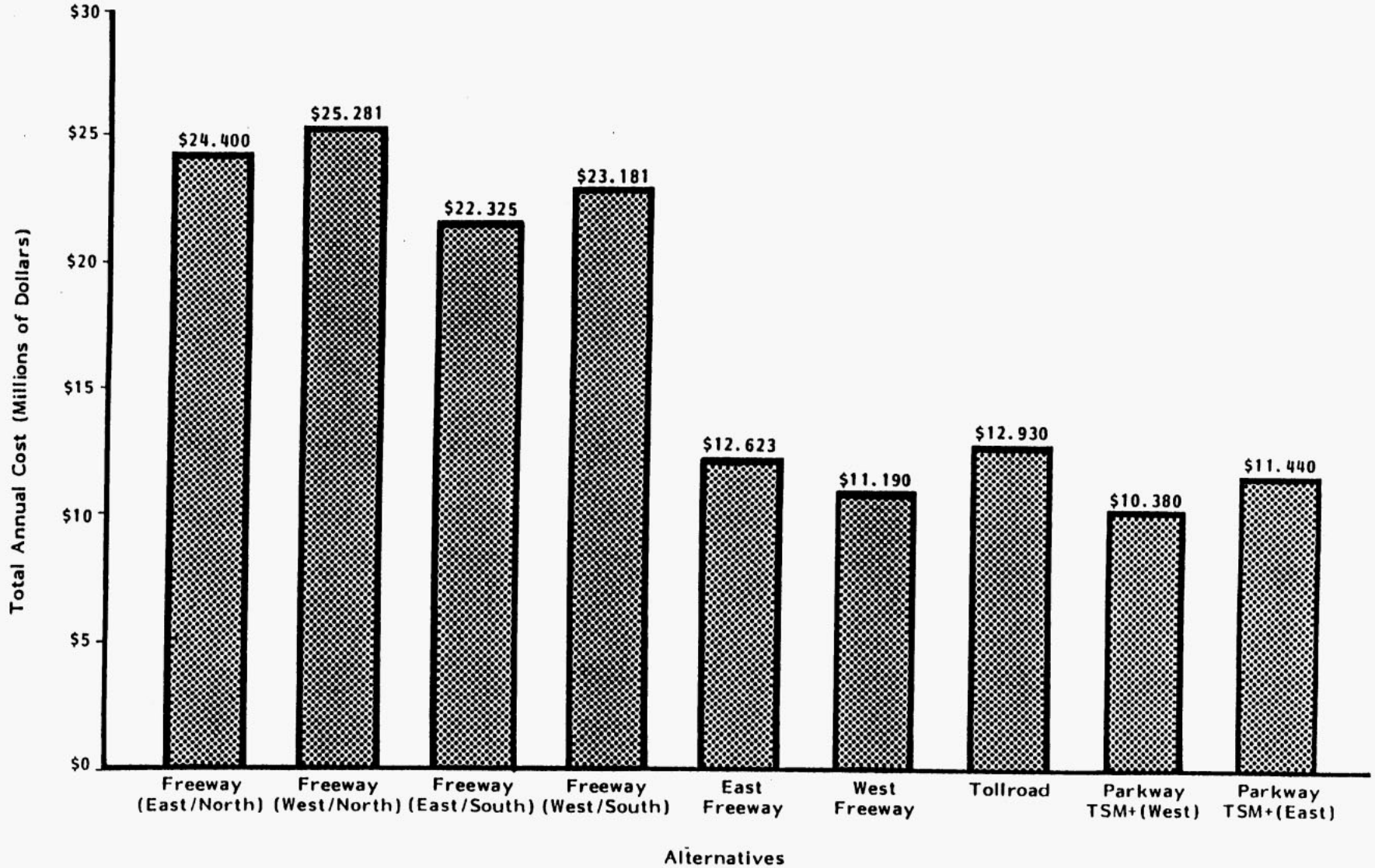
Source: John E. Baerwald, ed., Transportation and Traffic Engineering Handbook (Englewood Cliffs, N.J.: Institute of Transportation Engineers, 1976), pp. 316-317.

IMPACT OF SELECTED ALTERNATIVES - SCENARIO 2 ($1983)

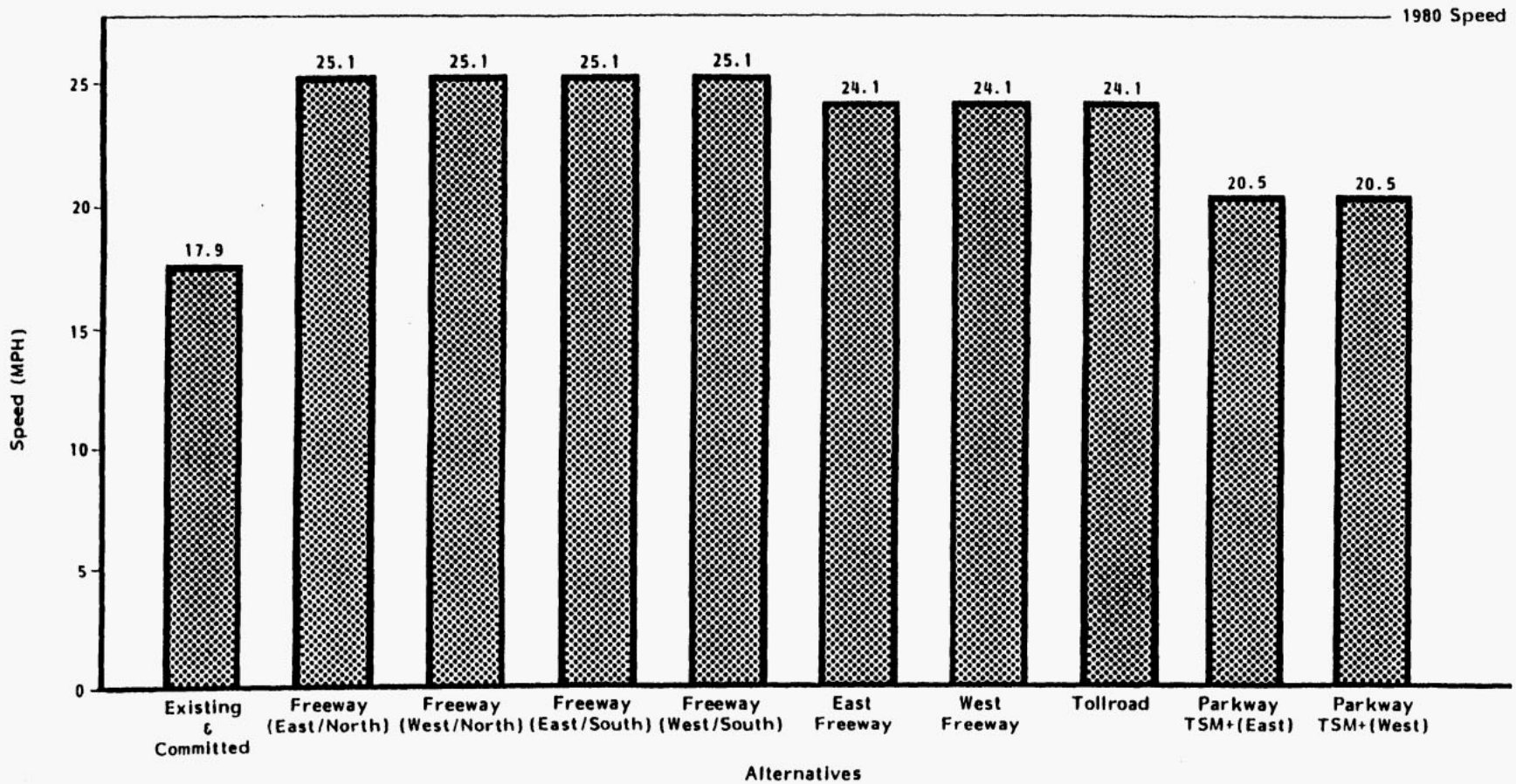
ALTERNATIVES	Total Annual Cost (Millions)	Vehicle Miles of Travel on Facility (in 1000's)	Energy Consumption-Gallons (in 1000's)	Percent of Subarea Roadways at LOS E and F	Total Vehicle Hours of Delay (in 1000's)	Peak Period Speed (mph)	Average Peak Period Travel Time (min.)
Existing Plus Committed	----	----	138,700	22.9	46,990	17.9	28.7
Freeway (East/North) (35-SS)	24.400	356,568	122,700	16.0	25,430	25.1	20.5
Freeway (West/North) (35-SS)	25.281	356,568	122,700	16.0	25,430	25.1	20.5
Freeway (East/South) (35-SS)	22.325	374,809	122,700	15.2	25,420	25.1	20.5
Freeway (West/South) (35-SS)	23.181	374,809	122,700	15.2	25,420	25.1	20.5
Freeway (East) (30-SS)	12.623	212,925	126,800	21.0	27,240	24.1	21.3
Freeway (West) (30-SS)	11.190	212,925	126,800	21.0	27,240	24.1	21.3
Tollroad (30-20)	12.930	183,039	126,900	21.0	27,270	24.1	21.3
Parkway/TSM + (West) (30-SS)	10.380	125,817	140,400	18.1	39,671	20.5	25.1
Parkway/TSM + (East) (30-SS)	11.440	125,817	140,400	18.1	39,671	20.5	25.1

SS=Sycamore School Road

Total Annual Cost



Peak Period Subarea Speed



RELATIVE IMPACT OF EACH ALTERNATIVE ($1983)

ALTERNATIVES	Total Annual Cost (Millions)	Vehicle Miles of Travel on Facility (in 1000's)	Energy Consumption Saved-Gallons (in 1000's)	Percent of Subarea Roadways at LOS E and F Improved	Total Vehicle Hours of Delay Reduced (in 1000's)	Peak Period Speed Improved (mph)	Average Peak Period Travel Time Saved (min.)
Existing Plus Committed	----	----	----	----	----	---	---
Freeway (East/North) (35-SS)	24.400	356,568	16,000	6.9	21,560	7.2	8.2
Freeway (West/North) (35-SS)	25.281	356,568	16,000	6.9	21,560	7.2	8.2
Freeway (East/South) (35-SS)	22.325	374,809	16,000	7.7	21,570	7.2	8.2
Freeway (West/South) (35-SS)	23.181	374,809	16,000	7.7	21,570	7.2	8.2
Freeway (East) (30-SS)	12.623	212,925	11,900	1.9	19,750	6.2	7.4
Freeway (West) (30-SS)	11.190	212,925	11,900	1.9	19,750	6.2	7.4
Tollroad (30-20)	12.930	183,039	11,800	1.9	19,720	6.2	7.4
Parkway/TSM + (West) (30-SS)	10.380	125,817	*	4.8	7,319	2.6	3.6
Parkway/TSM + (East) (30-SS)	11.440	125,817	*	4.8	7,319	2.6	3.6

