

ENVIRONMENTAL ASSESSMENT

IH 35E: FROM IH 20 to EIGHTH STREET
U.S. 67: FROM FM 1382 TO IH 35E
CSJs: 0261-02-044, 0261-03-030, 0442-02-088

DALLAS COUNTY, TEXAS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
TEXAS DEPARTMENT OF TRANSPORTATION

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INTRODUCTION

This environmental document (Environmental Assessment) evaluates the social, economic, and environmental impacts resulting from the proposed expansion and reconstruction of IH 35E/U.S. 67 (The Southern Gateway), in southern Dallas County. This project is being proposed by the Texas Department of Transportation (TxDOT) and was initiated to determine alternatives that would meet the long-term transportation needs in southern Dallas County.

U.S. 67 connects to IH 35E in the southern portion of the city of Dallas. It connects Dallas to Midlothian and points south and west. The U.S. 67 freeway had been upgraded in the 1960s and 1970s to accommodate the expanding population and commerce in southwest Dallas County and Ellis County.

IH 35E is part of IH 35 that extends from Mexico to Canada. IH 35 travels through the cities of Austin, Dallas-Fort Worth (DFW), Oklahoma City, Kansas City, Des Moines, and Minneapolis-St. Paul. It is a vital facility for the intrastate, interstate and international movement of people and goods, and it has been designated as a North American Free Trade Agreement (NAFTA) corridor. To serve the DFW Metroplex, IH 35 splits into two legs south of Dallas and Fort Worth, IH 35E through Dallas and IH 35W through Fort Worth. IH 35E and IH 35W merge together north of the DFW Metroplex to form a single facility in Denton.

A Major Investment Study (MIS) was completed in 2003 for the Southern Gateway. The goals of the MIS were to enhance mobility and safety, be compatible with other regional projects, be cost effective, and minimize environmental impacts. Other projects in southern Dallas County have been designed to help relieve areas of congestion. These projects include Project Pegasus/Trinity Parkway, the East Corridor, Loop 12/IH 35E, and Loop 9. See Figure 1: Area Projects Map in **Appendix A**.

In recent years, population growth in Dallas, and many of the southern suburban cities, has greatly increased transportation demand. The Southern Gateway project proposes to improve mobility while minimizing impacts to the communities of southern Dallas County.

I. DESCRIPTION OF PROPOSED ACTION

A. Description of Proposal

The proposed action is the reconstruction and widening of approximately 19 miles along the IH 35E/U.S. 67 corridor in southern Dallas County. The project limits on IH 35E are from IH 20 to Eighth Street, south of downtown Dallas and the Trinity River, a distance of approximately eight miles. The project limits on U.S. 67 are from FM 1382 to IH 35E, a distance of approximately 11 miles. See Figure 2: Vicinity Map in **Appendix A**.

The proposed project begins at the Lancaster and Dallas city limits at the IH 35E and IH 20 interchange and travels north along IH 35E ending at Eighth Street in the southern part of the city of Dallas. On U.S. 67 the project limits begin at the U.S. 67 and FM 1382 intersection in Cedar Hill and travels in a northerly direction through Duncanville, DeSoto, and into the southern part of Dallas. The project would generally follow the existing alignment; however,

portions of IH 35E and/or U.S. 67 may be shifted to the east and/or west to accommodate the expansion. See Figure 2: Vicinity Map and the Figure 3: Project Centerline Map in **Appendix A**.

The proposed project can be found in the current conforming North Central Texas Council of Governments (NCTCOG) Mobility 2025: The Metropolitan Transportation Plan-Amended April 2005. The recommended facilities on IH 35E are six mainlanes from IH 20 to U.S. 67 and ten mainlanes from IH 20 to Eighth Street. The recommended facility on U.S. 67 is six mainlanes from FM 1382 to IH 35E. The HOV lane recommendations consisted of one HOV on IH 35E from IH 20 to U.S. 67, two HOV lanes from U.S. 67 to Eighth Street, and one HOV lane on U.S. 67 from FM 1382 to IH 35E. Frontage road recommendations are two lanes in each direction with three lanes from Zang Blvd. to Marsalis Ave. The proposed project is listed in the 2006-2008 Statewide Transportation Improvement Program (STIP).

This Environmental Assessment (EA) is based on a roadway configuration (see **Table 1-1**) recommended as a result of the MIS analysis and updated traffic data which corresponds to the Mobility 2025: The Metropolitan Transportation Plan-Amended April 2005. The proposed improvements on IH 35E would consist of six mainlanes, one reversible HOV lane, and two lane frontage roads from IH 20 to U.S. 67 and ten mainlanes with two reversible HOV lanes from U.S. 67 to Eighth Street. There would be no frontage roads between U.S. 67 and Twelfth St./Beckley Avenue. Two lane frontage roads would begin at this point and continue to Eighth Street. U.S. 67 would consist of six mainlanes, two lane frontage roads, and one reversible HOV lane from FM 1382 to IH 20 and two reversible HOV lanes from IH 20 to IH 35E. All lane widths would be 12 ft. See the proposed typical sections in **Appendix B**.

**Table 1-1
Proposed Configuration
(Mobility 2025 – Amended April 2005, MTP year 2015)**

<u>Segment</u>		<u>Total Number of Main Lanes</u>	<u>Number of HOV Lanes</u>	<u>Number of One-way Frontage Rd. Lanes Either Side</u>
IH 35E from IH 20 to U.S. 67	Proposed	6	1	2
	Mobility 2025	6	1	2
IH 35E from U.S. 67 to Eighth Street	Proposed	10	2	2
	Mobility 2025	10	2	3
U.S. 67 from FM 1382 to IH 20	Proposed	6	1	2
	Mobility 2025	6	1	2
U.S. 67 from IH 20 to IH 35E	Proposed	6	2	2
	Mobility 2025	6	2	2

Reversible HOV lanes are defined as lanes that parallel the mainlanes that are for exclusive use by vehicles with two or more people and certain one-person vehicles. Merging opportunities within the project limits would be improved by redesigning entrance and exit ramps and improving intersections within the project corridor. Frontage roads would be reconstructed and one new frontage road is proposed on the east side of IH 35E south of Marsalis. Frontage roads

are defined as separate lanes paralleling the mainlanes that facilitates the ingress and egress of vehicles to and from the mainlanes. New sidewalks are being proposed adjacent to the Dallas Zoo along Ewing Ave and along the frontage road. In addition, handicap accessible ramps would be constructed at all intersections.

Users of the HOV lanes would benefit from reduced travel times, ability to bypass congested highways and reduced vehicle operation and maintenance costs. The DFW metropolitan area would see a reduction in congestion, improved air quality, and a conservation of natural resources.

The proposed typical right-of-way (ROW) width varies along IH 35E from approximately 313 ft to 472 ft and along U.S. 67 from approximately 306 ft to 436 ft. The typical cross-section would vary within the project corridor. The proposed typical sections for the different segments of the proposed project can be seen in **Appendix B**.

Bridge crossings would occur at Five Mile Creek, Woody Branch, Ten Mile Creek, Bentle Branch, Ricketts Branch, and Mauk Branch. The proposed design speed is 70 miles per hour (mph) on the main lanes and 45 mph on the frontage roads.

The proposed bridge structures would be of similar structure type to the existing bridges consisting of concrete decks and pre-stressed concrete beams supported by multiple column concrete piers. The 39 existing bridges would be replaced except for the structure at Tenth Street. The 10th Street Bridge would be removed and not replaced. Each of the proposed bridge structures would be wider and longer than the existing bridge due to the addition of freeway lanes, HOV lanes, arterial lanes, and u-turns.

Many of the existing ramps would be shifted and reconstructed to provide improved merging opportunities. Some areas would have the existing entrance and exit ramps switched to provide greater separation distance to the frontage roads. Some ramps would be removed with ramps added in other locations. **Table 1-2** details the ramp improvements. Proposed Schematics can be viewed in **Appendix C**.

**Table 1-2
Ramp Improvements**

Section	Segment	Comments
IH 35E Corridor	IH 20 Interchange	▪Rebuild IH 20 direct connect ramps to increase capacity.
	Wheatland Road to Camp Wisdom Road	▪No change to ramp locations. Reconstruct existing ramps.
	Camp Wisdom Road to Laureland Road	▪Existing entrance and exit ramps switched.
	Laureland to Loop 12	▪Existing entrance and exit ramps switched. ▪Remove loops at Loop 12.
	Loop 12 to Overton	▪No change to ramp locations. Reconstruct existing ramps.
	Overton to Kiest	▪ No change to ramp locations. Reconstruct existing ramps.
	Kiest to Saner	▪Remove the southbound exit ramp to Kiest. ▪Remove all existing ramps at Saner.

Section	Segment	Comments
	Illinois to Louisiana	<ul style="list-style-type: none"> ▪No change to ramp locations. Reconstruct existing ramps.
	Louisiana to Clarendon	<ul style="list-style-type: none"> ▪No change to ramp locations. Reconstruct existing ramps.
	Clarendon to Marsalis	<ul style="list-style-type: none"> ▪Zang northbound flyover moved south. ▪Remove northbound direct exit to Beckley Avenue. ▪Marsalis northbound exit moved south. ▪Northbound 12th Street entrance ramp moved north. ▪Southbound Marsalis entrance ramp and Twelfth Street exit ramp switched.
	Marsalis to Eighth Street	<ul style="list-style-type: none"> ▪Remove Eighth Street southbound entrance ramp. ▪Exit to Marsalis shifted north. ▪Remove northbound Ewing entrance ramp. ▪Southbound frontage road at Ewing would be below grade. No direct access from southbound frontage road to Ewing.
U.S. 67 Corridor	FM 1382	<ul style="list-style-type: none"> ▪Remove northbound Beltline Road entrance ramp. ▪Remove northbound exit to Pleasant Run. ▪FM 1382 northbound entrance ramp shifted north. ▪Remove southbound Pleasant Run entrance ramp. ▪Remove southbound Beltline Road exit. ▪FM 1382 southbound exit ramp shifted north.
	Pleasant Run to Joe Wilson Road	<ul style="list-style-type: none"> ▪Add northbound entrance ramp from Pleasant Run. ▪Add southbound exit ramp to Pleasant Run.
	Joe Wilson Road to Wintergreen Road	<ul style="list-style-type: none"> ▪Existing entrance and exit ramps switched.
	Wintergreen Road to Main Street	<ul style="list-style-type: none"> ▪Remove northbound Wintergreen Road entrance ramp. ▪Add northbound exit to Main Street. ▪Remove southbound exit to Wintergreen Road. ▪Add southbound Main Street entrance.
	Main Street to Danieldale	<ul style="list-style-type: none"> ▪Existing entrance and exit ramps switched.
	Danieldale to Cockrell Hill	<ul style="list-style-type: none"> ▪Existing entrance and exit ramps switched.
	Cockrell Hill to Wheatland Road	<ul style="list-style-type: none"> ▪Remove northbound Cockrell Hill entrance ramp. ▪Remove southbound Wheatland Road entrance ramp.
	IH 20 Interchange	<ul style="list-style-type: none"> ▪Complete rebuild of interchange. No lane additions. Widen interchange to allow for HOV lanes. Widen direct connectors.
	Wheatland Road to Camp Wisdom Road	<ul style="list-style-type: none"> ▪Southbound Wheatland Road exit shifted south. ▪Add northbound Wheatland Road entrance ramp.
	Camp Wisdom Road to Redbird Lane	<ul style="list-style-type: none"> ▪Existing entrance and exit ramps switched.
	Redbird Lane to Hampton Road	<ul style="list-style-type: none"> ▪No change to ramp locations. Rebuild existing ramps.
	Hampton Road to Loop12	<ul style="list-style-type: none"> ▪Add direct HOV ramp to/from the Red Bird transit center. ▪Remove loop ramps at Loop 12 and add slip ramps.
	Loop 12 to Polk Street	<ul style="list-style-type: none"> ▪Remove Polk Street southbound entrance ramp. ▪Existing Polk Street northbound exit shifted south.
	Polk Street to Kiest Boulevard	<ul style="list-style-type: none"> ▪Southbound existing entrance and exit ramps switched. ▪Reconstruct existing northbound ramps.

At two locations in the project corridor, cross-streets would no longer be continuous. Tenth Street would no longer cross under IH 35E and Pentagon would no longer be continuous under U.S. 67. These are to be removed to allow for the placement of ramps as these streets have relatively low traffic volumes and adjacent cross streets are within 1000 ft to 2000 ft. In addition, Texas u-turns are recommended at three of the adjacent streets to facilitate traffic movement. An overpass for a hike/bike trail is proposed at Pentagon, adjacent to Five Mile Creek, which would allow for pedestrians to cross the proposed facility.