* does not improve conditions

SS=Sycamore School Road

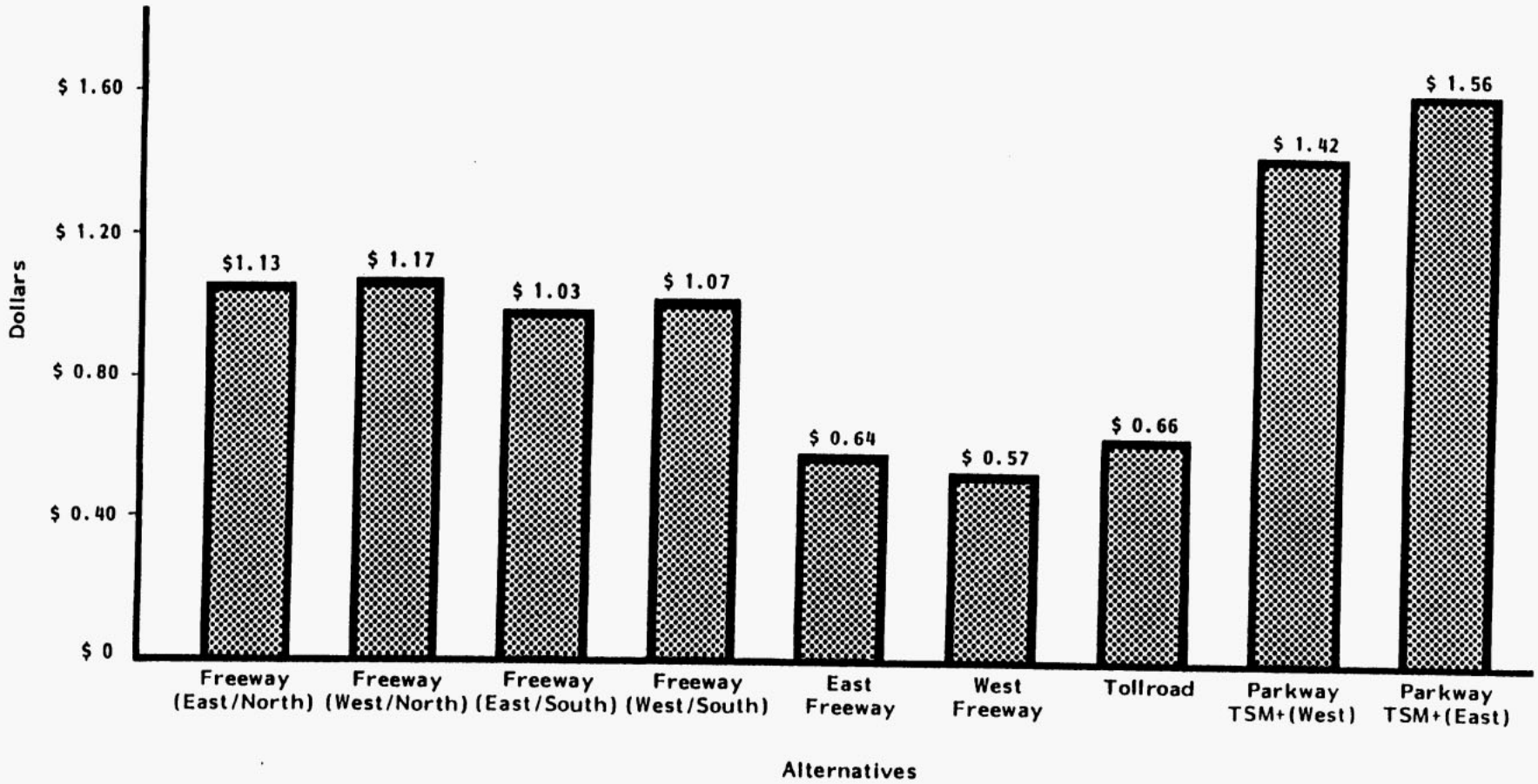
COST EFFECTIVENESS OF SELECTED ALTERNATIVES ($1983)

ALTERNATIVES	Cost Per Vehicle Mile of Travel on Facility	Cost Per Gallon of Gasoline Saved	Cost Per Percent of Subarea Roadways at LOS E and F Improved (Millions)	Cost Per Vehicle Hour Saved	Cost Divided by Subarea Miles Per Hour Improved (Millions)	Cost Per Subarea Minute of Travel Time Saved (Millions)
Existing Plus Committed	---	---	---	---	---	---
Freeway (East/North) (35-SS)	$ 0.068	$ 1.53	$ 3.536	$ 1.13	$ 3.389	$ 2.974
Freeway (West/North) (35-SS)	$ 0.071	$ 1.58	$ 3.660	$ 1.17	$ 3.511	$ 3.083
Freeway (East/South) (35-SS)	$ 0.059	$ 1.39	$ 2.900	$ 1.03	$ 3.101	$ 2.723
Freeway (West/South) (30-SS)	$ 0.062	$ 1.45	$ 3.010	$ 1.07	$ 3.219	$ 2.827
Freeway (East) (30-SS)	$ 0.059	$ 1.06	$ 6.644	$ 0.64	$ 2.036	$ 1.706
Freeway (West) (30-SS)	$ 0.053	$ 0.94	$ 5.890	$ 0.57	$ 1.805	$ 1.512
Tollroad (30-20)	$ 0.071	$ 1.10	$ 6.805	$ 0.66	$ 2.085	$ 1.747
Parkway/TSM + (West) (30-SS)	$ 0.083	*	$ 2.163	$ 1.42	$ 3.992	$ 2.883
Parkway/TSM + (East) (30-SS)	$ 0.091	*	$ 2.383	$ 1.56	$ 4.400	$ 3.178