The design schematic encompassing the proposed improvements is available for inspection at the TxDOT Dallas District Office, 4777 E. Hwy 80, Mesquite, Texas 75150-6643.

B. Purpose and Need

The National Environmental Policy Act of 1969 (NEPA) requires that the social, economic, and natural environmental impacts of any proposed action of the Federal government be analyzed for decision-making and public information purposes. This EA focuses on the choice of the best solution for relieving traffic congestion and improving design deficiencies given the current state of infrastructure, limited financial resources, environmental restraints, and the needs of the local and regional communities. This document presents the alternatives that have been developed through a process involving the Federal Highway Administration (FHWA), TxDOT, local cities, Dallas County, project consultants, local officials, and the public.

The purpose of the proposed IH 35E/U.S. 67 project is to develop long-term transportation improvements for this corridor and southern Dallas County. The proposed project is designed to enhance the regional and national transportation system by increasing capacity, reducing traffic congestion, improving mobility, improving design deficiencies, and improving system linkages. The current transportation network in the project area is insufficient to accommodate the increased demand projected by Transportation Planning and Programming (TPP) and the NCTCOG. The existing and proposed typical sections are presented in **Appendix B** and the proposed schematics can be viewed in **Appendix C**.

The alternatives evaluated in this document would be considered in terms of how well they serve the following purposes while meeting the underlying needs.

Increase capacity

Traffic volumes exceeding capacity is the result of major population growth in the study area which has resulted in traffic congestion during the peak periods. Several sections in the study area do not have adequate capacity to accommodate the traffic volumes during the peak period. These sections include the IH 35E/U.S. 67 Interchange, U.S. 67/Loop 12 Interchange, and the IH 20/U.S. 67 Interchange.

Reduce traffic congestion

The traffic capacity constraints of existing streets and alternate north/south routes near the IH 35E/U.S. 67 corridors and limitations on the availability of ROW for major capacity improvements have created and would intensify congestion. The volume of heavy truck traffic associated with the NAFTA route is anticipated to increase. Adding additional travel lanes

would reduce the number of vehicles per lane per mile of roadway, thus reducing congestion along the route.

Improve mobility

Limited mobility increases the amount of time spent moving people and goods from one point to another. Economic costs associated with traffic congestion have a direct effect on the competitiveness of the area and its ability to create and sustain long-term employment opportunities. The proposed project would improve mobility in southern Dallas County by encouraging transit use and ridesharing, addressing peak period directional distribution and adding capacity.

Improve design deficiencies

Although the freeway met design standards at the time of its original construction, there are elements that no longer meet current design standards. Design deficiencies include sharp horizontal curves, ramps and merge lanes that do not meet current design standards, inadequate lane and shoulder widths, and inadequate vertical clearances. Each of these design elements would be updated to improve freeway operations.

Improve system linkage

The northern limit of the proposed project connects with another planned TxDOT project. Project Pegasus proposes to redesign IH 30 from Sylvan Avenue to IH 45, and IH 35E from Eighth Street to Empire Central Drive (north of SH 183). The improvements proposed in this EA would merge with the proposed improvements of Project Pegasus with IH 35E/U.S. 67 to provide a smooth transition. Along the southern limit of the project TxDOT, is constructing highway improvements on IH 35E from IH 20 south to Parkerville Road.

The steady growth in southern Dallas County and counties immediately south has created a need for considerable improvements to the existing transportation system. This growth pattern is anticipated to continue and necessitates substantial transportation improvements to accommodate the projected increases in traffic demand to the already insufficient transportation system in the area. Due to traffic congestion, possible delays in emergency services, limited mobility and roadway design deficiencies additional capacity is needed to accommodate existing and predicted population growth in the traffic demand corridor. The following paragraphs describe the history, population trends and traffic data for the project area.

History of the Outdated Existing Facility

IH 35E was originally constructed in the late 1950's and early 1960's as part of the Interstate Highway System that was developing throughout the United States. The existing U.S. 67 freeway was constructed in the 1960's and 1970's, as an improvement to the two-lane U.S. 67 that connected Dallas to Midlothian and points south and west.

When IH 35E and U.S. 67 were originally constructed, the cities south of Dallas had a more agriculturally based economy. As the population in southern Dallas County and Ellis County has grown, commerce in this area has increased. Although design standards were adequate when first constructed, the increase in traffic has put increased demand on the existing facility.

Since their initial construction, additions to the existing facilities have been implemented to help accommodate the increased demand. Interim HOV lanes were constructed on IH 35E and U.S. 67. IH 35E contains a single reversible HOV lane from U.S. 67 to Colorado Boulevard. U.S. 67 contains two concurrent flow HOV lanes from just north of IH 20 to IH 35E. The HOV project was the result of a partnership between the TxDOT and Dallas Area Rapid Transit (DART). These HOV lanes helped to relieve congestion for the short-term; however they did not completely mitigate the congestion problem.

Population Trends

By the year 2025, it is projected that the population of Dallas County would increase by 23.7%, over the population from the 2000 census. Ellis County, immediately south of Dallas County and the southern project limits, is projected to increase its population by 239.5% over the population from the 2000 Census. Each of the cities adjacent to IH 35E and U.S. 67 along the project corridor is expected to increase in population. Evaluating the total population of all five cities within the proposed project area and their projected 2025 populations, this area is expected to grow by 283,740 people, or 21.4%. **Table 1-3** shows the county and city population trends.

Table 1-3
Population Trend

County/ City	Census Population Data		Growth 2000-2025	Percent Growth 2000-2025
	2000	2025		
Dallas County	2,218,899	2,746,427	527,528	23.7
Ellis County	111,360	378,161	266,801	239.5
Cedar Hill	32,093	72,478	40,385	125.8
Dallas	1,188,580	1,375,983	187,403	15.7
DeSoto	37,646	57,515	19,869	52.7
Duncanville	36,081	37,714	1,633	4.5
Lancaster	25,894	60,344	34,450	133.0
TOTALS	1,320,294	1,604,034	283,740	21.4

*Source: North Central Texas Council of Governments and U.S. Census Bureau, *Census 2000*.

Current and Future Traffic Levels

According to data from TPP the existing (2010) and projected unconstrained (2030) vehicles per day in the project corridor with the percent increase are shown in **Table 1-4**. The existing vehicles per day (VPD) are anticipated to increase from an average of 126,733 VPD in 2010 to an average of 182,467 VPD in the year 2030. This is an average increase of approximately 44%. The 2030 volumes represent the unconstrained demand, as if there was unlimited capacity on the IH 35E and U.S. 67 freeways. However, in reality, the capacity of the freeways limits the vehicular volume. Nonetheless, these unrestricted projections show major increases in demand throughout the corridor. The daily traffic volumes represent the total freeway volumes in a 24-hour period.

**Table 1-4
Existing and Projected Unconstrained Traffic Volumes (vehicles per day)**

	2010 VPD	2030 VPD	Percent Increase
IH 35E from Eighth Street to the IH 35E/U.S. 67 Split	190,200	274,400	44.3
IH 35E from IH 35E/U.S. 67 Split to IH 20	90,400	129,800	43.6
U.S. 67 from IH 35E/U.S. 67 Split to FM 1382	99,600	143,200	43.8

Traffic Volume Source: Transportation Planning and Programming (TPP).

C. Related Studies and Relevant Documents

East Corridor Major Investment Study:

The East Corridor Study was a DART study conducted between Summer 2001 and Fall 2002 to provide multi-modal transportation solution in the IH 30 and US 80 corridors, east of downtown Dallas. Transportation improvements in this corridor may impact the traffic demand to and from the IH 35E/U.S. 67 MIS study area.

IH 35E/U.S. 67 Major Investment Study:

The study was completed in 2003 and helped to identify and develop long-term improvements for the IH 35E and U.S. 67 corridors. The overall goal of the effort was to provide solutions to meet the projected increases of the design year (2030). The MIS evaluated freeway and non-freeway/HOV alternatives.

Loop 12/IH 35E:

The Loop 12/IH 35E TxDOT project was done to provide multi-modal transportation solutions to the Loop 12/IH 35E corridors from Spur 408 to IH 635. Loop 12 capacity improvements may impact the traffic demand in the study area, because Loop 12 is parallel to the IH 35E/U.S 67 MIS study corridor. In December 2002, a Finding of No Significant Impact was obtained.

Mobility 2025 – Amended April 2005:

This plan is prepared by the NCTCOG and defines transportation systems and services in the DFW metroplex. It serves as a guide for the expenditure of state and federal funds through the year 2025. The plan addresses regional transportation needs that are identified through forecasting current and future travel demand, developing and evaluating system alternatives, and selecting those options which best meet the mobility needs of the region.

Project Pegasus:

The focus of this study is to relieve traffic congestion along two major Interstate Highways directly serving Downtown Dallas. The limits are the IH 30/IH 35E interchange on the western edge of downtown Dallas, the depressed portion of IH 30 south of downtown, and the portion of IH 35E from Eighth Street to SH 183. Project Pegasus received environmental clearance (Finding of No Significant Impact) on July 28, 2005.

South Outer Loop (Loop 9) Major Investment Study (MIS) and Environmental Impact Statement:

Dallas County is currently conducting a comprehensive assessment and evaluation of surface transportation needs and alternatives within the Loop 9 corridor. The corridor extends from the southern extension of SH 190 (President George Bush Turnpike) to IH 20 in Mesquite to the

proposed southern extension of SH 360 in Tarrant and Ellis Counties. This effort focuses on the need for a freeway to facilitate east-west movements in Southern Dallas County as well as enhance economic and sustainable growth in the corridor.

Transportation Improvement Plan (TIP):

The TIP is a staged, multiyear listing of surface transportation projects for funding by federal, state, and local sources within the DFW metroplex. It is developed through a cooperative effort of the NCTCOG Regional Transportation Council, TxDOT, local governments, and transportation authorities. The TIP contains projects with committed funds over a multi-year period.

Trinity Parkway:

This project proposed by the North Texas Tollway Authority (NTTA) would provide a parkway/reliever route to accommodate traffic demand through downtown Dallas. The current plan is addressing direct connection ramps between the Trinity Parkway and IH 35E, south of downtown Dallas. The NTTA is currently addressing comments on the Draft Environmental Impact Statement (DEIS), which was signed on January 28, 2005.

D. Logical Termini

The proposed project begins on IH 35E at the IH 20 interchange. This is an east-west interstate located south of Dallas providing access to IH 35E for individuals living in Lancaster, DeSoto, and other cities south of Dallas. A TxDOT improvement project is already underway for a section of IH 35E immediately south of IH 20 (IH 20 to Parkerville Road). The IH 35E segment ends at Eighth Street. Eighth Street is an east-west community collector for the Oak Cliff neighborhood of Dallas and serves as a minor collector for the DFW metroplex. Another TxDOT project, Project Pegasus, begins at this point and continues north.

The U.S. 67 segment begins at FM 1382. This Farm to Market road provides access to U.S. 67 for individuals in Cedar Hill, DeSoto, and the southwestern portion of the city of Dallas. It also provides access to Joe Pool Lake from Dallas, DeSoto, Duncanville, and Cedar Hill. The U.S. 67 segment ends as its merge into IH 35E.

E. Right of Way (ROW) Requirements and Utility Adjustments

The existing ROW varies along IH 35E from approximately 244 ft to 435 ft. The existing ROW along U.S. 67 varies from approximately 305 ft to 469 ft. The proposed ROW along IH 35E varies from approximately 313 to 472 ft and along U.S. 67 it varies from approximately 306 to 436 ft. Approximately 23 additional acres, including approximately 18 acres along IH 35E and five acres along U.S. 67, would be necessary for the proposed ROW. TxDOT would be responsible for the ROW acquisitions. ROW would be taken from the following land use types along the proposed roadway including residential, commercial, recreational, and vacant land. An estimated nine residences and 27 businesses would be displaced or relocated. The absolute number of displacements would not be available until the precise ROW acquisition line has been determined. See the ROW Acquisitions and Displacements section under Socio-Economic Impacts for more information on displacements.

Utilities

Several utility systems are present in the area of the proposed improvements. These utilities include Southwestern Bell Telephone, gas lines, cable television, electric lines, water lines, sanitary sewer lines, Southwestern Bell fiber optic vaults, a TxDOT electric pad, and a TxDOT fiber communications hub.

While it may be necessary to relocate some existing utilities, the existing utility lines are not expected to pose major problems to the construction, operation, and maintenance of the proposed improvements. Detailed information on the utility lines would be evaluated during the design phase of the project in order to identify the need to integrate the proposed improvements and utility systems into the design plans. All of the utilities can be either adjusted or relocated prior to the construction of the proposed project using standard TxDOT procedures.

F. Project Cost Estimate

This project's funding is divided into three separate construction sections (CSJs 0261-02-044, 0261-03-030, 0442-02-088) and all are funded from Category 3, National Highway System. The estimated total construction cost of the project is \$1,000,000,000. The ROW portion of that estimate is approximately \$34,580,000. The proposed project is listed in the 2006-2008 STIP.

G. Project Support

One goal of The Southern Gateway project was to provide a decision-making process built on the consensus of the stakeholders. The stakeholders for this project included community interests (residents, commuters, businesses, freight carriers, environmental groups, and others), local elected officials, and involved agencies. While "consensus" does not mean a unanimous decision, every effort was made to satisfy the concerns of all groups. A consensus approach does not give veto power to individuals, nor does it allow the concerns of a group to be swept aside by a simple majority of the participants. The goal was to formulate a plan of action which had broad acceptance from the community at-large, and which addressed and balanced the legitimate concerns of the involved parties.

The Southern Gateway team directly coordinated efforts with three work groups designed to provide input to the study team and review documentation. The three workgroups included a policy work group consisting of elected officials and transportation leaders; a community work group composed of residents, businesses, institutions, and environmental organizations; and a staff work group consisting of technical staff from government and regulatory agencies.

Support for the Southern Gateway project included City Council members, Chambers, neighborhood associations, citizens, and interested stakeholders from all five cities. In addition to the various presentations made to work group members, over 49 presentations have been made to civic groups, city councils, chambers, neighborhood associations, agencies and other interested stakeholder groups.

The Southern Gateway team has conducted three series of open house/public meetings in the Duncanville and Dallas areas. In addition, the study team held two community forums to allow citizens additional opportunities to receive project information and provide valuable input. In an

effort to reach as much of the community as possible, one meeting was held along the IH 35E corridor in Dallas and the other along the U.S. 67 corridor in Duncanville.

Community Forums:

May 19, 2003
Beckley Saner Center
114 Hobson
Dallas, TX

Sept. 15, 2003
Beckley Saner Recreation Center
114 West Hobson
Dallas, TX

Sept. 18, 2003
Ramada Inn Duncanville
711 Camp Wisdom Rd.
Duncanville, TX

Public Meetings:

April 15, 2002
Beckley Saner Center
114 Hobson
Dallas, TX

April 18, 2002
Ramada Inn
711 Camp Wisdom Rd
Duncanville, TX

July 15, 2002
Ramada Inn
711 E. Camp Wisdom Rd.
Duncanville, TX

July 18, 2002
Beckley Saner Center
114 W. Hobson
Dallas, TX

Nov. 18, 2002
Ramada Inn Duncanville
711 East Camp Wisdom Rd.
Duncanville, TX

Nov. 21, 2002
Beckley Saner Center
114 W. Hobson
Dallas, TX

In addition to three newsletters and an information packet, an interactive web site was created for stakeholders interested in providing comments about the proposed project. All project communication tools were provided in a Spanish and English format.

One of the most impressive features in the Southern Gateway project has been the support received from elected officials and the community-at-large. Although this project included the cities of Duncanville, Dallas, DeSoto, Cedar Hill and Lancaster, equal representation and support was provided in the form of community leaders and officials to help determine feasible alternatives for the IH 35E and U.S. 67 study area. Through interactive discussions and work groups, these leaders represented citizens throughout the five cities and brought community concerns to the table.

The Policy Work Group was comprised of political representatives and senior staff of local agencies considered to have a role in funding, permitting, and processing transportation

improvements within the study area. The responsibilities of the Policy Work Group members were to:

- Offer suggestions and guide the development of the study,
- Receive and access reports on progress and schedules,
- Coordinate with their respective agencies
- Provide oversight of major activities associated with the study.

The Policy Work Group met on a monthly basis during the study, and all meetings were open to the public. The work group was composed of representatives from the following organizations:

- Federal Highway Administration
- The Cities of DeSoto, Duncanville, Dallas, Lancaster, Cedar Hill
- North Texas Tollway Authority
- Dallas County
- The Texas House of Representatives
- The Texas State Senate
- Texas Department of Transportation
- Dallas Regional Mobility Coalition
- North Central Texas Council of Governments
- Dallas Area Rapid Transit
- U.S. Army Corp of Engineers
- Texas Transportation Institute
- Consultants

A public hearing would be held for this project following further review of this document.

II. DESCRIPTION OF EXISTING FACILITY

A. Existing Facility

The existing IH 35E section between IH 20 and U.S. 67 consists of six freeway mainlanes with two lane frontage roads. The frontage roads are continuous and one-way throughout this section. The lane widths on the mainlanes and frontage roads are 12 ft. There are 10 ft shoulders inside and outside of the mainlanes. A concrete traffic barrier is present between the northbound and southbound lanes. The frontage roads contain two ft shoulders on either side. The existing ROW is approximately 297 to 378 ft. There are no HOV lanes in this section. See Sheet 1 of 4 in **Appendix B**.

IH 35E from U.S. 67 to Eighth Street consists of eight mainlanes, one barrier separated reversible HOV lane, and two lane non-continuous frontage roads. The lane widths of the mainlanes, HOV lanes, and frontage roads are 12 ft. The mainlanes contain non-continuous 10 ft shoulders, especially the inside shoulder. The HOV lanes contain one 10 ft and a four ft shoulder each of which is non-continuous. The frontage roads contain two ft shoulders. The ROW varies from approximately 244 to 435 ft. All frontage roads are one-way. Non-

continuous sidewalks are present in some locations along IH 35E. See Sheet 2 of 4 in **Appendix B**.

The existing U.S. 67 section between FM 1382 and IH 20 is four freeway mainlanes with two lane frontage roads. The lane widths on the mainlanes and frontage roads are 12 ft. The mainlanes contain 10 ft shoulders with a 24 ft median between the northbound and southbound lanes. The frontage roads contain two ft shoulders. The frontage roads are one-way and continuous in this section. The ROW width is approximately 314 to 469 ft. See Sheet 3 of 4 in **Appendix B**.

From IH 20 to Loop 12 the roadway consists of four freeway mainlanes, a concurrent flow HOV in each direction, and continuous frontage roads. From Loop 12 to IH 35E the existing facility consists of six freeway mainlanes, a concurrent flow HOV lane in each direction, and continuous frontage roads. The lane widths on the mainlanes, HOV, and frontage roads are 12 ft. The mainlanes contain non-continuous 10 ft shoulders and are separated by a concrete traffic barrier. The frontage roads are continuous, one-way, and contain two ft shoulders. The ROW width between IH 20 and IH 35E is approximately 324 to 436 ft. Non-continuous sidewalks are present in some locations along U.S. 67. See Sheet 4 of 4 in **Appendix B**.

There are a total of 39 bridges on IH 35E and U.S. 67, 33 on cross streets and six creek crossings. This total excludes bridges associated with the interchanges. Existing bridges consist of a concrete deck supported by pre-stressed concrete and steel beams. The super structure is composed primarily by pre-stressed concrete beams and is supported by multiple column concrete piers.

B. Surrounding Terrain and Land Use

The topography of the project area reflects a gentle slope from south to north and from east to west. The IH 35E segment has an elevation at the north of 450 feet and extends upward to an elevation of 620 feet at the south. The U.S. 67 segment of the project has an elevation of 566 feet and extends upward to an elevation of 800 feet at the southern terminus.

Six creeks intersect with project corridor. These are Cedar Creek, Five Mile Creek, Woody Branch, Mauk Branch, Ten Mile Creek, and Ricketts Branch.

Soils in the project area are predominantly black, calcareous clays. The soils are moderately deep and well drained. Due to the heavy concentration of buildings, residences and roadways, a large portion of the project area is classified as Urban land. Soil series located along the project route (see **Table 2-1**) are Austin, Brackett, Dalco, Eddy, Ferris, Frio, Houston Black, Lewisville, and Stephen.

Table 2-1
Soil Descriptions

Soil Series	Description
Austin	moderately deep, well drained, and clayey
Brackett	shallow, well drained, and loamy soils
Dalco	moderately deep, moderately well drained clayey soils in shallow valleys
Eddy	very shallow and shallow, well drained sandy soils
Ferris	deep, well drained, sloping and strongly sloping clayey soils
Frio	Deep, well drained clayey soils.
Gowen	deep, well drained, and loamy soils on flood plains of the smaller streams
Houston Black	deep, moderately well drained clayey soils
Lewisville	deep, well drained, clayey soils that formed in old alluvium on stream terraces
Stephen	shallow, well drained clayey soils on uplands

Based on aerial photography and site visits, a general land use analysis of the study area reveals that approximately 50 percent of the land is residential (single and multi-family) development. Undeveloped, designated open-space or park land accounts for approximately 40 percent of the study area. These tracts of open space are generally located south of IH 20, west of U.S. 67, and east of IH 35E. The cities of Cedar Hill, DeSoto, and Lancaster have much larger areas of undeveloped or preserved land than the cities of Dallas and Duncanville. The remaining 10 percent of the land in the study area is commercial (mostly highway retail strip development), industrial, and miscellaneous tracts such as schools and hospitals.

Following is a description of the land use specific to freeway segments in the study area:

IH 35E South (IH 20 to U.S. 67): The land use along IH 35E between U.S. 67 and IH 20 is primarily a combination of retail, vacant, and single family homes. Two primary locations of single family homes in this section are the east side of IH 35E, north of Loop 12, and the west side of the freeway between Wheatland Road and Camp Wisdom Road. Laureland Cemetery is located on the east side of the freeway in this segment. Five Mile Creek crosses IH 35E near Loop 12. One Dallas Independent School District (DISD) facility, the Nolan Estes Plaza, is located on the east side of IH 35E just south of U.S. 67 (see **Appendix F: Photographs**). A private school, Faith Family Academy, is located on the west side of IH 35E just south of U.S. 67. Ricketts Branch, Woody Branch, and Five Mile Creek cross IH 35E in this section. Numerous churches are adjacent to the ROW in this section.

IH 35E North (U.S. 67 to Eighth Street): Beginning at the north end of the study area (Eighth Street), the west side of IH 35E is primarily retail and office space and the east side is primarily residential. From Ewing Street to Clarendon Street, the land use is generally retail. The Dallas Zoo is located on the east side of IH 35E in this section. South of Clarendon Street, the IH 35E freeway crosses over the DART rail line and Cedar Creek. Between Cedar Creek and the IH 35E/U.S. 67 interchange, the primary land use is residential, with scattered retail. McAdams Cemetery is located on the west side of IH 35E just south of Illinois. This is a small, older, private cemetery that is further discussed in the Historical Sites section.

U.S. 67 South (F.M. 1382 to IH 20): Multi-family residential, retail, and vacant land are the primary land uses from the IH 20 interchange to Daniieldale Road. The primary land use south of Daniieldale Road consists of vacant land with some single family homes. Retail land use

increases approaching the FM 1382 interchange. Several branches of Ten Mile Creek cross U.S. 67 within this segment. Ten Mile Creek and Mauk Branch cross U.S. 67 in this section. Numerous churches are adjacent to the ROW in this section.

U.S. 67 North (IH 20 to IH 35E): North of Red Bird Lane, residential is the primary land use with some retail development. Dallas Executive Airport is located on the west side of the freeway in this segment. South of Red Bird Lane, vacant land and retail are the primary land uses, although there are some residential areas. Southwest Center Mall is located at the northwest corner of U.S. 67 and IH 20. In the section north of IH 20, there are two parks located adjacent to the U.S. 67 freeway, Thurgood Marshall Recreation Center and Boulder Park. Five Mile Creek and Woody Branch cross U.S. 67 within this section.

C. Traffic Projections

The 2030 projected unconstrained VPD within the project limits is expected to increase on average by approximately 44% from the existing 2010 VPD. Unconstrained is defined as unlimited capacity on the IH 35E and U.S. 67 freeways. These traffic volumes were provided by TPP. Refer to **Table 1-4 Existing and Projected Unconstrained Traffic Volumes**.

The daily traffic volumes represent the total freeway volumes in a 24-hour period. A typical weekday hourly distribution on IH 35E, north of the U.S. 67 merge, is shown in **Table 2-2**. From **Table 2-2**, it can be seen that the highest volume of northbound IH 35E traffic, over 7,700 vehicles per hour (vph), occurs during the 7 AM hour. On southbound IH 35E, the highest volume of traffic, over 7,900 vph, occurs during the 5 PM hour.