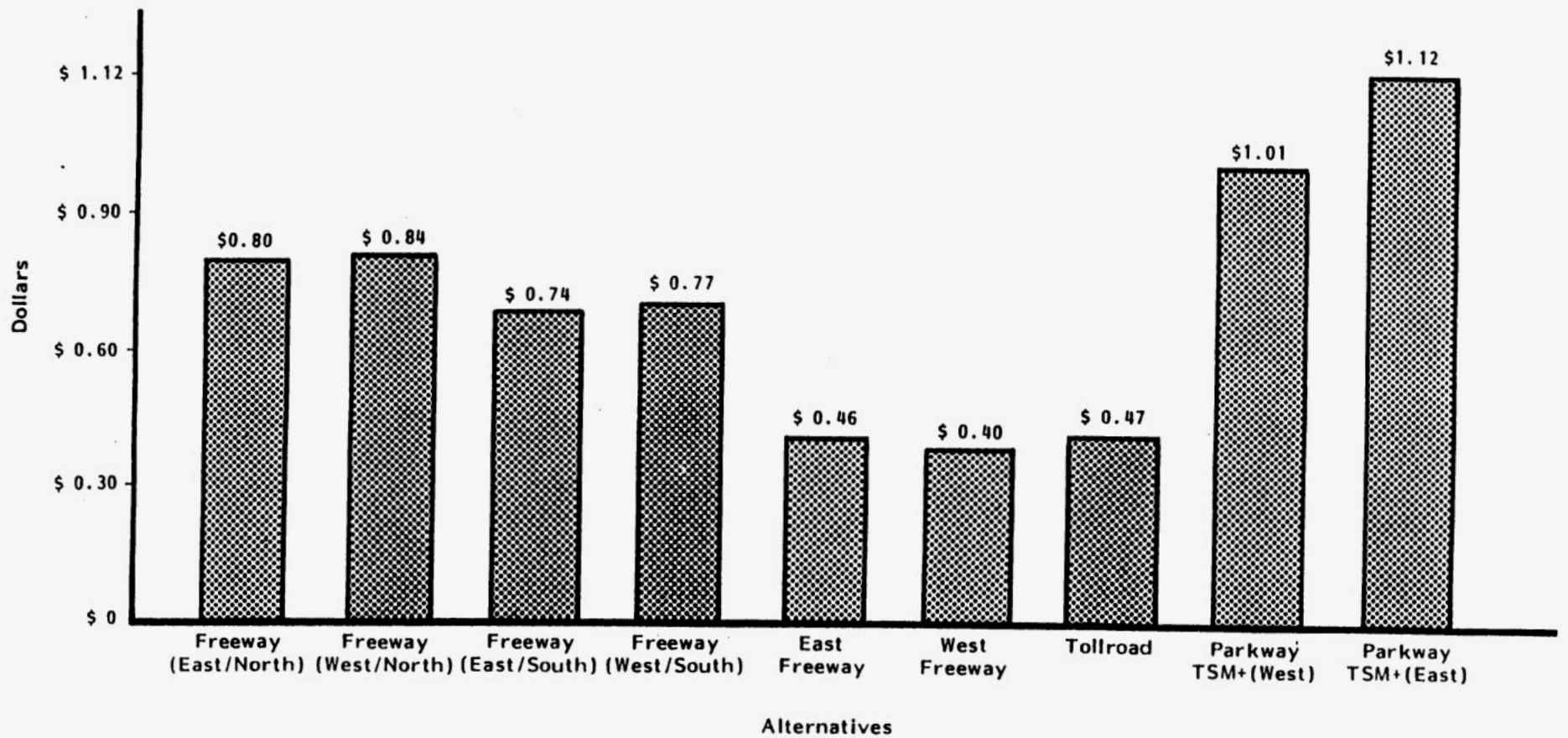
* does not improve conditions

SS=Sycamore School Road

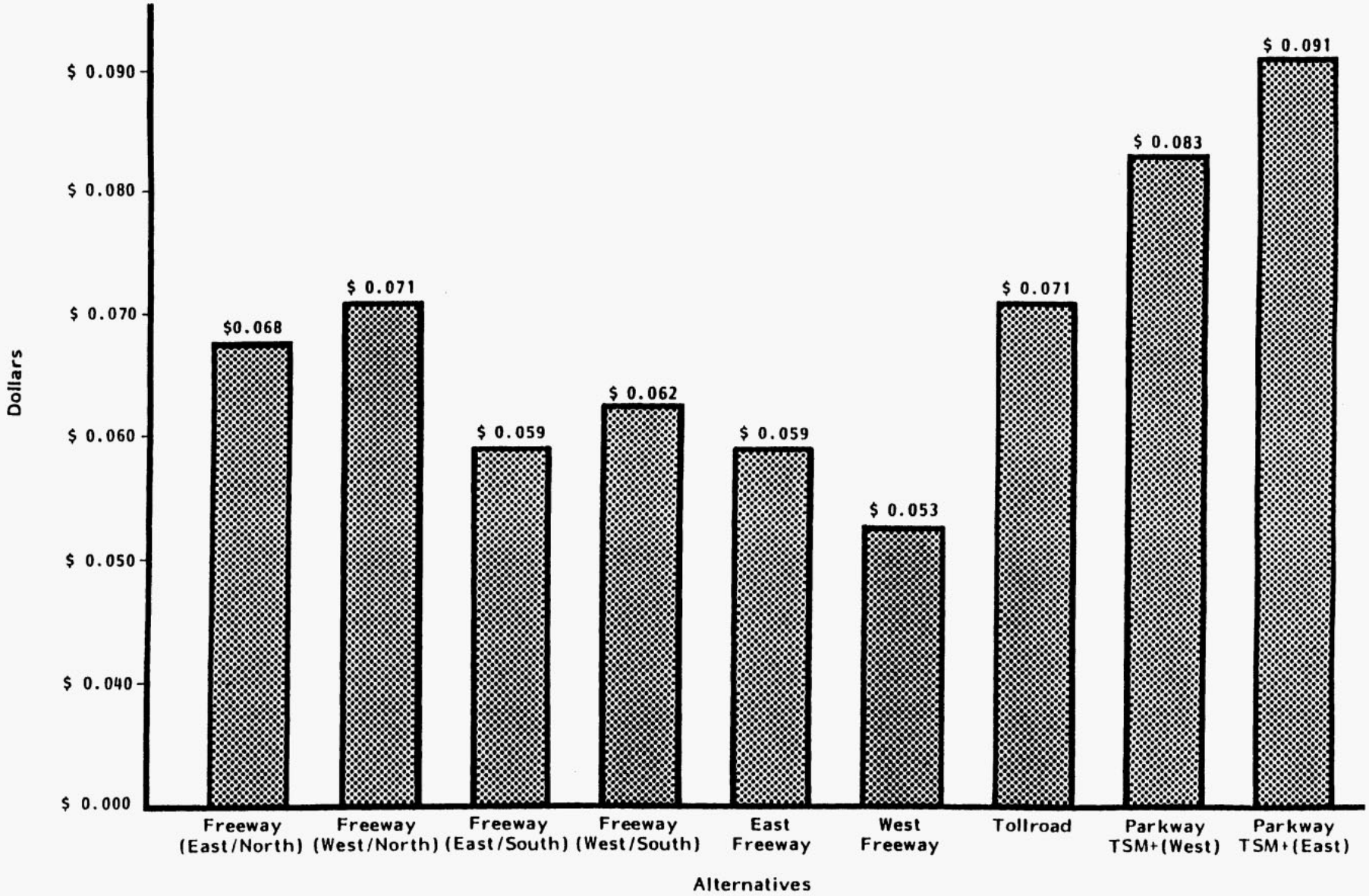
Cost Per Vehicle Hour of Delay Saved



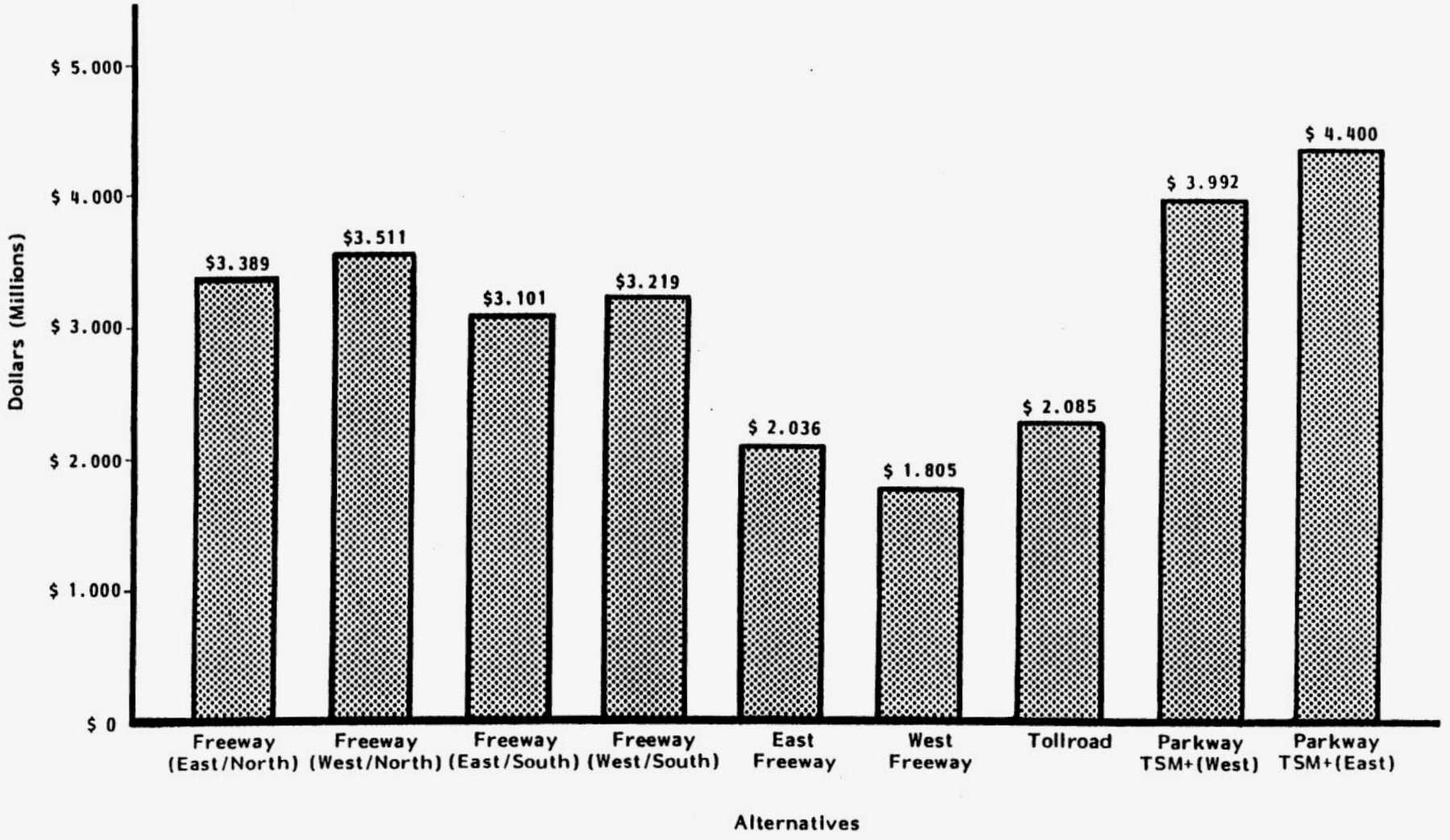
Cost Per Person Hour of Delay Saved



Cost Per Vehicle Mile of Travel on Facility



Cost Divided by Subarea Miles Per Hour Improved



BENEFIT-COST RATIO

Alternative	Ratio*
Freeway (East/North) (35-SS)	4.4
Freeway (West/North) (35-SS)	4.2
Freeway (East/South) (35-SS)	4.8
Freeway (West/South) (35-SS)	4.6
Freeway (East) (30-SS)	7.7
Freeway (West) (30-SS)	8.7
Tollroad (30-20)	7.5
Parkway/TSM + (West) (30-SS)	3.5
Parkway/TSM + (East) (30-SS)	3.2

* Benefits are determined by the vehicle hours of delay reduced performance measure and assumes 1.4 persons per vehicle and a per capita wage rate of $3.53 per hour. A value greater than 1.0 indicates a cost effective project.

PHASE II EVALUATION

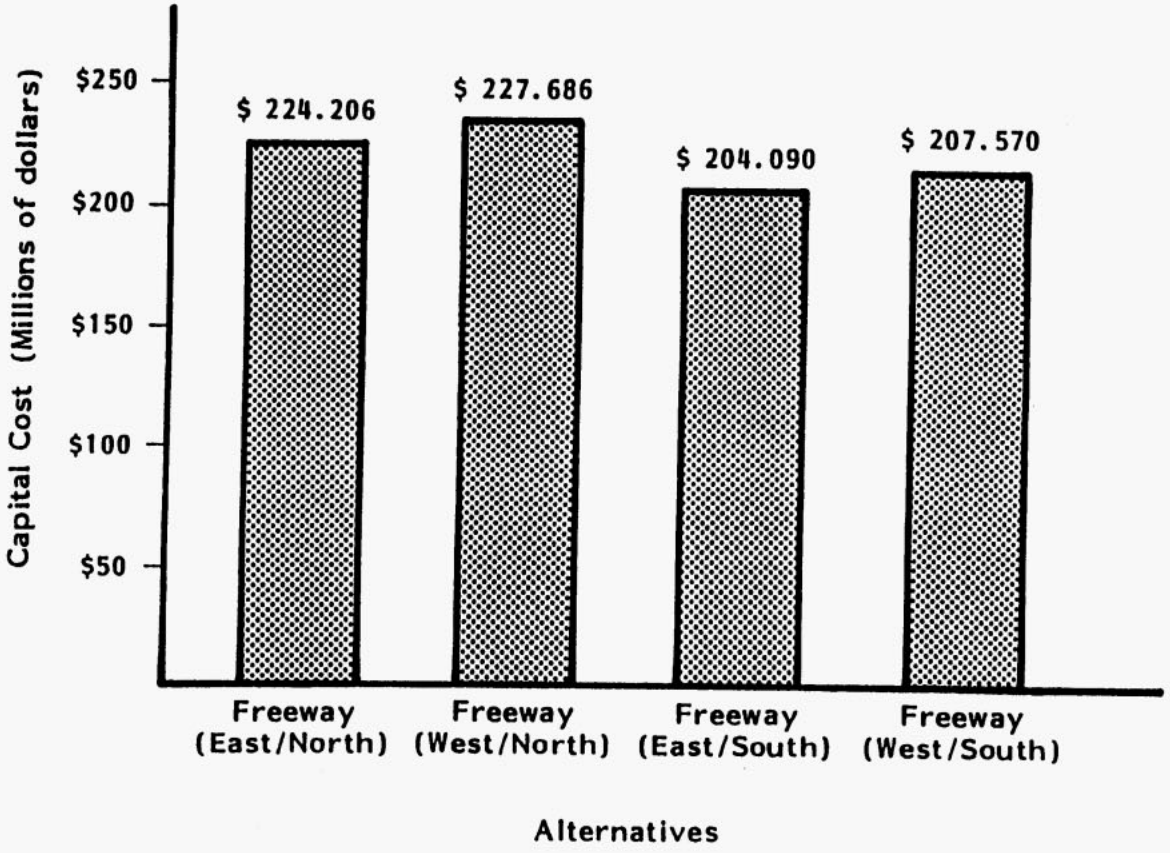
ALTERNATIVE	STATUS
Existing Plus Committed	Not selected for further evaluation due to unacceptable performance.
Freeway (East/North) (35-SS)	Selected for further evaluation.
Freeway (West/North) (35-SS)	Selected for further evaluation.
Freeway (East/South) (35-SS)	Selected for further evaluation.
Freeway (West/South) (35-SS)	Selected for further evaluation.
Freeway (East) (30-SS)	Not selected for further evaluation as a separate alternative. It will be reexamined as a phasing option.
Freeway (West) (30-SS)	Not selected for further evaluation as a separate alternative. It will be reexamined as a phasing option.
Tollroad (30-20)	Not selected for further evaluation as a separate alternative. It will be examined as a funding option.
Parkway/TSM + (West) (30-SS)	Not selected for further evaluation due to unacceptable performance.
Parkway/TSM + (East) (30-SS)	Not selected for further evaluation due to unacceptable performance.