Table 2-2
IH 35E Weekday Traffic Volumes
(Mainlanes and HOV)

Time of Day	Vehicles Per Hour	
	Northbound	Southbound
1:00 AM	845	1,257
3:00 AM	430	692
5:00 AM	1,157	539
7:00 AM	7,727	2,902
9:00 AM	6,568	3,319
11:00 AM	4,378	3,643
1:00 PM	4,470	4,132
3:00 PM	4,658	5,525
5:00 PM	4,748	7,961
7:00 PM	4,600	7,242
9:00 PM	3,148	4,405
11:00 PM	2,576	3,455

Data Source: S148 ATR Station, April 18, 2002

III. ALTERNATIVES

Beginning in 2001, TxDOT utilized the MIS process to evaluate alternatives such as arterial improvements, rail improvements, bus transit improvements, bicycle/pedestrian facilities, and congestion management system (CMS) strategies for the IH 35E/U.S. 67 corridor. The arterial,

hike/bike, rail, and TDM/TSM strategies identified in the long-range plan were recommended in addition to several other arterial improvements recommended as part of this project. However, they did not accommodate all of the transportation demand in the study area in the design year. The alternatives analyzed and discussed below address roadway alternatives.

A. Alternative A: No Build

The No-Build Alternative (Alternative A), representing the case in which the proposed project is not constructed, was evaluated first to mitigate the transportation congestion. The planned roadway improvements and Transportation Demand Management (TDM) measures included in the Mobility 2025 – Amended April 2005 are assumed to be included in the baseline condition for the study area. Other transportation improvements, including those identified in the Mobility 2025 – Amended April 2005, may or may not be constructed depending on project development and funding availability issues for each such improvement. All of these improvements comprise Alternative A.

Various costs are associated with the implementation of Alternative A. The maintenance of the existing system becomes higher the longer the improvements and/or reconstruction are postponed. Vehicle operating costs increase as motorists continue to utilize under-designed and inadequate facilities. The monetary value of time lost by motorists due to lower operating speeds is increased on the congested roadway. There are also intangible costs associated with the impacts to emergency vehicles by longer response times.

The No Build Alternative includes the existing transportation system plus any additional future transportation projects that have been funded within the project corridor. This option was not considered a viable alternative since the projected growth in traffic demand would exceed the capacity of IH 35E/U.S. 67 without any improvements. This alternative would not increase capacity or reduce congestion to meet the projected future growth of the area. Design deficiencies of the existing facility would remain likely increasing safety concerns for users of the facilities. The overall regional mobility would be impaired. The linkage of this corridor with other adjacent TxDOT improvements would not occur and result in increased travel times, thus reducing mobility and increasing air quality concerns.

Although the non-freeway alternatives would mitigate the traffic congestion in the study area to some extent, they would not satisfy the 2025 transportation demand.

B. Alternative B: Build

Considering the projected growth patterns and population projections for the corridor, the Build Alternative (Alternative B) was evaluated to accommodate the projected traffic demand. Other factors considered included limited ROW and the cost and number of displacements associated with additional ROW needs. The growth and expansion of the cities adjacent to the corridor were considered as well as how best to accommodate their increased use of IH 35E and U.S. 67. The design deficiencies of the existing facilities also needed to be addressed. These design deficiencies include sharp horizontal curves, ramps and merge lanes that do not meet current design standards, inadequate lane and shoulder widths, and inadequate vertical clearances.

The freeway analysis was a two-step process. The first step, Phase I, was a fatal flaw analysis, and alternatives that had major impacts were eliminated from further evaluation. The second step, Phase II, of the freeway alternatives analysis was a more detailed analysis that would result in the identification of a preferred alternative. Due to major development in the study area, only freeway alternatives that followed the alignment were analyzed to minimize impacts. Each alternative/alignment was evaluated based on the following criteria: enhanced mobility and safety, engineering feasibility, cost effectiveness, and socio-economic and environmental impacts.

Due to the need to accommodate increased capacity, alleviate traffic congestion, correct existing roadway deficiencies to meet minimum TxDOT design standards, and provide smooth transitions to connecting roadways, the only build alternative considered was the expansion/reconstruction (Build) of the existing facility. This would consist of increasing the number of the mainlanes, ramp improvements, adding reversible HOV lanes, and improvements to frontage roads.

Alternative B would involve following the existing alignment and expansion of the existing facility. Ramping alternatives were developed during the MIS process with input from the public meetings and work groups. Ramp locations were shifted, added, or deleted to meet design standards and provide safe access to and from the roadways. The reversible HOV lanes were analyzed utilizing the projected traffic so as not to create a bottleneck at the IH 35E/U.S. 67 interchange.

The Build alternative would expand the existing IH 35E/U.S. 67 configuration with the addition of mainlanes, reversible HOV lanes, and improvements to frontage roads. This would reduce the high number of vehicles per lane by increasing the capacity along IH 35E/U.S. 67. The existing roadway design deficiencies such as inadequate vertical clearances, sharp turns, and short ramps would be addressed likely resulting in decreasing safety issues and maintenance costs. The proposed configuration would provide a smooth transition to and from adjacent roadways undergoing improvements. The overall mobility of the area, region, would be enhanced by reducing congestion in this corridor. Additional benefits would include improved air quality from reduced congestion on the roadway.

As an additional oversight analysis, a Value Engineering Study was conducted in June 2003. This study included planning, design and construction expertise from TxDOT, FHWA, NHTA and the consultant community. TxDOT documented the recommendations from this study and the resulting modifications to the proposed improvements.

The proposed schematic design has been completed and is described previously in this document.

Table 3-1 summarizes and compares the potential effects of both alternatives on project objectives and relevant issues.

**Table 3-1
Effects of Alternatives on Project Objectives**

Project Objectives	Alternative A – No Build	Alternative B – Build
Increase Capacity, Reduce Traffic Congestion, and Improve Mobility <i>Objective Indicator</i> Improved traffic flow	Traffic flow in the project study area would decrease as increased traffic volumes used an insufficient transportation network.	Traffic flow in the project study area would increase.
Improve Roadway Deficiencies <i>Objective Indicator</i> TxDOT’s minimum design standards	TxDOT’s current minimum design standards would not be met.	TxDOT’s current minimum design standards would be met.
Provide System Linkage <i>Objective Indicator</i> Compatible with other transportation and development plans.	Traffic flow would remain congested, bottlenecking between freeway segments.	A more cohesive flow of traffic would occur between freeway segments.

IV. POTENTIAL SOCIAL, ECONOMIC, AND ENVIRONMENTAL EFFECTS OF THE PREFERRED ALTERNATIVE

A. Regional and Community Growth

Population data at the census tract level for the year 2000 from the U.S. Department of Commerce, Census Bureau, has been used in this socioeconomic analysis. Census tract data provides the appropriate level of detail for an area that is sufficiently small to characterize the area of impact. See Figure 4: Census Tracts in **Appendix A**.

The DFW Metroplex is the ninth largest metropolitan area in the United States. Its population has been growing at a faster rate than the eight larger metropolitan regions. Today, the DFW Metroplex, the largest metropolitan area in Texas, is more populated than 27 states. The area accounts for approximately one-third of the Texas gross regional product, and is a leader in job growth.¹ According to the Texas Comptroller of Public Accounts, the DFW region experienced major growth during the last 30 years of the 20th century. Total value added within the region increased nearly four-fold, an average annual growth rate of 4.7 percent.²

The Dallas metropolitan statistical area (MSA) is comprised of Dallas, Denton, Collin, Ellis, Kaufman, Hunt, Henderson and Rockwall counties and experienced major growth in population during the 1990’s. The eight county area grew by 842,928 persons, from a population of 2,676,248 in 1990 to 3,519,176 in 2000, a 31.5 percent rate of growth. During that same period, Dallas County was ranked second in growth among Texas counties, as measured by the increase in the number of persons, growing by 366,089 persons. The NCTCOG 2030 Demographic

¹ North Texas Council of Governments. *The Metropolitan Transportation Plan Mobility 2025 Update Executive Summary*. page 4.

² Carole Keeton Strayhorn, Texas Comptroller of Public Accounts.. *Window on State Government- Texas Regional Outlook – The Metroplex Region*. September 2002.
<http://www.cpa.state.tx.us/ecodata/regional/metroplex/outlook.html>

Forecast projects Dallas County growing from a 2000 population of 2,232,500 to a population of 2,817,200 by 2030, an increase of 26 percent. The 10-county urban region is projected to grow 80 percent over the 30-year period, from 5,067,400 residents in 2000 to 9,107,200 residents in 2030.

Over the 30-year period, Dallas County is expected to attract an additional 784,300 jobs, a 45 percent increase since 2000. Non-construction employment in the NCTCOG Urban Region is expected to grow from 3,158,200 in 2000 to 5,416,800 in 2030, a 72 percent increase.

Extensive coordination occurred between the cities and the NCTCOG regarding potential future developments. The proposed project has taken into consideration the predicted 2030 demographics and economic developments. One planned development is the University of North Texas (UNT) at Dallas campus which will be located on 259 acres at Camp Wisdom Road and Houston School Road. Construction on the first building began in October 2005 and according to the UNT master plan, classes are scheduled to begin in January 2007. This would be the first public university in the city of Dallas. Coordination with UNT officials occurred throughout the planning process. It is anticipated that the project would benefit future economic development in the area by providing greater access to these opportunities.

B. Socio-Economic Impacts

Population Characteristics

The IH 35E/U.S. 67 study area is generally a low to moderate income area extending southward from the Dallas central business district (CBD). Between 1990 and 2000, the area grew by nearly 17 percent, from a population of 103,487 persons in 1990 to a population of 120,867 persons in 2000. This compares to a growth of 29 percent for the DFW Consolidated Metropolitan Statistical Area (CMSA) and 20 percent for Dallas County over the same decade. Population in the IH 35E section of the project area grew by 16.6 percent during the decade of the 1990's. The portion of the project area along U.S. 67 north of IH 20 grew by 13.3 percent during the same period. The greatest growth has occurred south of IH 20, in Cedar Hill. This area grew 31.1 percent during the decade. However, some portions of the study area and a larger area east of IH 35E south of the CBD experienced reductions in population between 1990 and 2000.

Minorities account for 73.3 percent of the project area population, 65.4 percent of the City of Dallas population, and 55.7 percent of the Dallas County population. The term minority is defined by the Federal Highway Administration (FHWA) as a person who is a Black or African-American, Asian-American, American Indian and Alaska native, or Hispanic or Latino. The Federal government considers race and Hispanic origin to be two separate and distinct concepts. Census 2000 uses the Office of Management and Budget (OMB) definition of Hispanic or Latino to be "a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race." While a number of racial groups are represented in the project area, the primary minorities are Blacks or African-Americans and Hispanics or Latinos.

North of IH 35E/U.S. 67 Split

The project area north of the IH 35E/U.S. 67 split is predominantly Hispanic or Latino (56.1 percent). Another 33.3 percent of the population is Black or African American. The white population accounts for only nine percent of the total population in this area.

IH 35E/U.S. 67 Split to IH 20

Traveling south through the project area, the proportion of the population that is white increases, the proportion that is Black or African American increases down to IH 20, and the proportion that is Hispanic or Latino decreases. The population in the area along U.S. 67 south of IH 20 is 51.3 percent white, 31.4 percent Black or African American, and 13.5 percent Hispanic or Latino. There is a small scattering of persons of other races throughout the project area.

Changes in population 1990 - 2000

During the 1990's a number of the study area neighborhoods experienced major change in their racial and ethnic composition. Overall, the project area experienced a reduced white population and considerable increases in the African American and Hispanic populations. **Appendix D** contains details on the changes of racial and ethnic populations in individual census tracts.

IH 35E

The area north of the IH 35E/U.S. 67 split became more heavily Hispanic. While the total population of the area grew by nearly 4,800 persons during the decade, the Hispanic population grew by more than 8,700, with major reductions in the white and African American populations.

A similar change in the population occurred in the IH 35E study area between the U.S. 67 split and IH 20. The Hispanic population increased during the decade by nearly 5,500 persons while the area experienced a decrease of more than 2,800 African Americans and nearly 1,600 white residents.

U.S. 67

The U.S. 67 study area grew substantially between 1990 and 2000. During that decade, the Hispanic population grew by more than 3,700 persons and the African American population grew by more than 2,200 persons. The white population lost more than 1,900 residents.

In the U.S. 67 study area south of IH 20, the African American population grew by more than 10,200 persons. The Hispanic population grew by more than 4,100 persons. There was a decrease in the white population of nearly 490 persons. The area also saw an increase in other racial groups, but their numbers were generally small.

Age Distribution

The age distribution of an area provides an indication of the area's economic and income potential. According to the 2000 census, the median age of the residents of the City of Dallas was 30.5, compared to 31.1 for Dallas County, 31.8 for the Dallas Primary Metropolitan Statistical Area (PMSA), 32.3 for Texas, and 35.3 for the United States. The population age composition of the study area and comparison areas is shown in **Table 4-1**. The area north of Loop 12 is generally characterized by a younger population as a result of a high proportion of the population being under the age of 18.

While the study area generally parallels the age composition of Dallas County, there are some census tracts with much higher percentages of persons 65 years of age and older. As shown in **Table 4-1**, seven of the project area census tracts have populations in which older persons, those who are 65 years old and older, exceed the county percentage. Adverse impacts to these persons could be more substantial than would be the case of younger persons. The adverse impacts could be relocation of the individual or family, relocation of close relatives or friends away from the neighborhood, or relocation of retail establishments frequented by the elderly.

Table 4-1
Age Composition of the Population - 2000

Area	Total Population	Age 0 – 17		Age 18 – 64		Age 65+		Median Age
		Number	Percent	Number	Percent	Number	Percent	
Dallas PMSA	3,519,176	986,051	28.0	2,262,124	64.3	271,001	7.7	31.8
Dallas County	2,218,899	617,421	27.8	1,423,614	64.2	177,864	8.0	31.1
City of Dallas	1,167,416	314,416	26.9	756,881	64.8	96,121	8.2	30.5
IH 35E North of U.S. 67 Split								
CT 48.00	4,361	1,389	31.9	2,882	66.1	90	2.1	24.5
CT 50.00	4,594	1,564	34.0	2,738	59.6	292	6.4	26.9
CT 54.00	5,287	1,662	31.4	3,079	58.2	546	10.3	31.1
CT 56.00	6,972	2,540	36.4	3,998	57.3	434	6.2	25.2
CT 60.01	4,507	1,642	36.4	2,626	58.3	239	5.3	24.5
CT 60.02	3,664	1,084	29.6	2,432	66.4	147	4.0	24.5
CT 62.00	6,086	2,153	35.4	3,440	56.5	493	8.1	26.5
TOTAL	35,471	12,034	33.9	21,195	59.8	2,241	6.3	N/A
IH 35E - U.S. 67 Split to IH 20								
CT 56.00	6,972	2,540	36.4	3,998	57.3	434	6.2	25.2
CT 59.02	3,722	1,021	27.4	2,284	61.4	417	11.2	37.4
CT 60.01	4,507	1,642	36.4	2,626	58.3	239	5.3	24.5
CT 60.02	3,664	1,084	29.6	2,432	66.4	147	4.0	24.5
CT 110.02	3,082	682	22.1	1,927	62.5	473	15.3	44.7
CT 111.03	3,847	1,172	30.5	2,355	61.2	320	8.3	31.4
CT 111.05	4,348	1,555	35.8	2,583	59.4	210	4.8	26.6
CT 112.00	3,437	872	25.4	2,050	59.6	492	14.3	38.8
TOTAL	33,579	10,568	31.5	20,255	60.3	2,732	8.1	N/A
U.S. 67 from IH 35E to IH 20								
CT 60.01	4,507	1,642	36.4	2,626	58.3	239	5.3	24.5
CT 60.02	3,664	1,084	29.6	2,432	66.4	147	4.0	24.5
CT 61.00	4,421	1,354	30.6	2,579	58.3	488	11.1	30.9
CT 109.01	5,879	1,903	32.4	3,898	66.3	78	1.3	25.9
CT 109.02	5,453	1,947	35.7	3,395	63.3	111	2.0	25.3
CT 110.01	6,948	1,779	25.6	4,385	63.1	784	11.3	37.6
TOTAL	30,872	9,709	31.4	19,315	62.6	1,847	6.0	N/A
U.S. 67 South of IH 20								
CT 165.09	5,048	1,345	26.6	3,219	63.8	484	9.6	37.0
CT 165.14	5,685	1,947	34.2	3,576	62.9	162	2.8	32.0
CT 165.15	5,917	1,567	26.5	3,830	64.7	520	8.8	37.1
CT 165.17	3,960	1,133	28.6	2,494	63.0	333	8.4	34.0
CT 166.05	2,992	949	31.7	1,642	54.9	401	13.4	29.6
CT 166.06	6,316	1,805	28.6	4,200	66.5	311	4.9	34.1
CT 166.07	3,728	1,117	30.0	2,576	69.1	35	0.9	26.2
CT 166.14	10,454	3,580	34.2	6,544	62.6	350	3.2	29.7

Area	Total Population	Age 0 – 17		Age 18 – 64		Age 65+		Median Age
		Number	Percent	Number	Percent	Number	Percent	
CT 166.15	3,873	1,428	36.9	2,371	61.2	74	1.9	29.8
CT 166.16	3,361	1,116	33.2	2,100	62.5	145	4.3	30.2
TOTAL	34,684	11,128	31.9	21,927	63.2	1,649	4.8	N/A
TOTAL PROJECT	112,292	35,4747	31.9	68,578	61.6	7,263	6.5	N/A

Source: U.S. Census Bureau. *Census 2000*.

Income Levels

Low income is defined as a household income at or below the Department of Health and Human Services poverty guidelines.³ The U.S. Census Bureau uses a set of income thresholds that vary by family size and composition to determine poverty level. In 2006 the weighted average threshold for a four-person family was \$20,000.

Table 4-2 shows the 1999 median household income and poverty status for the census tracts that comprise the study area. Generally, incomes tend to increase with distance from downtown Dallas. Generally, the median household incomes in project area neighborhoods north of IH 20 are substantially below those of Dallas County.

Table 4-2
Median Household Income and Poverty Status: 1999

Area	Population*	Median Household Income	Persons Below Poverty Level	
			Number	Percent
Dallas PMSA	3,463,539	\$48,364	384,146	11.1
Dallas County	2,183,570	\$43,324	293,267	13.4
IH 35E North of U.S. 67 Split				
CT 48.00	4,312	\$24,778	1,404	32.6
CT 50.00	4,538	\$25,496	1,214	26.7
CT 54.00	5,269	\$32,188	1,181	22.4
CT 56.00	6,951	\$27,803	1,792	25.8
CT 60.01	4,497	\$29,321	1,151	25.6
CT 60.02	3,664	\$25,348	956	26.1
CT 62.00	6,087	\$35,023	1,264	20.8
Total	35,318		8,962	25.4
IH 35E from U.S. 67 Split to IH 20				
CT 56.00	6,951	\$27,803	1,792	25.8
CT 59.02	3,680	\$29,115	755	20.5
CT 60.01	4,497	\$29,321	1,151	25.6
CT 60.02	3,664	\$25,348	956	26.1
CT 110.02	3,082	\$58,177	150	4.9
CT 111.03	3,837	\$40,805	477	12.4
CT 111.05	4,348	\$25,324	1,207	27.8
CT 112.00	3,419	\$36,440	469	13.7
Total	33,478		6,957	20.8
U.S. 67 from IH 35E to IH 20				
CT 60.01	4,497	\$29,321	1,151	25.6
CT 60.02	3,664	\$25,348	956	26.1
CT 61.00	4,415	\$38,504	913	20.7
CT 109.01	5,879	\$27,508	1,154	19.6

³ U.S. Department of Transportation, Federal Highway Administration. *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, 6640.23. December 2, 1998.

Area	Population*	Median Household Income	Persons Below Poverty Level	
			Number	Percent
CT 109.02	5,453	\$25,338	1,442	26.4
CT 110.01	6,922	\$44,560	493	7.1
Total	30,830		6,109	19.8
U.S. 67 South of IH 20				
CT 165.09	5,037	\$56,379	215	4.3
CT 165.14	5,662	\$70,168	55	1.0
CT 165.15	5,912	\$65,766	296	5.0
CT 165.17	3,947	\$48,684	180	4.6
CT 166.05	2,935	\$24,341	584	19.9
CT 166.06	6,301	\$50,288	304	4.8
CT 166.07	3,686	\$27,644	445	12.1
CT 166.14	10,418	\$54,047	855	8.2
CT 166.15	3,873	\$53,087	310	8.0
CT 166.16	3,429	\$55,182	191	5.6
Total	51,200		3,435	6.7
Total Project Area	127,553		19,457	15.2

*Population for whom poverty status has been determined.

Source: U.S. Census Bureau. *Census 2000*. <http://factfinder.census.gov>. Tables P77 and P87.

The percentage of the population below the poverty level in the study area north of IH 20 is noticeably higher than it is for all of Dallas County. As shown in **Table 4-2**, the poverty level in project area census tracts north of IH 20 ranged from 4.9 percent to 32.6 percent. The vast majority of the census tracts exhibited poverty levels in excess of 20 percent. This compares to 11.1 percent in the metropolitan area and 13.4 percent in Dallas County. Along U.S. 67 south of IH 20, only two of the 20 census tracts exhibited high levels of poverty.

C. Community Cohesion/Environmental Justice

Community cohesion is a term that refers to aggregate quality of a residential area. Cohesion is a social attribute that indicates a sense of community, common responsibility, and social interaction within a limited geographic area. It is the degree to which residents have a sense of belonging to their neighborhood or community or a strong attachment to neighbors, groups, and institutions as a continual association over time.

The proposed project would not adversely impact community cohesion. Both IH 35E and U.S. 67 are existing highways that serve as boundaries between neighborhoods and communities. Widening these highways would not have a divisive impact. Further, the census tract data suggests that there is considerable turnover of population in the adjoining neighborhoods, indicating a lack of stability.

In response to Executive Order 12898, signed by President Clinton on February 11, 1994, the U.S. Department of Transportation (USDOT) developed an environmental justice strategy that follows within the framework of NEPA and Title IV of the Civil Rights Act Executive Order 12898, entitled "Federal Actions to Address Environmental Justice in Minority Populations" and mandates that federal agencies identify and address, as appropriate, disproportionately high and

adverse human health or environmental effects, including social and economic effects, of their programs on minority and low income populations. A minority⁴ is a person who is:

- Black (having origins in any of the black racial groups of Africa);
- Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);
- Asian-American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or
- American Indian and Alaskan Native (having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).

Minority population means any readily identifiable groups of minority persons who live in geographic proximity and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed FHWA program, policy, or activity.

Low income means a person whose household income (or in the case of a community or group, whose median household income) is at or below the U.S. Department of Health and Human Services poverty guidelines. Low income population means any readily identifiable group of low income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed FHWA program, policy, or activity.

Adverse effects means the totality of significant individual or cumulative health or environmental effects, including interrelated social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness or death, air, noise, and water pollution and soil contamination; destruction or disruption of man-made or natural resources ; destruction or diminution of aesthetic values; destruction or disruption of community cohesion or a community's economic vitality; destruction or disruption of the availability of public and private facilities and services; vibration; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion, isolation, exclusion or separation of minority or low income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of benefits of FHWA programs, policies, or activities.

A disproportionately high and adverse effect on minority and low income populations means an adverse effect that:

1. Is predominantly borne by a minority population and/or a low income population; or
2. Would be suffered by the minority population and/or low income population and are appreciably more severe or greater in magnitude than the adverse effect that

⁴ U. S. Department of Transportation, Federal Highway Administration. *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, 66430.23. December 1998.

would be suffered by the non-minority population and/or non-low income population.

The three environmental justice principles 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, reductions in, or significant delay in, the receipt of benefits by minority and low income populations.

The potential effects of the proposed action have been evaluated in accordance with the requirements of the Executive Order. The 2000 census data for census tracts was used for the analysis. Census tracts are usually areas bounded on all sides by visible features such as streets, roads, streams, and railroad tracks, and invisible boundaries such as city, town, township, and county limits, property lines, and short, imaginary extensions of streets and roads. These areas are small enough to provide a close representation of actual community composition.

The study area is the home mainly to a minority population, comprised primarily of Blacks or African-Americans and Hispanics. In 2000, 73.3 percent of the persons living in the study area were minorities. The U. S. 67 south of IH 20 portion of the project is the only portion in which the percentage of the population that is minority (48.7 percent) is lower than the percentage of minorities in Dallas County. **Table 4-3** illustrates the population characteristics of the study area. Census data indicates that in 2000, 55.7 percent of the population of Dallas County was comprised of minorities.