* A full length freeway from I.H. 35W to Sycamore School Road with a tollroad portion between I.H. 30 and I.H. 20 demonstrates a revenue-to-cost ratio 1.20 under Scenario 2 conditions. This analysis was conducted for an assumed 30 year bond period at 11 percent. A $0.08 per vehicle mile toll was assumed in place for the first 7 years of operation and increased to $0.10 for the final 23 years of financed operation.

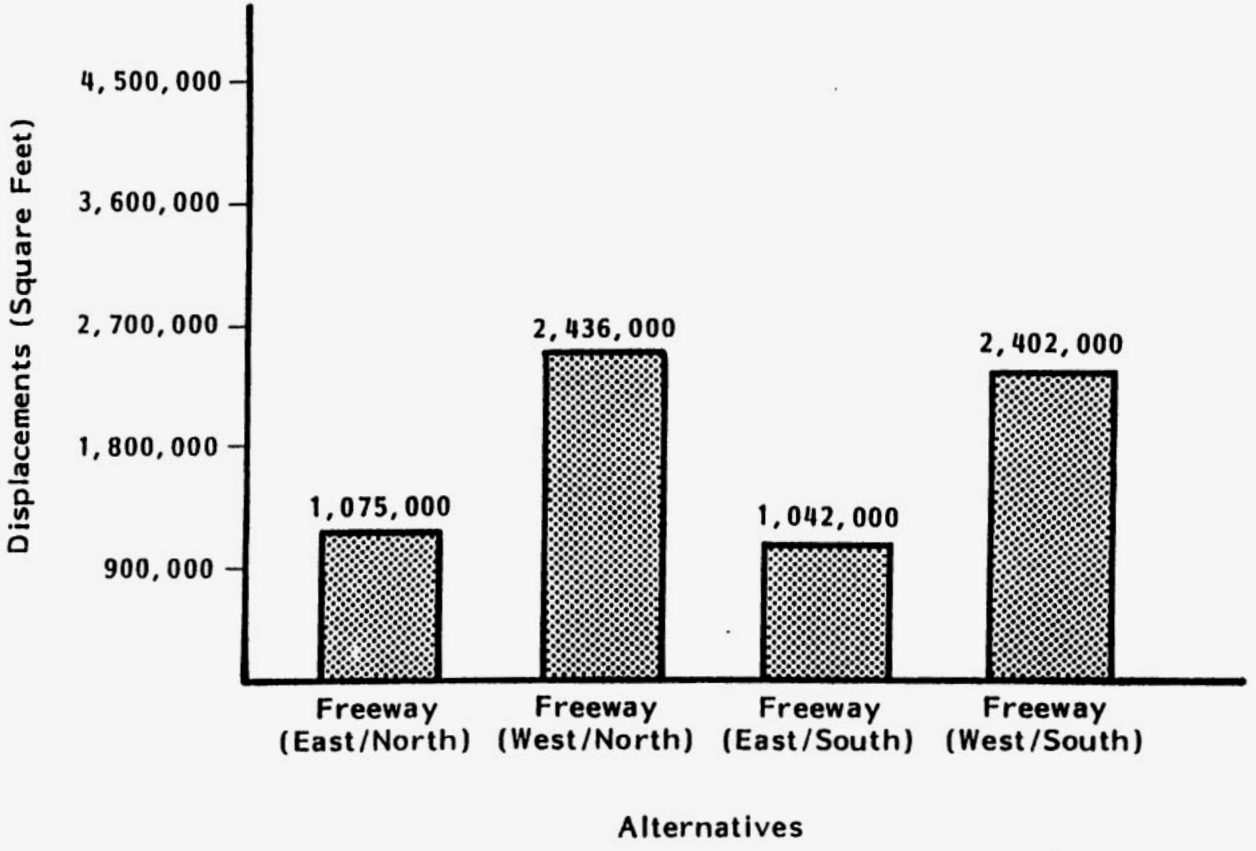
APPENDIX 5: PHASE III EVALUATION

This section evaluates the four remaining alternatives for cost, mobility, and environmental impacts. The performance of each alternative was examined and comparatively rated using eight evaluation criteria. This section outlines the criteria used in this evaluation and illustrates how the four alternatives compare under selected measures. The relative ratings assigned to each alternative are also included.

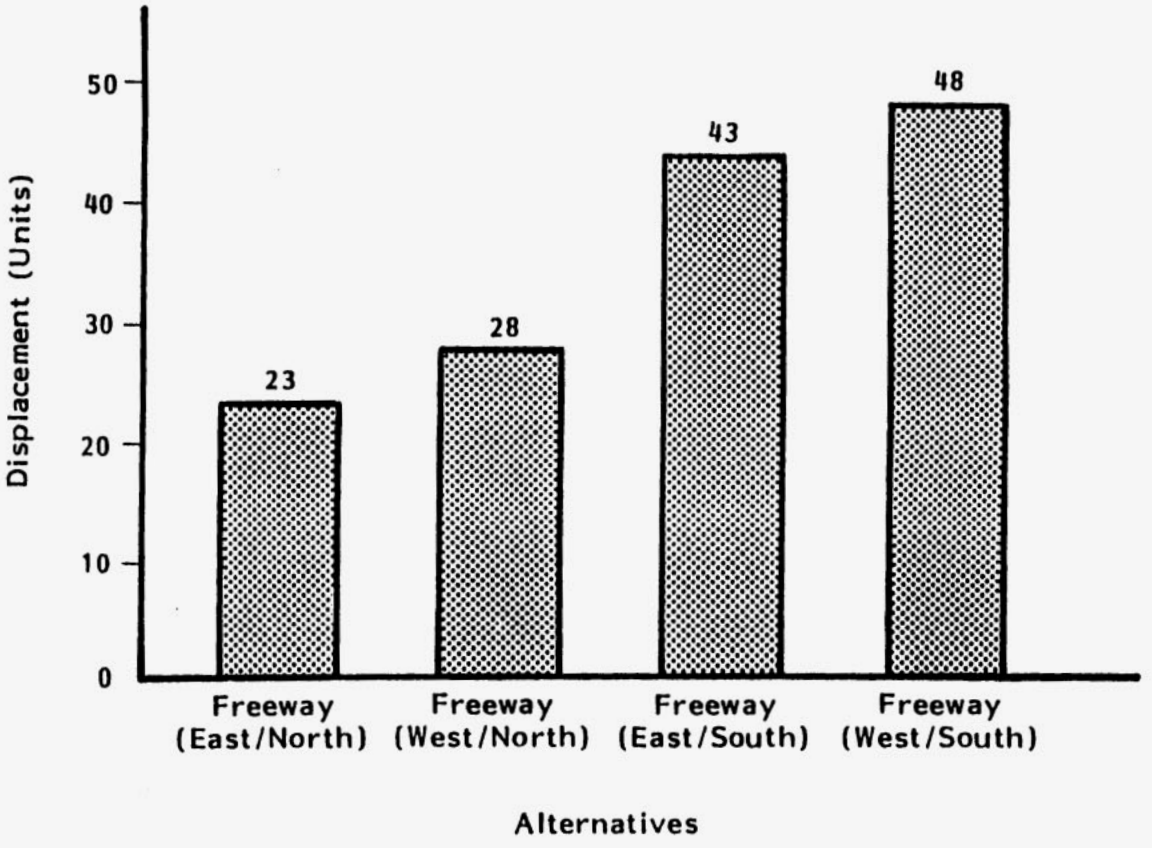
Capital Cost



Non-Residential Displacements



Residential Displacements



PHASE III EVALUATION - Individual Criteria Rating

CRITERIA

ALTERNATIVES	MOBILITY	COST	ENVIRONMENTAL IMPACTS	BUSINESS/ RESIDENTIAL NEIGHBORHOOD IMPACTS	CBD IMPACTS	GROWTH/ REDEVELOPMENT/ ECONOMIC IMPACTS	SAFETY	CONSTRUCTION DISRUPTION
FREEWAY (EAST/NORTH)[1] (IH 35 - SYCAMORE SCHOOL)	9.9	2.5	4.8	4.7	7.2	5.0	8.6	1.9
FREEWAY (WEST/NORTH)[2] (IH 35 - SYCAMORE SCHOOL)	9.9	2.4	4.7	4.4	4.3	4.0	9.1	1.0
FREEWAY (EAST/SOUTH)[3] (IH 35 - SYCAMORE SCHOOL)	10.0	2.7	4.6	4.4	10.0	5.0	10.0	2.3
FREEWAY (WEST/SOUTH)[4] (IH 35 - SYCAMORE SCHOOL)	10.0	2.6	4.4	4.2	7.2	4.0	9.5	1.6

[1] Mobility/Cost Ratio = 4.4

[2] Mobility/Cost Ratio = 4.2

[3] Mobility/Cost Ratio = 4.8

[4] Mobility/Cost Ratio = 4.6

(Rating Scale: 10=Best, 1=Worst)

APPENDIX 6: EVALUATION OF NEAR-TERM CAPITAL IMPROVEMENTS

This section contains a list of potential near-term capital improvements. Computer simulations including all of these TSM (Transportation Systems Management) improvements with a parkway along the Southwest Freeway Alignment and without the parkway were run. Each improvement is listed with its corresponding 1980, 2000-Scenario 2, TSM + Parkway, and TSM traffic volumes.

EVALUATION OF NEAR-TERM CAPITAL IMPROVEMENTS

Traffic Volumes Scenario 2

FACILITY	LOCATION		1980	2000 Baseline	Parkway/ TSM +	TSM +	Suggested Improvements
REVERSIBLE LANES							
7th	University to Henderson		28,000	28,000	30,000	32,000	Yes
Lancaster	University to Henderson		17,200	19,000	23,900	23,500	No
STREET WIDENINGS							
FM 731	I.H. 820 to F.M.1187	6 lanes	9,000	10,000	19,400	18,100	No
University	Lancaster to 7th	6 lanes	26,900	30,400	32,900	37,300	Yes
Henderson (S.H. 199)	Trinity River to I.H. 30	6 lanes	13,500	12,000	22,000	23,000	Yes
7th	Henderson to Trinity River	6 lanes	31,200	20,000	35,800	37,200	Yes
Roaring Springs	183 to Camp Bowie	4 lanes	6,200	12,500	14,500	13,900	Yes
Granbury	Trail Lake to Stadium	6 lanes	15,500	17,500	30,000	34,500	Yes
Vickery	Bryant Irvin to New "Parkway"	6 lanes	----	----	16,900	----	No
S.H. 183	New "Parkway" to I.H. 30	8 lanes	----	----	57,500	----	Yes
Hulen	I.H. 30 to I.H. 20	6 lanes	17,200	21,000	27,200	26,800	Yes
8th	Rosedale to Pennsylvania	6 lanes	16,000	17,600	28,000	30,000	Yes
SIGNAL PROGRESSION							
Hemphill	Sycamore School to Vickery		13,500*	15,200	15,500	17,300	No
Vickery	Hemphill to Jennings		16,600	22,600	31,700	23,100	Yes
Jennings	Vickery to CBD		14,200	19,100	18,800	21,000	Yes
McCart	Sycamore School to Granbury		16,000	22,600	30,000	33,100	Yes
Granbury	Hulen to Eighth		15,000	17,100	25,200	27,000	Yes
Eighth	Cantey to Summit		16,000	17,600	28,000	30,000	Yes
Summit	Eighth to CBD		16,000	18,000	17,500	18,500	Yes
University	Berry to Old University		26,000	29,300	28,000	30,500	Yes
University	I.H. 30 to 7th		25,500	30,500	24,500	28,500	Yes
Bryant Irvin	S.H. 183 to Vickery		9,300	34,900	30,500	36,000	Yes
Vickery	S.H. 183 to Rosedale		10,800	14,800	15,200	15,200	No
Vickery	Summit to I.H. 35		10,500	12,800	12,700	13,700	No
Rosedale	Vickery to Eighth		11,700	11,200	12,000	11,000	No
U.S. 377	Williams to Camp Bowie		17,000	21,000	19,000	24,000	Yes
Camp Bowie	S.H. 183 to Bigham		16,000	24,500	22,900	25,800	Yes
Camp Bowie	Horne to 7th		18,800	18,300	17,500	15,700	No
Lancaster	Camp Bowie to University		2,600	2,050	3,400	3,200	No
U.S. 80/180	Las Vegas to S.H. 183		19,500	24,800	23,100	22,800	Yes
U.S. 80/180	S.H. 183 to Camp Bowie		16,400	14,300	14,100	13,000	No
Pennsylvania	Summit to South Main		13,900	12,400	13,900	13,400	No
Berry	Stadium to I.H. 35		18,200	26,200	24,500	25,800	Yes
Seminary	McCart to I.H. 35		19,900	21,200	20,900	22,200	Yes
South Main	Vickery to Allen		7,400	7,900	8,500	9,300	No
Hulen	Granbury to I.H. 20		14,900	51,700	38,100	46,000	Yes
Hulen	I.H. 20 to Vickery		18,300	31,300	30,000	32,200	Yes
Henderson	Lancaster to Magnolia		10,500	10,400	10,100	11,400	No

* Seminary to Vickery

Traffic Volumes Scenario 2

FACILITY	LOCATION	1980	2000 Baseline	Parkway/ TSM +	TSM +	Comments
NEW ROADWAYS						
Belaire	Extend to Bryant-Irvin	----	----	21,500	23,000	Yes
GRADE SEPARATIONS						
Henderson (S.H. 199) - Belknap - Weatherford		----	----	15,800	19,200	Yes
University - Camp Bowie - 7th		----	----	15,500	14,500	No
U.S. 80/180 - S.H. 183		----	----	22,000	25,900	Yes
8th - Summit Connection		----	----	19,500	20,500	Yes
Granbury - Seminary		----	----	18,300	20,400	Yes
Granbury - McCart - Cleburne Rd.		----	----	17,900	18,200	Yes
PARKING REMOVAL						
Granbury/Eighth - IH 20 to Rosedale		15,000	17,800	27,000	30,200	Yes
HOV LANE						
IH 30	Montgomery to Guilford	----	----	1,000*	1,000*	No

PERIPHERAL CBD PARKING LOTS

Given the 44,000 and 50,000 additional CBD parking spaces needed under year 2000 Scenarios 1 and 2 respectively, it is likely that a portion of these spaces would have to be in peripheral lots. It is therefore suggested that some peripheral lots** be implemented, which may include the following:

- Vickery and Jennings
- TESCO (N. Main and Trinity River)
- 1st and 3rd Sts. between RR's
- Farrington Field

Success of these lots is greatly dependent upon an adequate level of transit service between each facility and the CBD.

* Daily transit ridership

** In addition to the existing Tandy facility

PARK-AND-RIDE LOTS

	Daily Transit Ridership Year 2000 Alternative 3 - Scenario 2	Suggested Improvements
I.H. 30 and I.H. 820 (Las Vegas Tr.)	193	Yes
I.H. 30 and Ridgemar Mall	290	Yes
I.H. 30 and Camp Bowie	316	Yes
I.H. 35 and I.H. 820 (Felix)	27	No
I.H. 35 and F.M. 1187	21	No
Granbury and I.H. 820 (Gorman)	1075	Yes
Granbury and Alta Mesa	746	Yes

SUMMARY

- Downtown Penetration
- Radial Capacity Improvement
- Creation of 8th/Granbury Parkway
- Addition of Park-and-Ride and Peripheral Lots

APPENDIX C

STATE AND FEDERAL
NOTICES OF INTENT

Texas Department of Transportation

Notice of Intent

Pursuant to 43 TAC §2.43 (e)(3), the Texas Department of Transportation (TxDOT) is issuing this notice to advise the public that the scope of the environmental impact statement (EIS) for the proposed State Highway 121 (S.H. 121) project in Tarrant County, Texas, will be revised.

The project was initially planned to be studied in a single EIS with limits from Interstate Highway 35 West (I.H. 35W) in Fort Worth, Tarrant County, to State Highway 174 (S.H. 174) in Johnson County. A first Notice of Intent (NOI) was published in the August 4, 1988, Federal Register with the S.H. 121 EIS limits being proposed for the South Section of the project from I.H. 20 to S.H. 174. A second NOI was published in the April 5, 1990, Federal Register with the S.H. 121 EIS limits being proposed for the North Section of the project from I.H. 35W to I.H. 20. This third NOI will change the scope of the EIS. The result will be a change of the limits and scope of the freeway project with portions that are proposed to be developed as a toll road where it is determined to be economically feasible.

The limits of the EIS for the proposed project are now portions of the North and the South Sections of S.H. 121 and will extend from Interstate Highway 30 (I.H. 30) in Fort Worth to Farm to Market Road 1187 (F.M. 1187), all within Tarrant County. The previous documentation was subdivided into a Draft EIS (DEIS) for the North Section with another DEIS for the South Section. The DEIS for the South Section was completed and a public hearing was held but a Record of Decision was not issued. The DEIS for the North Section was not completed and work was suspended. The new EIS for the proposed facility will cover a part of the South Section from I.H. 20 to F.M. 1187 and part of the North Section from I.H. 30 to I.H. 20. Companion documentation is being prepared separately for the remainder of the North Section of the proposed facility from I.H. 35W to I.H. 30 in Fort Worth, Tarrant County, as well as the remainder of the South Section of the proposed facility from F.M. 1187 in Tarrant County to U.S. Highway 67 (U.S. 67) in Cleburne, Johnson County.

Numerous public involvement activities have taken place during the development of the proposed project and will continue until a general consensus is reached on a preferred alternative. Many alternatives and routes have been considered. Among the alternatives considered for the proposed project are no-build, freeway development, and toll road development. To ensure that the full range of issues related to this proposed action are addressed and all significant issues identified, comments and suggestions are invited from all interested parties.

Agency Contact: Comments or questions concerning the proposed action and the EIS should be directed to Randy Bowers, P. E., Design Engineer, Texas Department of Transportation, 2501 SW Loop 820, Fort Worth, Texas 76133, (817) 370-6746.

TRD-9808200

Bob Jackson

Acting General Counsel

Texas Department of Transportation

Filed: May 20, 1998

[Federal Register: May 14, 1998 (Volume 63, Number 93)]
[Notices]
[Page 26840-26841]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr14my98-123]

==========

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

Environmental Impact Statement: Tarrant County, TX

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of Intent.

SUMMARY: The FHWA is issuing a third notice to advise the public that the scope of the environmental impact statement (EIS) for the proposed State highway **121** (**SH 121**) project in Tarrant County, Texas, will be revised.

FOR FURTHER INFORMATION CONTACT:
Walter C. Waidelich, District Engineer, Federal Highway Administration, 826 Federal Office Building, 300 E 8th Street, Austin, Texas 78701 Telephone: (512) 916-5988 or Dianna F. Noble, Director, Environmental Affairs Division, Texas Department of

[[Page 26841]]

Transportation, 125 East 11th Street, Austin, Texas 78701-2483 Telephone: (512) 416-2734.

SUPPLEMENTARY INFORMATION: The project was initially planned to be studied in a single EIS with limits from Interstate Highway 35 West (IH 35W) in Fort Worth, Tarrant County, to State Highway 174 (**SH** 174) in Johnson County. A first Notice of Intent (NOI) was published in the August 4, 1988, Federal Register with the **SH 121** EIS limits being proposed for the South Section of the project. A second NOI was published in the April 5, 1990, Federal Register with the **SH 121** EIS limits being proposed for the North Section of the project. This third NOI will change the scope of the EIS. The result will be a change of the limits and scope of the freeway project with portions that are proposed to be developed as a toll road where it is determined to be economically feasible. The limits of the EIS for the proposed project are now portions of the North and the South Sections of **SH 121** and will extend from Interstate Highway 30 (IH 30) in Fort Worth to Farm-to-Market Road 1187 (FM 1187), all within Tarrant County. The previous documentation was subdivided into a Draft Environmental Impact Statement (DEIS) for the North Section with another DEIS for the South Section. The DEIS for South Section was completed and a public hearing was held but a Record of Decision was not issued. The DEIS for the North Section was not completed and work was suspended. The new EIS for the proposed facility will cover a part of the South Section from IH 20 to FM 1187 and part of the North Section from IH 30 to IH 20. Companion documentation is being prepared separately for the remainder of the

North Section of the proposed facility from IH 35W to IH 30 in Fort Worth, Tarrant County, as well as the remainder of the South Section of the proposed facility from FM 1187 in Tarrant County to U.S. Highway 67 (US 67) in Cleburne; Johnson County.