**Table 4-3
Racial and Ethnic Composition of the Population**

Area	Total Population	Not Hispanic or Latino							Hispanic or Latino of Any Race	Total Minority Population
		Population of One Race								
		White	Black or African American	Indian and Alaska Native	Asian	Pacific Islander	Other Race	Two or More Races		
Dallas County	2,218,899	983,516 44.3%	443,261 20.0%	8,227 0.4%	86,793 3.9%	739 0.0%	2,222 0.1%	30,656 12.4%	663,125 29.9%	1,235,383 55.7%
City of Dallas	1,188,204	411,172 34.6%	303,561 25.5%	3,420 0.3%	31,838 2.7%	432 0.0%	985 0.1%	13,618 1.1%	423,178 35.6%	777,032 65.4%
IH 35E North of U.S. 67 Split										
CT 48.00	4,361	163	202	0	15	9	0	0	3,972	4,198
CT 50.00	4,594	409	355	4	0	0	7	14	3,805	4,185
CT 54.00	5,287	266	2,736	7	16	0	0	47	2,215	5,021
CT 56.00	6,972	135	2,673	18	0	0	0	79	4,067	6,837
CT 60.01	4,507	211	1,580	0	0	0	0	13	2,703	4,296
CT 60.02	3,971	1,261	2,051	27	103	0	6	130	393	2,710
CT 62.00	6,095	761	2,308	0	12	0	0	107	2,907	5,334
Total	35,787	3,206 9.0%	11,905 33.3%	56 0.2%	146 0.4%	9 0.0%	13 0.0%	390 1.1%	20,062 56.1%	32,581 91.0%
IH 35E from U.S. 67 Split to IH 20										
CT 56.00	6,972	135	2,673	18	0	0	0	79	4,067	6,837
CT 59.02	4,017	310	3,290	7	6	0	0	24	380	3,707
CT 60.01	4,507	211	1,580	0	0	0	0	13	2,703	4,296
CT 60.02	3,971	1,261	2,051	27	103	0	6	130	393	2,710

Area	Total Population	Not Hispanic or Latino							Hispanic or Latino of Any Race	Total Minority Population
		Population of One Race								
		White	Black or African American	Indian and Alaska Native	Asian	Pacific Islander	Other Race	Two or More Races		
CT 110.02	3,082	402	2,548	0	6	0	0	0	126	2,680
CT 111.03	3,852	442	1,998	4	5	0	0	53	1,350	3,410
CT 111.05	4,348	61	3,988	0	0	0	0	70	229	4,287
CT 112.00	3,437	176	2,731	0	0	0	11	23	496	3,261
Total	34,186	2,998 8.8%	20,859 61.0%	56 0.2%	120 0.3%	0 0.0%	17 0.0%	392 1.0%	9,744 28.5%	31,188 91.2%
U.S. 67 from IH 35E to IH 20										
CT 60.01	4,507	211	1,580	0	0	0	0	13	2,703	4,296
CT 60.02	3,971	1,261	2,051	27	103	0	6	130	393	2,710
CT 61.00	4,421	587	2,749	0	13	0	0	46	1,026	3,834
CT 109.01	5,879	284	4,813	0	0	6	0	25	751	5,595
CT 109.02	5,453	164	4,962	0	0	0	6	27	294	5,289
CT 110.01	6,948	681	5,831	0	63	0	0	48	325	6,267
Total	31,179 25.9%	3,188 10.2%	21,986 70.5%	27 0.1%	179 0.6%	6 0.0%	12 0.0%	289 0.9%	5,492 17.6%	27,991 89.8%
U.S. 67 South of IH 20										
CT 165.09	5,048	3,368	821	38	127	0	6	135	553	1,680
CT 165.14	5,685	2,485	2,208	45	135	0	6	79	727	3,200
CT 165.15	6,032	4,772	516	91	90	0	14	61	488	1,260
CT 165.17	3,960	2,179	1,190	17	0	0	0	58	516	1,781
CT 166.05	2,992	809	570	3	0	0	7	13	1,590	2,183
CT 166.06	6,495	2,521	2,893	10	158	0	19	151	743	3,974
CT 166.07	3,728	95	3,132	7	0	0	0	28	466	3,633
CT 166.14	10,602	4,524	4,452	9	95	0	40	191	1,291	6,078
CT 166.15	6,032	4,772	516	91	90	0	14	61	488	1,260
CT 166.16	3,429	2,161	688	0	22	0	0	116	442	1,268
Total	54,003	27,686 51.3%	16,986 31.4%	311 0.6%	717 1.3%	0 0.0%	106 0.2%	893 1.6%	7,304 13.5%	26,317 48.7%
Total Project Area	131,227	33,999	61,801 47.1%	371 0.3%	950 0.7%	15 0.0%	125 0.1%	1,599 1.2%	32,343 24.6%	96,204 73.3%

Source: U.S. Census Bureau. *Census 2000*. <http://factfinder.census.gov>

Percentages may not total to 100% due to rounding

All of the census tracts in the study area have close to a 50% or greater minority population abutting the highway. Minority populations represent the majority of the population and are consistently spaced throughout most of the study area; therefore, there should not be any disproportionate impacts to minority groups. Also, relocations and access impacts are minimal compared to the overall project magnitude. Widening the existing transportation facility would benefit neighborhoods adversely impacted by relocations. The minority populations would benefit from the proposed project as a result of improved mobility, reduced traffic congestion, and the resultant improvement in local air quality.

None of the census tracts have greater than a 50% low income population. Study area poverty level percentages range from 1.0 to 32.6 %. North of the IH 20 the average low income level ranges from 19.8 to 25.4 and south of IH 20 the average low income level is 6.7%. It is not anticipated that there would be any disproportionate impacts to low income populations.

Executive Order 13166 on Limited English Proficiency (LEP) calls for all agencies to ensure that their federally conducted programs and activities are meaningfully accessible to LEP individuals. Census tract data for “Ability to Speak English” for the population five years and over indicates 9.6% of the population within the census tracts along the project corridor speaks English “Not

Well” or “Not at All.” One census tract, 48.00, indicates that 56.4% of its population speaks English “Not Well” or “Not at All.” Field visits (windshield surveys) observed several billboards and other types of signs in this area used languages other than English. No other census tracts data indicates an LEP population greater than 50%.

In an effort to inform all citizens of the proposed project, the study team hand delivered bilingual project information. This information included packets delivered door-to-door to citizens throughout the study area. Comments were also encouraged and recorded from all citizens. Additional efforts were expended to provide information to citizens including an interactive web site that provided bilingual information to citizens. Additional bilingual information and public involvement tools included three project newsletters, comment cards, invitations, display ads and public notices. A series of three public meetings and two community forums were held to provide citizens additional opportunities to provide input into the process. An interpreter was provided at each public meeting to allow all citizens opportunities to receive the presentation in English and Spanish.

Relocations and ROW Acquisitions

The proposed improvements to IH 35E and U.S. 67 would require additional ROW, resulting in a number of residential and non-residential displacements. Approximately 23 acres of additional ROW would be required for the recommended alternative. This amount may change during the final design phase. TxDOT would be responsible for the ROW acquisitions. Acquisition and relocation assistance would be in accordance with the TxDOT ROW Acquisition and Relocation Assistance Program.

The absolute number of displacements would not be available until the precise ROW acquisition line is determined during the final design phase of the project. However, the information presented here is sufficient to adequately represent the magnitude of the potential impacts. It is estimated that nine single family housing units would be acquired for additional ROW if the proposed highway improvements were implemented. **Table 4-4** contains the type and number of displacements. There would also be 27 business establishments displaced throughout the corridor. A summary of the affected businesses is located in **Appendix D: Supplemental Data**.

**Table 4-4
Displacements**

RESIDENTIAL	9
Single-Family Housing Units	9
BUSINESS ESTABLISHMENTS	27
Motor Vehicle Sales	3
Automotive Services	2
Child Care	1
Law Offices	4
Health and Personal Care	2
Gasoline Stations	2
Insurance	2
Miscellaneous retailers	4
Hotels, Motels	2
Religious Affiliated Businesses	2
Commercial Buildings	3
MANUFACTURING	0

Available Housing

It is anticipated that replacement housing would be available in the project area. Based on Census 2000, there were 45,934 housing units in the project study area. Of this total, 2,047, or 4.5 percent, were vacant. Vacancy rates tend to be higher in the neighborhoods along U.S. 67 north of IH 20 and lowest in the neighborhoods south of IH 20.

Approximately 55 percent of the occupied housing units in the study area are owner occupied, compared to 58.9 percent in the Dallas PMSA and 53 percent in Dallas County. Paralleling incomes, housing values in the study area are lower than those in the PMSA. Median values of study area owner-occupied housing units in 2000 ranged from \$35,000 at the north edge of the study area to \$107,300 at the south edge. This compares to \$102,100 in the Dallas PMSA and \$92,700 in Dallas County.

The most readily available detailed statistical data relating to housing availability in the IH 35E and U.S. 67 project areas is Census 2000. There were 674 vacant housing units in the census tracts abutting IH 35E north of the U.S. 67 split; 528 vacant housing units in the census tracts abutting IH 35E between the U.S. 67 split and IH 20; 728 vacant housing units in the census tracts abutting U.S. 67 from IH 35E to IH 20; and 632 vacant housing units in the census tracts abutting U.S. 67 south of IH 20. It is anticipated that replacement housing would be available in the project area. The relocation process would extend over a protracted time period due to the length of the project, providing ample time for affected residents to find suitable replacement housing.

Consistent with U.S. Department of Transportation policy, as mandated by the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970* and the *Uniform Relocation Act Amendments of 1987*, TxDOT provides relocation resources to all displaced

persons without discrimination. All property owners from whom property is needed are entitled to receive just compensation for their land and property. Just compensation is based upon the fair market value of the property. TxDOT also provides, through its Relocation Assistance Program, payment and services to aid in movement to a new location.

Relocation assistance is available to all individuals, families, businesses, farmers, and nonprofit organizations displaced as a result of a State highway or other transportation project. This assistance applies to tenants as well as owners occupying the real property needed for the project. Replacement structures must be located in the same type of neighborhood and be equally accessible to public services and places of employment. The TxDOT Relocation Office would also provide assistance to displaced businesses and nonprofit organizations to aid in their satisfactory relocation with a minimum of delay and loss of earnings. The proposed project would proceed to construction only when all displaced families have been provided the opportunity to be relocated to adequate replacement sites. The available structures must also be open to persons regardless of race, color, religion, or nationality, and be within the financial means of those individuals affected.

D. Public Facilities and Services

There are no public facilities such as schools, churches, cemeteries, hospitals, police departments, or fire departments that would be impacted by the proposed project. The improvements would provide an increase in accessibility for this portion of southern Dallas County to the various religious, educational, medical, and recreational facilities in the area. Emergency public services would have a safer, more efficient facility to use in the performance of their duties. The adjustment and relocation of any utilities would be so handled that no major interruptions would take place while these adjustments are being made.

Existing Environment

Schools, Churches, and Cemeteries

Approximately 38 churches, seven schools, two cemeteries, the DISD Area 4, 5, and 6 Superintendent's office, the Christ for the Nations institute, the Dallas Executive Airport, and two rail lines are within 500 feet of the existing ROW. Specific facilities to note are described below.

Laurel Land Cemetery is located at 6000 S. IH 35E between E. Laureland Road and E. Camp Wisdom Road. The cemetery encompasses approximately 340 acres along the IH 35E northbound frontage road and contains approximately 60,000 to 80,000 grave sites. According to the Historic Survey conducted, the cemetery dates to the mid 1940s and does not possess the necessary criteria as a design landscape to be eligible as historic. Cemetery personnel have stated that Laurel Land was established earlier in 1925. However no documentation has been found or provided that substantiates this statement. Additional ROW, approximately 0.09 acre, may be needed from the cemetery property. No gravesites would be impacted.

The McAdams Cemetery lies just west of IH 35E in the 2400 block of Brookhaven Avenue. The cemetery is probably associated with the Nathaniel O. McAdams family, who had emigrated to Texas in the early 1850s. Although the McAdams Cemetery does not meet the standard for NRHP listing, it is likely eligible for designation as a Historic Texas Cemetery through the Texas

Historical Commission. A detailed report of this cemetery is contained within the historical report that has been submitted for the proposed project. No impacts are anticipated to occur at this cemetery.

Community Services

Oak Cliff Chamber of Commerce is located near the ROW, but would not be impacted.

Historic District

There is one historic district located adjacent to the project corridor. The Tenth Street Historic District is located along the east side of IH 35E at the existing ROW (see **Appendix C**, Sheet 5 of 5). The Tenth Street Historic District was adopted in 1993. It is one of the only remaining intact Freedman's Towns in the nation. It is a cohesive collection of modest folk and vernacular dwellings dating from the late nineteenth to early twentieth centuries. In this neighborhood there are 257 domestic structures, four commercial structures, three institutional structures and one cemetery. This historic district would not be affected by the proposed project and is discussed further in the Historic and Archeological Resources section of the document.

E. Impacts to Section 4(f) and 6(f) Properties

There are six parks along the existing IH 35E/U.S. 67 corridor. The parks and recreation departments for the cities of Cedar Hill, Dallas, DeSoto, Duncanville, and Lancaster provided information to coordinate the location of these park areas. Parks adjacent to the proposed project include Sun Valley Park, the Dallas Zoo, Thurgood Marshall Recreation Center, Boulder Park, Five Mile Greenbelt and Gannon Park/Wynnewood Parkway. **Appendix C: Proposed Schematics** shows the parks adjacent to the existing corridor.

The following is a description of the facilities adjacent to the existing ROW.

Sun Valley Park

This park is located on the east side of IH 35E between Overton and Ann Arbor. It is a 3.19 acre open play space. It is a heavily wooded park with no improved park facilities. Due to the nature of this park, there are no associated noise impacts. No ROW will be taken from Sun Valley Park.

City of Dallas Zoo

The Zoo is located along the east side of IH 35E near Marsalis, sharing 2,070 ft. of property line along the ROW. The land for the Dallas Zoo was first acquired in 1909 and currently encompasses an area of approximately 118 acres. Several animal exhibits are located adjacent to the right of way. The Noise Analysis section contains details on specific noise mitigation proposed for the Dallas Zoo. Approximately 0.082 acre of additional ROW would be needed from the Dallas Zoo and a Programmatic Section 4(f) has been prepared. **See Appendix G.**

Thurgood Marshall Recreation Center

The Thurgood Marshall Recreation Center is a 24-acre community park located along the west side of U.S. 67. The park shares 870 ft. of property line along the ROW. This land was acquired in 1962. The park contains a gymnasium, six play areas, five basketball/tennis courts, swimming pool, and three sports fields. See the Noise section for further details on noise mitigation that has

been proposed for the Thurgood Marshall Recreation Center. ROW will not be taken from this park.

Boulder Park

Boulder Park is an open space park located south of Dallas Executive Airport. This park contains 106 acres and its initial acquisition occurred in 1967. The park shares 2,020 ft. of property line along the ROW. A water containment structure (dam) is located on the west side of U.S. 67 at a point where three branches of Woody Creek converge together. A residential community is located on the east side of U.S. 67, downstream from this structure. Primitive bike and hike trails run throughout the park. This park is well hidden from U.S. 67 and there are no outdoor activity areas within 500' of the proposed ROW. There are no associated noise impacts to Boulder Park and no ROW will be taken from this park.

Five Mile Greenbelt and Gannon Park/Wynnewood Parkway

Five Mile Greenbelt intersects U.S. 67 and Gannon Park/Wynnewood Park intersects IH 35E. These greenbelt linkages follow Five Mile Creek and Cedar Creek, respectively. They are not continuous, as these facilities end near the right of ways, at which point the City of Dallas is no longer the owner, and continue on the other side. Neither of these properties will be impacted by the proposed project. Due to the nature of these linkages, there are no associated noise impacts and no ROW will be taken from these parks.

As previously mentioned, the proposed project includes the removal of the Pentagon overpass at U.S. 67. An overpass for Five Mile Creek would be constructed at this location for the Five Mile Greenbelt hike/bike trail which would provide continuity to the existing path.

If ROW is required from publicly owned parks, recreational areas, wildlife or waterfowl refuges of national, state or local significance, special studies are performed and a separate document, a Section 4(f) Evaluation is prepared.

The Section 4(f) legislation as established under the U. S. Department of Transportation Act of 1966 (49 USC 303, 23 USC 138) provides protection for publicly owned parks, recreation areas, or wildlife and/or waterfowl refuges of national, state, or local significance or land of an historic site of national, state, or local significance from conversion to transportation usage. Section 4(f) also applies to all archaeological sites on or eligible for inclusion on the National Register of Historic Places and which warrant preservation in place. The Federal Highway Administration (FHWA) may not approve the use of publicly owned land of a publicly owned park; recreation area; wildlife and waterfowl refuge of national, state, or local significance; or land of an historic site of national, state, or local significance unless a determination is made that:

- There is no feasible and prudent alternative to the use of the land from the property; and
- The action includes all possible planning to minimize harm to the property resulting from such use (23 CFR 771.135).

When parkland has been acquired or developed with funds provided by the Land and Water Conservation Fund (LWCF) Act of 1965 (16 USC 4601-4 to 4601-11) and this land is required for highway right-of-way (ROW), a Section 6(f) evaluation process must be followed. These

properties may be converted to transportation use only if the land is replaced with property, which is reasonably equivalent in usefulness and is of at least the same fair market value. Special coordination and approval of the National Park Service (NPS) and the U. S. Department of the Interior (DOI) is necessary for parks where this funding has been utilized.

Correspondence with the Texas Park and Wildlife Department (TPWD) indicates that Five Mile Greenbelt received a grant provided by the LWCF Act. However the proposed project would not cause impacts to this park or any other LWCF Act or Local Parks Fund projects or sites. Consequently, there are no Section 6(f) conversions involved with the proposed project (See **Appendix E**, TPWD letter dated October 20, 2003).

All six parks along the corridor and have been evaluated. There would be no impacts to park property or to the function of these parks due to the proposed project with the exception of the Dallas Zoo. A portion of the Dallas Zoo property would be impacted by the proposed project. Meetings with zoo officials began early in the MIS process and have continued throughout the completion of the EA. A Programmatic Section 4(f) Evaluation prepared for this project is included in **Appendix G**.

F. Lakes, Rivers, and Streams

The waterways in the project area are associated with the Trinity River Basin. The Trinity River, Segment 0805, is located just north of the study area. The waterways include Cedar Creek, Five-Mile Creek, Woody Branch, Mauk Branch, Ten-Mile Creek, and Ricketts Branch. Cedar Creek is a perennial, first order stream located just south of Zang Blvd. along IH 35E (Figure 5, Sheet 3). Five-Mile Creek is a perennial, second order stream located north of Loop 12 along IH 35E and U.S. 67 (Figure 5, Sheets 2 & 6). Woody Branch is a perennial, first order stream located just north of Westmoreland St. along U.S. 67 (Figure 5, Sheet 5). Mauk Branch is a perennial, first order stream located south of Daniieldale Rd. along U.S. 67 (Figure 5, Sheet 5). Ten-Mile creek is a perennial, second order stream located south of Main St. along U.S. 67 (Figure 5, Sheet 4). Rickette Branch is a perennial, first order stream located just south of Loop 12 along IH 35E (Figure 5, Sheet 1). No rivers or lakes were observed in the project area.

The waterways crossed by IH 35E and U.S. 67 are not navigable waterways; therefore, a navigational clearance under the General Bridge Act of 1946 and Section 9 of the Rivers and Harbors Act of 1899 (administered by the U.S. Coast Guard [USCG]), and Section 10 of the Rivers and Harbors Act of 1899 (administered by the U.S. Army Corps of Engineers [USACE]) would not be required. Coordination with the USCG (for Section 9 and the General Bridge Act) and the USACE (for Section 10) would not be required.

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) were reviewed to determine flood zones within the area for the proposed project. See Figure 5: FEMA Floodplain and USGS Quadrangle Maps in **Appendix A**. IH 35E and U.S. 67 cross eight areas which are designated as special flood hazard areas inundated by the 100-year flood as either Zone A, no base flood elevations determined or Zone AE, base elevations determined. The floodplain areas are located where IH 35E and U.S. 67 cross the following waterways:

- Ricketts Branch FEMA Map Number 48113C0490J, August 23, 2001.
- Woody Branch FEMA Map Number 48113C0490J, August 23, 2001.
- South Prong of Five Mile Creek FEMA Map Number 48113C0490J, August 23, 2001.
- Cedar Creek FEMA Map Number 48113C0480J, August 23, 2001.
- South Branch of Cedar Creek FEMA Map Number 48113C0480J, August 23, 2001.
- Mauk Branch FEMA Map Number 48113C0470J, August 23, 2001.
- Ten Mile Creek FEMA Map Number 48113C0470J, August 23, 2001.
- Bentle Branch FEMA Map Number 48113C0605J, August 23, 2001.

Other areas are designated as Zone X, areas determined to be outside the 500-year floodplain. Dallas County and the cities of Dallas, DeSoto, Duncanville, Cedar Hill, and Lancaster are participants in the National Flood Insurance Program (NFIP).

The hydraulic design practices would be in accordance with current TxDOT and FHWA design policies and standards. The proposed roadway expansion would permit the conveyance of design year flood, inundation of the roadway being acceptable, without causing major damage to the highway, stream, or other property.

G. Waters of the U.S., including Wetlands

Pursuant to Executive Order 11990 (Protection of Wetlands) and Section 404 of the Clean Water Act (CWA), an investigation was conducted to identify jurisdictional wetlands and waters of the United States within the proposed project ROW limits. According to the U.S. Army Corps of Engineers (USACE), the federal agency having authority over waters of the United States, wetlands must possess three essential characteristics. Under normal circumstances, these characteristics include the presence of hydrophytic vegetation, wetland hydrology, and hydric soils.

One wetland area within the proposed project ROW was identified, characterized, and delineated in order to evaluate the jurisdictional status of the site. The wetland data form is included in **Appendix D**. The delineated wetland within the ROW totaled 0.328 acre. Twenty-three crossings of waters of the U.S. are located within the ROW, having a total area of 6.856 acres. These areas are shown in **Table 4-5**. Wetlands and waters of the U.S. beyond the ROW of the proposed project were not delineated.

By their nature, linear transportation projects are likely to result in minimal impacts to several different waterbodies (i.e. tributaries, ponds, and isolated waters). The proposed project intersects with six creeks and/or their tributaries and the impacts to individual channels were evaluated. These channels are not part of a braided stream system and the project does not repeatedly crisscross any one waterbody. Each proposed jurisdictional crossing listed in **Table 4-5** is single and complete.

**Table 4-5
Jurisdictional Waters of the United States,
Including Adjacent Wetlands within Proposed ROW**

	Proposed Jurisdictional Area	Associated Observation Points	Acres Within Proposed ROW	Area Of Potential Impact/Type of Impact	Acres of Potential Impact	Schematic Sheet Number
1	1A		0.116	Water	None	1 of 5
2	2A		0.375	Water	None	2 of 5
3	3A		0.328	Water/Cut	0.046	2 of 5
4	4A		0.331	Water	None	3 of 5
5	4B		0.018	Water/Fill	0.018	3 of 5
6	5A		1.454	Water	None	3 of 5
7	6		0.261	Water	0.068	4 of 5, 7 of 7
8	7	7 Wet, 7 Up	0.328	Wetland/Fill	0.328	4 of 5
9	8A		0.180	Water	None	5 of 5
10	8B		0.165	Water	None	5 of 5
11	9A		0.097	Water/Fill	0.016	1 of 7
12	9B		0.245	Water/Fill	0.038	1 of 7
13	10		0.082	Water/Fill	0.001	1 of 7
14	11		0.008	Water	None	2 of 7
15	12		0.026	Water	None	2 of 7
16	13		0.655	Water	None	2 of 7
17	14		0.629	Water	None	2 of 7
18	15		0.173	Water	None	2 of 7
19	16		0.212	Water	None	3 of 7
20	17		0.571	Water	None	3 of 7, 4 of 7
21	18		0.276	Water	None	5 of 7
22	19		0.093	Water	None	5 of 7
23	20		0.321	Water	None	6 of 7
24	21		0.240	Water	None	7 of 7
	Totals		7.184		0.515	

Individual impacts to each crossing are listed above in **Table 4-5**. No individual crossing of a waters of the U.S. exceeds 0.10 acre of impacts. Approximately 0.328 acre of impacts would occur to the wetland area (Proposed Jurisdictional Area 7). Most jurisdictional water impacts were completely avoided by spanning the entire crossing with bridges. Impacts to areas were also reduced by minimizing the amount of excavation and/or fill. USACE Nationwide Permits 14 and 25 satisfy the requirements of this project. A Pre-Construction Notification (PCN) to the USACE is required for impacts to wetlands. If temporary fills are needed in jurisdictional waters or wetlands then the affected areas would be returned to their pre-existing elevations. If it is necessary for heavy machinery to work in a wetland then the placement of mats would occur to minimize soil disturbance. The waters are not navigable; therefore, a U.S. Coast Guard Section 9 Permit or a USACE Section 10 Permit would not be required. Channelization would not be required to construct the proposed project.

Because the roadway design is not complete at this time, impacts to jurisdictional areas were approximated based on the most current schematic design included as **Appendix C** of this EA. Mitigation measures that may be conducted include:

- a. Avoidance, where practicable, by spanning jurisdictional areas with bridges.
- b. Minimization of impacts by limiting excavation and/or fill quantities
- c. Compensatory mitigation for impacts would occur onsite when possible.

General Condition 9 of the Nationwide Permit Program requires applicants using Nationwide Permit 14 to comply with Section 401 of the Clean Water Act. Compliance with Section 401 requires the use of best management practices (BMPs) to manage water quality on construction sites. The Storm Water Pollution Prevention Plan would include at least one BMP from the 401 Water Quality Certification Conditions for Nationwide Permits as published by the Texas Natural Resource Conservation Commission, April 12, 2002. These BMPs will address each of the following categories:

- Category I – Erosion Control
- Category II – Sedimentation Control
- Category III – Post-construction Total Suspended Solids Control

Category I would be addressed by applying temporary reseeding (native vegetation) and mulch to disturbed areas. Category II would be addressed by installing, silt fences combined with rock berms. Category III would be addressed by planting permanent native vegetation to create grass-lined ditches. These ditches would accept roadway runoff as sheet flow and filter it along the front slopes of the ditches as well as the bottom of the ditch. Other approved methods may be substituted if necessary, using one of the BMPs from the identical category.