Numerous public involvement activities have taken place during the development of the proposed project and will continue until a general consensus is reached on a preferred alternative. Many alternatives and routes have been considered. Among the alternatives considered for a proposed project are build nothing, freeway development, and toll road development.

To ensure that the full range of issues related to this proposed action are addressed and all significant issues identified, comments and suggestions are invited from all interested parties. Comments or questions concerning the proposed action and the EIS should be directed to the FHWA or TxDOT at the address provided.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Research, Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program)

Walter C. Waidelich,
District Engineer.

[FR Doc. 98-12876 Filed 5-13-98; 8:45 am]
BILLING CODE 4910-22-M

APPENDIX D

RECOMMENDED MAXIMUM AVG.
DAILY TRAFFIC
AND LEVEL OF SERVICE

Roadway Class	Good Flow, LOS A-B	Tolerable Flow, LOS C-D	Capacity Flow, LOS E
Urban Freeways			
4-lane	44,000	52,800	64,400
6-lane	66,000	79,200	96,600
8-lane	88,000	105,600	128,800
Urban Divided Streets			
4-lane	16,100	19,100	23,000
6-lane	23,500	27,900	33,000
8-lane	29,400	34,900	42,000
Urban Undivided Streets			
2-lane	7,700	9,100	11,000
4-lane	12,600	14,900	18,000
6-lane	19,800	23,500	28,300
Rural Freeways			
4-lane	20,800	31,600	42,000
6-lane	31,200	47,400	63,000
Rural Divided Highways			
4-lane	15,800	20,100	29,500
6-lane	23,400	29,800	43,400
Rural Undivided Highways			
rolling terrain			
2-lane	2,200	3,800	10,000
level terrain			
2-lane	3,200	5,300	13,500
4-lane	9,500	13,000	17,600
6-lane	15,000	19,500	27,100

Developed by the Texas Department of Transportation, Design Division, Austin, TX – Revised from the Federal Highway Program Manual.

** The volumes assume a percentage of trucks and do not require adjustment to passenger car equivalents. The table is not meant to be used for design purposes but rather for planning evaluations to indicate when tolerable flows are no longer accommodated. This chart has been used by the Texas Transportation Commission for planning purposes since 1985, and is recommended for use as one of the local performance measures for the CMS.

APPENDIX E

AGENCY COORDINATION LETTERS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

MAY 1 2 1999

Mr. Walter C. Waidelich, Jr.
District Engineer
Texas Division Office
Federal Highway Administration
300 East 8th Street, Room 826
Austin, TX 78701

Dear Mr. Waidelich:

Thank you for your letter of April 13, 1999, inviting our Agency's participation as a cooperating agency in the preparation of an Environmental Impact Statement (EIS). Pursuant to the National Environmental Policy Act (NEPA), the Federal Highway Administration, in cooperation with the Texas Department of Transportation, will prepare a draft EIS for the State Highway 121 project in the city of Fort Worth, Tarrant County, Texas. This project will be a multi-lane control access facility extending from Interstate Highway 30 to Farm-to-Market Road 1187, for a total project length of 15.1 miles.

We are glad to participate as a cooperating agency as resources will permit. We plan to participate with your EIS staff in the District in the initial planning meeting and public NEPA scoping and EIS public hearing activities, as well as any field level surveys associated with the preparation and review of the preliminary and draft EIS. For specific environmental resource issues, your staff and consultants are welcome to visit with our regional staff experts to discuss specific technical data collection and impact analysis issues. I and my staff are knowledgeable of the Department of Transportation surface transportation policy and responsibilities established by the Transportation Equity Act for the 21st Century (TEA-21) signed into law by President Clinton on June 9, 1998. I have assembled a Regional TEA-21 Team to work with you on an as needed basis for transportation projects such this one.

I have designated Mr. Rob Lawrence, Chief, Office of Planning and Coordination, and Mr. Michael Jansky of his staff as the regional points of contact for EIS project related issues. They may be contacted regarding correspondence and scheduling discussions with regional experts for technical assistance regarding specific media-related environmental issues to be discussed in the EIS.

We appreciate this opportunity to participate in the NEPA planning process. I and my staff look forward to working with the Federal Highway Administration and the Texas Department of Transportation in the development of the project and EIS. If you have any questions, please contact me, or your staff may contact Mr. Lawrence at 214-665-2258 or Mr. Jansky at 214-665-7451.

Sincerely yours,

W.B. Hathaway

for Gregg A. Cooke
Regional Administrator

cc: Charles W. "Wes" Heald, P.E.
Executive Director, Texas Department of Transportation
Mr. Ron Carriker
Federal Highway Administration

DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF:

May 13, 1999

Environmental Division

Mr. Walter C. Waidelich, Jr.
District Engineer
Federal Highway Administration
U.S. Department of Transportation
Texas Division Office
300 East 8th Street, Room 826
Austin, Texas 78701

Dear Mr. Waidelich:

Thank you for your letter, dated April 13, 1998, requesting the U.S. Army Corps of Engineers, Fort Worth District, become a cooperating agency on the development of the Environmental Impact Statement (EIS) for the State Highway 121 project in Fort Worth, Texas.

The Fort Worth District has in the past and is currently participating in Major Investment Study Project Coordination Work Groups with the Texas Department of Transportation and appreciate the continued opportunity to work with you on projects of mutual interest. While we have no currently active projects that would be directly affected by the proposed route, we remain ready to provide you with assistance in our agency's areas of expertise.

Requests for review of your EIS in the area of floodplains and wetlands should be sent to the attention of Mr. Paul M. Hathorn, Chief, Environmental Resources Branch. Thank you again for the opportunity to act as a cooperating agency on the development of the EIS for this project.

Sincerely,

William Fickel, Jr.
Chief, Environmental Division

Texas Department of Transportation

P.O. BOX 6868 • FORT WORTH, TEXAS 76115-0868 • (817) 370-6500

June 5, 2002

Biological Assessment

New Roadway Construction
SH 121 T
From IH 30 to FM 1187
CSJ: 0504-02-008 and 0504-02-013
Tarrant County

Mr. Thomas J. Cloud, Jr.
Field Supervisor
U.S. Fish and Wildlife Service
711 Stadium Drive, Suite 252
Arlington, Texas 76011

Dear Mr. Cloud:

This attached Biological Assessment (BA) is submitted to you pursuant to 50 CFR 402.01. The BA addresses the proposed new roadway construction of SH 121 T from IH 30 to FM 1187 in Tarrant County, Texas. This proposed project would be carried out with Federal, State, North Texas Tollway Authority, and City of Fort Worth funds. We appreciate your staff's review and concurrence with the BA's conclusion that the project is not likely to effect any Federally listed species.

If you do not have any comments on the BA, please check the box, sign, and date the bottom of this letter and return a copy via facsimile to Robert Hall at 817-370-6759. In addition, please submit the original signed copy to the address above.

Your assistance with this project is greatly appreciated. Please contact Robert Hall at 817-370-6755 or at rhall@dot.state.tx.us if you have any questions regarding this project.

Sincerely,

Robert Hall

Robert Hall
District Environmental Coordinator

Attachment

☐ **Not likely to effect**

SIGNATURE:_____
DATE: _____

Biological Assessment
For SH 121 T
From IH 30 to FM 1187
Tarrant County, Texas
CSJ: 0504-03-008 and 050402-013

Project Description

The approximate 14 mile long proposed new roadway project is located in Tarrant County, Texas (Project Location Map). Right-of-way (ROW) for the project varies between 220 feet and 392 feet. Initially the roadway is planned to be constructed as a four-lane urban tollroad from IH 30 to just south of IH 20 and a two-lane rural highway from south of IH 20 to the project's terminus at FM 1187. The ultimate roadway is planned to be expanded to a six/four-lane urban tollroad with frontage roads constructed only in locations where they would be essential to maintain local street circulation and continuity. Initial phased construction will include ROW acquisition for the ultimate roadway. This Biological Assessment and the Environmental Impact Statement for this project includes analysis for the ultimate roadway.

The project is located within the Oak Woods and Prairies region of Texas, specifically within the Eastern Cross Timbers sub-region. However, land use within approximately 60 percent of the project area (from IH 30 south to Altamesa) is characterized as highly urbanized resulting in the loss of wildlife habitat.

Land use within the remaining 40 percent of the project area (from Altamesa south to FM 1187) is characterized as undeveloped and agricultural land with scattered residential areas. The City of Fort Worth has designated a large portion of the undeveloped land for commercial, industrial, and recreational use. Much of the remaining undeveloped land south to FM 1187 has been planned for residential development. Past land use has caused the uplands to be covered mostly with scattered stands of mesquite (*Prosopis glandulosa*), scrub oak (*Quercus sinuate*), and juniper (*Juniperus ashei*). Understory vegetation consists of big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), Indian grass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), gramas (*Bouteloua* spp.), and buffalo grass (*Buchloe dactyloides*).

General soil map units found within the project corridor include the Sanger-Purves-Slidell, the Aledo-Bolar-Sanger, and the Frio-Trinity units. The Sanger-Purves-Slidell unit consists of nearly level and gently sloping, deep and shallow, clayey soils located mainly on uplands. The soils in this unit are mainly used as cropland, pastureland, rangeland, and for urban purposes. The map unit is primarily made up of well-drained soils that have slopes of 0 to 5 percent. This unit makes up approximately 21 percent of the county and 37 percent of the project area.

The Aledo-Bolar-Sanger unit consists of gently sloping to moderately steep, very shallow to deep, loamy and clayey soils located mainly on uplands. The soils in this unit are mainly used as rangeland, pastureland, cropland, and for urban purposes. The map unit is primarily made up of well-drained soils that have slopes of 1 to 20 percent. This unit makes up 20 percent of the county and 48 percent of the project area.

The Frio-Trinity unit consists of nearly level, clayey soils located on floodplains. The soils in this unit are mainly used as pastureland and for urban purposes. The map unit is primarily made up of well-drained soils with 0 to 1 percent slope. This unit makes up 7 percent of the county and about 15 percent of the project area.

Twelve (12) water bodies including floodway, floodplain, river and streams are within the project area. Six (6) of these water bodies flow directly to the Clear Fork of the Trinity River and six (6) flow to Benbrook Lake.

The stream and 100- year floodplain location within the project area are listed below:

Clear Fork Trinity River –

1. Along Forest Park Boulevard, south of Lancaster Avenue,
2. South of IH 30, east of University Drive,
3. North of IH 30, east of University Drive,
4. East of University Drive, south of the railroad bridge,
5. North of Bellaire Drive, between Hulen Street and Bryant Irvin Road,

Unnamed Tributary of the Clear Fork Trinity River -

6. South of Overton Ridge, between Hulen Street and Bryant Irvin Road,

Unnamed Tributary of Benbrook Lake

7. North of Columbus Trail, and west of Old Granbury Road,
8. South of Columbus Trail East of Old Granbury Road,
9. Between the proposed Risinger Road and McPherson Road extensions,

Unnamed Tributary of Rock Creek –

10. Between Stuart-Feltz Road and Old Granbury Road,
11. At Old Granbury Road, north of FM 1187, and
12. At FM 1187 and Old Granbury Road.

Site Specific Information

Below are the United States Fish and Wildlife Service (FWS) listed species that potentially occur within Tarrant County and the habitat description for each species:

Interior Least Tern (*Sterna antillarum*)--Premier nesting sites are salt flats, broad sandbars, and barren shores along wide, shallow rivers. Important breeding habitat characteristics include: (1) presence of bare or nearly bare ground and alluvial islands or sandbars for nesting, (2) availability of food (primarily small fish), and (3) favorable water levels during the nesting season (so nest remain above water). They usually nest on sites devoid of vegetation, but have been found on sites with and average of 11 to 30 percent vegetative cover, composed of grasses, shrubs, and trees and ranging from 39 to 95 cm in height. Vegetation, if present, is usually located well away from the colony, with the exception of bugseed, eastern cottonwood, and sandbar willow. As natural nesting sites have become sparse, birds have used dredge islands, dikefields, fly-ash lagoons, sandpits, and gravel levee roads as nesting sites.

Whooping Crane (*Grus americana*)--Marshes, river bottoms, potholes, prairies, and cropland. Premier winter habitats are marshes, tidal flats, uplands and barrier islands. Migratory habits vary, with croplands used for feeding and primarily palustrine wetlands are used for roosting. Water depth at roost is usually less than 10 inches, the majority between 1 and 6 inches deep. Cranes rarely use densely vegetated wetlands.

Mountain Plover (*Charadrius montanus*)--Preferred habitat consists of expansive flats of short-grass prairie where the plover feeds on grasshoppers, beetles, crickets, flies, and other invertebrates. In areas of tall grasses, the plover is closely associated with prairie dog towns.

Bald Eagle (*Haliaeetus leucocephalus*)--In Texas, preferred nesting habitat is along river systems, or within 1-2 miles of some other large body of water, such as a lake or reservoir. Nests are often located in areas where forest, marsh, and water meet. Large, tall trees (40-120 feet tall) are used for nesting and roosting (taller than the general forest canopy, providing an unobstructed flight path to the nest). Tree species used for nesting in Texas include Loblolly Pine, Bald Cypress, Oak, Cottonwood, and Sycamore. Nearby (within 0.5 mile) wetland areas are necessary for feeding. Fish is generally the prime food, but eagles in Texas also prey on waterfowl, turtles, small mammals, and carrion.

Black-tailed Prairie Dog (*Cynomys ludovicianus*)--In Texas, the Black-tailed Prairie Dog historically occurs in the western half of the state and typically inhabits short grass prairies where they feed on grasses and forbs. They usually avoid areas of heavy brush and tall grass. In the Trans-Pecos area, they favor alluvial fans at the mouth of draws, "hard-pan" flats where brush is sparse or absent, and the edges of shallow valleys.

The table below lists the Federally Endangered, Threatened, and Candidate species that potentially occur in Tarrant County, presence of habitat availability within or near the project area, impact to each species, and justification of impact status.

Species	USFWS Status	Habitat Present	Species Impacted	Justification of Impacted Status
Interior Least Tern	E	No	No	1/3
Whooping Crane	E	No	No	1/2/3
Bald Eagle	T/PDL	No	No	1/2/3
Mountain Plover	DL	No	No	1/2/3
Black-tailed Prairie Dog	C	No	No	1/3

E = endangered, T = threatened, P = Proposed, PDL = Proposed for delisting, C = Candidate species)

1. The project area does not contain the preferred habitat for this species.
2. This species is migratory through the project area and would only potentially utilize the area for temporary stopover sites.
3. No evidence of species was observed during field surveys.

Based on the FWS habitat description for each of these species and field surveys of the project area, no habitat for any of these species is present within or near the project area. In addition, coordination with Texas Parks and Wildlife Department's Biological Control Data System (BCD) personnel indicates that no element of occurrence for any listed species is known to be present within or near the project area. No listed species was observed during the field surveys. Based on the above information, Texas Department of Transportation (TxDOT) concludes that the proposed project is not likely to effect any listed species.

Effects of the Action

Direct and Indirect:

Based on the lack of habitat for the listed species, no BCD indication of element of occurrence, and no observation of such species during field surveys, TxDOT concludes that the proposed project is not likely to have direct or indirect effects on any listed species.

Interdependent and Interrelated Effects:

Based on the lack of habitat for the listed species, no BCD indication of element of occurrence, and no observation of such species during field surveys, TxDOT concludes that the proposed project is not likely to have direct or indirect effects on any listed species.

Cumulative Effects:

Based on the lack of habitat for the listed species, no BCD indication of element of occurrence, and no observation of such species during field surveys, TxDOT concludes that the proposed project is not likely to have direct or indirect effects on any listed species.

Incidental Take

Based on the lack of habitat for the listed species, no BCD indication of element of occurrence, and no observation of such species during field surveys, TxDOT concludes that the proposed project is not likely to have direct or indirect effects on any listed species. Therefore, no incidental take of any listed species will occur because of the project.

Conservation Measures

The project will not cause an adverse impact to any listed species, therefore, conservation measures specifically designed to avoid impact to any listed species does not apply to this project.

Determination of Effect

Based on the lack of habitat for the listed species, no BCD indication of element of occurrence, and no observation of such species during field surveys, TxDOT recommends that the proposed project <u>is not likely to effect</u> any listed species.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
WinSystems Center Building
711 Stadium Drive, Suite 252
Arlington, Texas 76011

2-12-02-I-431

June 12, 2002

Mr. Robert Hall
Texas Department of Transportation
P.O. Box 6868
Fort Worth, Texas 76115-0868

Dear Mr. Hall:

This responds to your June 5, 2002, letter requesting concurrence with an effects determination included with the Biological Assessment (BA) submitted for the proposed SH 121 T in Tarrant County, Texas. The proposed project consists of the construction of an approximately 14-mile four-lane urban toll road.

Under section 7(c) of the Endangered Species Act, a BA is required for federal actions considered to be "major construction activities." It is our understanding that, as part of compliance with the National Environmental Policy Act, an Environmental Impact Statement (EIS) is being prepared for the proposed action. The comments provided in this letter only pertain to the BA and potential effects to federally listed species; we may provide additional comments on the draft EIS, if necessary, when it becomes available.

The BA provides evidence that suitable habitat for the endangered interior least tern (*Sterna antillarum*), endangered whooping crane (*Grus americana*), threatened bald eagle (*Haliaeetus leucocephalus*), and proposed threatened mountain plover (*Charadrius montanus*), which have been documented in Tarrant County, does not occur in the general project area. Based on this information and a review of our files, we concur with your determination that the proposed project is not likely to adversely affect these listed species.

Thank you for the opportunity to comment on the proposed project. If you have any questions, please contact Omar Bocanegra of my staff at (817) 277-1100.

Sincerely,

Tom Cloud

Thomas J. Cloud, Jr.
Field Supervisor

Texas Department of Transportation

DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

June 6, 2002

RECEIVED
JUN 7 2002
TEXAS HISTORICAL COMMISSION

Section 106 Consultation
Tarrant County, Fort Worth District
CSJ 0504-02-008 SH 121 T
Re: Testing of Site 41TR170

Dr. James E. Bruseth
Division of Archeology
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711

CONCUR
by [signature]
for F. Lawrence
State Historic Preservation Officer
Date 6-12-02

Dear Dr. Bruseth:

The proposed road widening project would be undertaken with federal funds. In accord with the Programmatic Agreement (PA) among the Advisory Council on Historic Preservation, the Federal Highway Administration, the Texas Historical Commission (THC), and TxDOT, and the Memorandum of Understanding (MOU) between TxDOT and THC, we hereby continue consultation under Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas.

The proposed project would construct a segment of State Highway 121 between IH 20 in Fort Worth and FM 1187 and is part of a larger project that would eventually extend to US 67 in Cleburne, Johnson County. This segment of SH 121 is located entirely within Tarrant county and has been designated SH 121 T.

In 1999, Hicks and Company conducted an archeological survey of the northern portion of SH 121 T, where the proposed alignment crosses the West Fork of the Trinity River. One prehistoric archeological site, 41TR170, was identified during the survey. On March 28, 2000 TxDOT recommended that site 41TR170 be tested and that no further work was required within the remainder of the SH 121 T project area. In a letter dated April 24, 2000, your office concurred. In April of 2000, TxDOT requested THC concurrence on a testing plan for site 41TR170 and received THC concurrence. Subsequently, TxDOT took steps to initiate testing at site 41TR170. Right of entry to the site was denied by the property owner.

We therefore request your concurrence that project development, including completion of the NEPA process and land acquisition, can proceed provided that testing of site 41TR170 and all necessary consultation is completed prior to construction impacts. After obtaining access to the proposed new right of way, we will test site 41TR170 and continue consultation with your office under the terms of the PA and Memorandum of Understanding (MOU) between the THC and TxDOT.

If you have any questions or need more information, please contact Mike Jordan at 512/416-2635.

Sincerely,

Michael Jordan, Staff Archeologist
Archeological Studies Program
Environmental Affairs Division

G. R. Dennis Price
Environmental Specialist
Environmental Affairs Division

Texas Department of Transportation

DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

June 6, 2002

Section 106 Consultation
Tarrant County, Fort Worth District
CSJ 0504-02-008 SH 121 T
Re: Proposed Alternative Shift – Alternative "C"

RECEIVED
JUN 07 2002
TEXAS HISTORICAL COMMISSION

Dr. James E. Bruseth
Division of Archeology
Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711

CONCURS
by
for F. Lawrence
State Historic Preservation Officer
Date 6-12-02

Dear Dr. Bruseth:

The proposed road widening project would be undertaken with federal funds. In accord with the Programmatic Agreement (PA) among the Advisory Council on Historic Preservation, the Federal Highway Administration, the Texas Historical Commission (THC), and TxDOT, and the Memorandum of Understanding (MOU) between TxDOT and THC, we hereby continue consultation under Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas.

The proposed project would construct a segment of State Highway 121 between IH 20 in Fort Worth and FM 1187 and is part of a larger project that would eventually extend to US 67 in Cleburne, Johnson County. This segment of SH 121 is located entirely within Tarrant county and has been designated SH 121 T. Recently an alignment shift has been proposed at the southern end of SH 121 T near Cleburne Crowley Road, where this segment joins the next segment of SH 121, designated SH 121 South. The proposed alignment shift would utilize Alternative "C" on the attached maps. Several archeological studies have already been conducted in association with this project.

In 1994, TxDOT conducted an archeological survey of almost the entire proposed SH 121 T and SH 121 South alignments. The survey extended from 0.8 miles north of IH 820 in Fort Worth, Tarrant County to US 67 in Cleburne, Johnson County. The survey included shovel testing of a segment, designated Alternative "A" and "B" on the attached maps, that is located approximately 1,500 ft east of the proposed alignment shift, designated Alternative "C" on the attached maps. Despite shovel testing, no archeological sites were identified within the project area. One site, 41TR137, a surface lithic scatter, was observed 30m east of the project area. Please note that site 41TR137 is located over 1.5 miles northeast of the proposed alignment shift. Furthermore, the site is located east of the area surveyed in 1994 (designated as Alternative "A" and "B" on the attached maps) and Alignment "C", the proposed alignment shift, is located west of the area surveyed in 1994.

In 1999, Hicks and Company conducted an archeological survey of the northern portion of SH 121 T, where the proposed alignment crosses the West Fork of the Trinity River. One prehistoric archeological site, 41TR170, was identified during the survey. On March 28, 2000 TxDOT recommended that site 41TR170 be tested and that no further work was required within the remainder of the SH 121 T project area. On April 24, 2000, your office concurred. Right of entry to the site was denied by the property owner and currently testing is on hold pending ROW acquisition. This area is over 6 miles north of the proposed alignment shift designated Alternative "C" and is located in an entirely different environmental setting.

In May of 2002 Geo-Marine, Inc. performed an impact evaluation of the segment of SH 121, located south of SH 121 T. This segment has been designated SH 121 South (CSJ: 2118-02-008). The impact evaluation covered the entire length of the proposed SH 121 South project and extended from the southern terminus of the SH 121 T project (600 ft northeast of Cleburne Crowley Road) to US 67. No archeological sites and no settings with reasonable potential to contain archeological historic properties or SAL's were observed. The impact evaluation report dated May 22, 2002 noted that the entire project area is located in an upland setting and that because the upland setting lacks a permanent water source, archeological sites are unlikely to occur within the project area. Furthermore, the report concluded that the soils within the project area are too shallow to be conducive to retaining archeological deposits.

The proposed SH 121 T alignment shift would be located in a setting very similar to that described in the Geo-Marine impact evaluation report. Alternative "C" is located in an upland setting with no permanent source of water. The Geologic Atlas of Texas, Dallas Sheet (Bureau of Economic Geology: 1972) indicates that Alternative "C" is located in an area mapped as Lower Cretaceous Pawpaw Formation, Lower Cretaceous Weno Limestone, and Lower Cretaceous Grayson Marl and Main Street Limestone undivided. There are no alluvial settings mapped within Alignment "C". According to the Soil survey of Tarrant County [Map Sheets 54 and 61] Alternative "C" crosses shallow upland soils. Furthermore, these shallow soils have been previously disturbed by agricultural activities. These soils are considered too shallow and too disturbed to be conducive to retaining archeological deposits.

A check of the Texas Archeological Sites Atlas revealed no recorded archeological sites within or adjacent to Alternative "C". Because Alternative "C" is located in an area of ancient geologic deposits in an upland setting that is devoid of a permanent water source and consists of previously disturbed shallow soils it is concluded that the area does not include settings with reasonable potential to contain archeological historic properties or SAL's. Recent archeological work in the vicinity of the proposed alignment shift, described above, supports this conclusion.

We request your concurrence that the proposed alignment shift labeled Alternative "C" does not contain settings with reasonable potential to contain archeological Historic Properties (36 CFR 800.16.(l)) or SAL's (13 TAC §26.12) and that no further archeological work is required within the limits of Alternative "C". In the unlikely event that archeological materials are discovered during construction, work in the area of discovery will cease and accidental discovery procedures will be implemented in accordance with the provisions of the Programmatic Agreement (PA) between TxDOT and the THC.

If you have any questions or need more information, please contact Mike Jordan at 512/416-2635.

Sincerely,

Michael Jordan, Staff Archeologist
Archeological Studies Program
Environmental Affairs Division

G. R. Dennis Price
Environmental Specialist
Environmental Affairs Division

Attachments

TEXAS HISTORICAL COMMISSION

The State Agency for Historic Preservation

RICK PERRY, GOVERNOR

JOHN L. NAU, III, CHAIRMAN

F. LAWERENCE OAKS, EXECUTIVE DIRECTOR

August 9, 2002

Bruce Jensen
Environmental Affairs Division
Texas Department of Transportation
125 E. 11th Street
Austin, Texas 78701-2483

Re: Project review under Section 106 of the National Historic Preservation Act of 1966, proposed construction of SH 121T, from IH-30 to FM 1187 (CSJ 0504-02-008), Fort Worth, Tarrant County, Texas. (FHWA)

Dear Mr. Jensen:

Thank you for providing information regarding the above referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Bob Brinkman, has completed a review of the cultural resources within the Area of Potential Effects (APE) by applying state and federal criteria for historical designation. We concur with the findings of the survey, identifying 10 properties individually **eligible** for listing on the National Register of Historic Places (NRHP). We also agree that the Mistletoe Heights neighborhood (Sites 80 through 227 in this report) comprises a **potential historic district** which is **eligible** for listing.

In addition, we conclude that properties in the Sunset Terrace / Quality Hill neighborhood (Sites 233 through 239) also comprise a **potential historic district** which is **eligible** for listing. Based on the information provided it appears that in the preferred alternative, the reconfigured highway closest to Mistletoe Heights and Sunset Terrace would introduce no new lanes beyond the existing transportation corridor. We therefore conclude that the project as proposed will have no visual impact on historic resources in this section. We are concerned about the potential for additional traffic, noise, and light pollution near historic districts, particularly at the Summit interchange near Sunset Terrace and at Rosedale near Mistletoe Heights. We request that TxDOT consider minimizing or avoiding increases in traffic, noise and light pollution in these historic areas, and that TxDOT consider public input as part of the ongoing public testimony process. With these considerations in mind, we **conditionally** agree that the project as proposed will have **no adverse effect** on historic resources, provided that public testimony and design alternatives are given consideration. We concur that all other Sites in this report not mentioned above are **not eligible** for listing on the National Register of Historic Places.

P.O. BOX 12276 · AUSTIN, TX 78711-2276 · 512/463-6100 · FAX 512/475-4872 · TDD 1-800/735-2989
www.thc.state.tx.us

We look forward to further consultation with your office, and hope to maintain a partnership that will foster effective historic preservation. Thank you for your participation in this federal review process. If you have any questions concerning this review or if we can be of further assistance, please contact Bob Brinkman at 512/463-8769.

Sincerely,

F. Lawerence Oaks
Executive Director, Texas Historical Commission

cc: Susan Blick, Tarrant County Historical Commission, 804 Moore Road, Mansfield TX 76063

Shanon Wasielewski, Fort Worth CLG, 1000 Throckmorton, Fort Worth TX 76102

Texas Department of Transportation

DEWITT C. GREER STATE HIGHWAY BLDG. • 125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • (512) 463-8585

9 September 2002

SECTION 106: Finalization of review process
Tarrant County, FTW
CSJ 0504-02-008

SH 121T from IH 30 to FM 1187

F. Lawerence Oaks
State Historic Preservation Officer
Texas Historical Commission
Austin, Texas 78711

Dear Mr. Oaks:

We offer the following reassurances in response to correspondence from your office dated August 9, 2002 regarding the potential effects associated with this project of traffic, noise and light pollution on historic districts and individual properties eligible for listing in the NRHP (National Register of Historic Places).

As stated in our previous correspondence, potential effects on eligible properties were analyzed in conjunction with the environmental impact statement being conducted under the provisions of NEPA (National Environmental Policy Act). The issues of the indirect effects of traffic, noise, and light pollution were among the many environmental impacts evaluated during the development of the program for this project. The NEPA process will continue to guide planning for the project throughout its development, including provisions for consideration of public input. As part of this process, TxDOT anticipates conducting a public hearing in late fall 2002 that will be open to all who choose to attend and/or participate. Adequate opportunities will be afforded individuals and organizations to provide information about their concerns for consideration in the project development process. In addition, all comments received through the hearing process will be addressed in writing in the summary and analysis section of the final environmental impact statement. Viable comments that meet all other criteria, are achievable within reasonable and feasible cost considerations and do not compromise safety will be evaluated for implementation.

Construction of SH 121T is intended to provide alternate access to downtown Fort Worth from the southwest portion of Tarrant County and adjoining Johnson County. As a joint effort between TxDOT, the City of Fort Worth and the North Texas Tollway Authority, the project has been developed over nearly four decades with ongoing input from local entities and interested parties. While the alternative alignments remained fairly consistent through the past three to five years, input from the public continues to provide opportunities to fine-tune the project. In addition to numerous public meetings and ongoing discussions with governmental partners, a community advisory committee helps convey the public's interests and concerns to the project managers for consideration in developing the final project.

Public concern for traffic, noise and light pollution has been accommodated into the design through this process. Construction of SH121T ultimately will relieve current traffic loads on existing city thoroughfares, thereby abating rather than exacerbating traffic woes in the areas of concern. Traffic projections for the Forest Park/Rosedale Street and Summit Avenue areas indicate that the build alternative actually decreases traffic volumes on these thoroughfares. Noise and light pollution also will be considered during project development. Noise abatement criteria established by the Federal Highway Administration and adopted by the Texas Department of Transportation will be followed in implementing noise abatement

measures. Light pollution concerns will be addressed with consideration of utilizing low level lighting in areas of residential development provided safety is not compromised. In addition, two high mast luminaires on IH-30 near Summit Avenue and the Sunset Terrace residential area are scheduled for replacement with more residential friendly lighting in the execution of this project.

Thank you for your concurrence with our determination that this project poses no adverse effect to historic properties. Please acknowledge your receipt of this correspondence and return a signed copy of this letter for our files within 15 days. If you need further information, please call me at 512/416-2657.

Sincerely,

Bruce Jensen
Architectural Historian
Environmental Affairs Division

RECEIPT ACKNOWLEDGED

NAME: _____ DATE: 9/18/02

State Historic Preservation Officer

attachments

cc: Bob Brinkman, THC, History Programs Division
Chase Robertson, THC, Division of Architecture

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