H. Water Quality

Stormwater runoff from this proposed construction would flow into several creeks which all flow into the Trinity River, segment number 0805 of the Trinity River Basin/Brazos River Basin. This feature, as listed in the TCEQ Water Quality Inventory is designated as not meeting the standard for bacteria. The water quality of wetlands and waters in the State shall be maintained in accordance with all applicable provisions of the Texas Surface Water Quality Standards including the General, Narrative and Numerical Criteria.

Impaired Waters

This segment of the Trinity River, Segment 0805, is designated as not supporting contact recreation use due to bacteria in the 2002 Clean Water Act Section 303(d) list and the project is within 5 miles upstream of the threatened or impaired segment.

Trinity River Corridor Development

The proposed project is located outside of the Trinity River Corridor Development Certificate Regulatory Zone and a certificate for corridor development would not be required.

Stormwater Issues

The contractor would take appropriate measures to prevent, minimize and control the spill of fuels, lubricants, and hazardous materials in the construction staging area. All spills, including those of less than twenty-five (25) gallons, shall be cleaned immediately and any contaminated soil shall be immediately removed from the site and be disposed of properly. Designated areas shall be identified for spoils disposal and materials storage. These areas shall be protected from

run-on and run-off. Materials resulting from the destruction of existing roads and structures shall be stored in these designated areas. The use of construction equipment within the stream channel would be avoided. If work within a watercourse or wetland is unavoidable, heavy equipment shall be placed on mats, if necessary, to protect the substrate from gouging and rutting. All construction equipment and materials used within the stream channel and immediate vicinity would be removed as soon as the work schedule permits and/or when not in use and shall be stored in an area protected from run-on and run-off. All materials being removed and/or disposed of by the contractor would be done so in accordance to state and federal laws and by the approval of the Project Engineer. Any changes to ambient water quality during construction of the proposed project shall be prohibited and may result in additional water quality control measures. It shall be mitigated as soon as possible and shall be reported to the Texas Commission on Environmental Quality (TCEQ) within 24 hours of becoming aware of impacts. The contractor would practice "good housekeeping" measures, as well as "grade management" techniques to help ensure that proper precautions are in place throughout construction of the proposed project. There are no public water supply intakes within the project limits or adjacent areas. No adverse affects are expected to this resource.

Texas Pollutant Discharge Elimination System (TPDES)

Because this project would disturb more than one (1) acre, TxDOT would be required to comply with the TCEQ - Texas Pollutant Discharge Elimination System (TPDES) General Permit for Construction Activity. The project would disturb more than five (5) acres; therefore, a Notice of Intent would be filed to comply with TCEQ stating that TxDOT would have a Storm Water Pollution Prevention Plan (SW3P) in place prior to construction of the proposed project. This "SW3P" utilizes the temporary control measures as outlined in the Department's manual "Standard Specifications for the Construction of Highways, Streets, and Bridges". Impacts would be minimized by avoiding work by construction equipment directly in the stream channels and/or adjacent areas. No long-term water quality impacts are expected as a result of the proposed project.

Texas Commission on Environmental Quality (TCEQ) Section 401 BMPs

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 TCEQ Section 401. At least one Erosion Control device would be implemented and maintained until construction is complete. Erosion Control devices to be used include temporary vegetation, blankets/matting, mulch, sod, interceptor swales, and diversion dikes. Also at least one Post-Construction TSS Control device would be implemented upon completion of the project. Post-Construction TSS Control devices that may be used include retention/irrigation, extended detention basins, vegetative filter strips, constructed wetlands, wet basins, vegetation lined drainage ditches, grassy swales, and sand filter systems. In addition, at least one Sedimentation Control device would be maintained and remain in place until completion of the project. Sedimentation Control devices that may be used include sand bag berms, silt fences, triangular filter dikes, rock berms and hay bale dikes, brush berms, stone outlet sediment traps, or sediment basins.

I. Threatened/Endangered Species and Wildlife Habitat

The Texas Parks and Wildlife Department (TPWD) was contacted through the Texas Natural Diversity Database (TXNDD) to obtain an Annotated County List of Rare Species for Dallas County. This list contains both Federal and State listed species as well as rare species, as determined by TPWD, found within Dallas County but with no current regulatory protection status (please see **Table 4-6**). The U.S. Fish and Wildlife Service (USFWS) Southwest Region Ecological Service and the Arlington, Texas Ecological Service Office web site were also contacted to obtain current information directly related to federally listed species in Dallas County. See the agency coordination letters in **Appendix E**. Federally listed species are protected under the Endangered Species Act of 1973. In general, this act protects both the species and the habitat. State listed species are protected under the Texas Administrative Code, Title 31, Part 2, Chapter 65, Subchapter G, Rules 65.71 – 65.176 and under the TPWD Statutes Chapters 67 and 68 revised May 31, 2002. These state regulations primarily address direct adverse effects to state listed species only and do not protect habitat.

It was noted during the database research for threatened and endangered species that the Federal listing of several species for Dallas County did not coincide on each of the available databases. The Golden-cheeked Warbler (GCW) does not appear as a federally listed species on the Annotated County List of Rare Species for Dallas County. The USFWS does list the GCW as endangered in Dallas County primarily because Dallas County is within the historic range for that species. The Piping Plover and the Mountain Plover are listed by the USFWS as endangered/threatened and proposed threatened, respectfully, and are considered migratory statewide or regionally. Because of the transient and irregular movements of these species within the state, TPWD does not list these species specifically for Dallas County. Lastly, the USFWS does list the Whooping Crane as endangered, but does not list it specifically in Dallas County. Dallas County is on the extreme eastern edge of the migratory pathway for this species. TPWD does list this species as a potential migrant for Dallas County.

All currently listed federal species in Dallas County are avian species that are considered migratory birds and are therefore also protected under the Migratory Bird Treaty Act (MBTA). Some specimens may be local residents year round in Dallas County, but these species, like the Bald Eagle and the Interior Least Tern, are still considered to be migratory. No nesting habitat was found within the project limits for any of the federally listed species and no effects to these species are anticipated. It is noted though, TXNDD did indicate that the Black-capped Vireo and habitat for the vireo were found in the general area west of U.S. 67. The Cedar Hill, Tex. Quadrangle indicated the closest sighting was approximately one mile west-southwest of the intersection of U.S. 67 and FM 1832 near a local radio tower.

**Table 4-6
Federal and State Listed Threatened/Endangered Species in Dallas County***

Common Name	Scientific Name	Federal Status	State Status	Description of Suitable Habitat	Within Range and Suitable Habitat	Species Effect
BIRDS						
Arctic Peregrine Falcon	<i>Falco peregrinus tundrius</i>	DL	T	Nests in tundra regions; migrates through Texas; winter inhabitant of coastlines and mountains from Florida to South America. Open areas, usually near water.	No	No
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	T	Nests and winters near rivers, lakes and along coasts; nests in tall trees or on cliffs near large bodies of water.	No	No
Black-capped Vireo	<i>Vireo atricapillus</i>	E	E	Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching ground level for nesting cover; return to same territory, or one nearby annually; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer.	No	No
Golden-cheeked Warbler	<i>Dendroica chrysoparia</i>	E	E	Nest in mixed Ashe-juniper and oak woodlands in ravines and canyons	No	No
Henslow's Sparrow	<i>Ammodramus henslowii</i>			Wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking; likely to occur, but few records within this county	No	No
Interior Least Tern	<i>Sterna antillarum</i>	E	E	Nests along sand and gravel bars within braided streams and rivers; also known to nest on man-made structures.	No	No
Mountain Plover	<i>Charadrius montanus</i>	PT		breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous	No	No
Piping Plover	<i>Charadrius melodus</i>	T		Sandy beaches and lakeshores.	No	No
Whooping Crane	<i>Grus americana</i>	E	E	Estuaries, prairie marshes savannah, grasslands, croplands pastures- winter resident at Aransas NWR, Aransas and Matagorda.	No	No
Wood Stork	<i>Mycteria americana</i>		T	Forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, inhabits mud flats and other wetlands.	No	No

Common Name	Scientific Name	Federal Status	State Status	Description of Suitable Habitat	Within Range and Suitable Habitat	Species Effect
REPTILES						
Texas Horned Lizard	<i>Phrynosoma cornutum</i>		T	Open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; sandy to rocky soil.	Yes	No
Timber/ Canebrake Rattlesnake	<i>Crotalus horridus</i>		T	Swamps, floodplains, upland woodlands, riparian zones, abandoned farmland; prefers dense ground cover, i.e. grapevines or palmetto.	Yes	No
Texas Garter Snake	<i>Thamnophis sirtalis annectens</i>			Wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August	Yes	No
INSECTS						
Black Lordithon Rove Beetle	<i>Lordithon niger</i>			Historically known from Texas	No	No
MAMMALS						
Plains Spotted Skunk	<i>Spilogale putorius interrupta</i>			Catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie	Yes	No
VASCULAR PLANTS						
Saprophytic orchid	<i>Hexaletris warnockii</i>			Leaf litter and humus in oak-juniper woodlands in mountain canyons in the Trans Pecos but at lower elevations to the east, often on narrow terraces along creekbeds	Yes	No
LE, LT - Federally Listed Endangered/Threatened PT, C - Federally Proposed Threatened, or Candidate Species DL, PDL - Federally Delisted/Proposed Delisted						

*Data Sources: U.S. Fish and Wildlife Service (8/2003), Texas Parks and Wildlife Department (8/1999) and survey of project area.

Habitat Requirements:

Potential habitat for two state listed threatened species, the Texas Horned Lizard and the Timber or Canebrake Rattlesnake, may exist within the project limits.

Texas Horned Lizard: The horned lizard can be found in arid and semi-arid habitats in open areas with sparse plant cover and loose sand or loamy soils. The horned lizard feeds on harvester ants and eats a large number of them. They would hibernate in burrows beginning in September or October and emerge from their hibernation in April or May. Local field guides still indicate the range for this species as most of Texas with the exception of portions of East Texas. Marginal habitat areas may exist in various locations throughout the project both inside and outside of the existing ROW. This species is prone to effects directly from construction activities because of their lack of mobility and their tendency to bury themselves when threatened.

Timber/Canebrake Rattlesnake: The timber or canebrake favors densely vegetated wooded valleys, lowland thickets, and hilly woodlands near rivers, streams, and lakes in the eastern part of the state. They would occupy open upland pine and deciduous woods and the second growth pastures of unused farmland. The rattlesnake feeds on rodents and birds. Though many of the lowland riparian corridors found within the project limits are isolated, some areas do exhibit relatively dense understory and may be utilized by remnant populations or individuals of this species.

Adverse effects to either of these species are not anticipated. The chance of finding the Texas Horned Lizard within the project limits based upon the extent of urban development in the area is minimal. The probability of finding an isolated population or individual canebrake rattlesnake within the project limits is minimal. The chance of affecting that population or individual based upon the limited amount of clearing and construction outside the existing ROW is also minimal. Care should be taken during clearing and construction. If any of these species are found, work should cease at that location and TxDOT personnel should be contacted.

Three rare state species, the *Hexalectris warnockii* (a saprophytic orchid), the Texas Garter Snake, and the Plains Spotted Skunk, may potentially be found within the project limits. The Duncanville, Tex. TXNDD quadrangle sheet indicated that the saprophytic orchid has been found in the general project vicinity. The TXNDD data did not reflect any known sightings for the Texas Garter Snake and the Plains Spotted Skunk; however, habitat in general may exist for these species within the project limits. Care should be taken during clearing and construction. If any of these species are found, work should cease at that location and TxDOT should be contacted. It is anticipated the proposed project would not have an adverse effect on any threatened and endangered species, habitat, or migratory patterns.

Vegetation and Wildlife

The project limits are located totally within Dallas County. These limits are located within one Natural Ecological Region of Texas, as defined by the TPWD, that region being the Blackland Prairie. This region consists of approximately 11,500,000 acres and includes the San Antonio and Fayette Prairies. The project limits are located in the northern portion of the Blackland Prairie as they are defined within the state of Texas. Average annual rainfall in this area reaches around 40 inches. Blackland soils are typically fairly uniform dark-colored calcareous clays interspersed with some gray acid sandy loams.

The 1984 TPWD map of “The Vegetation Types of Texas” indicates that the project area falls within two classifications: Urban in the northern portion of the project and Crops in the southern portion of the project along U.S. 67. The Urban physiognomic region does not address specific plant species. The Crops physiognomic region includes cultivated cover crops or row crops used for the purpose of producing food and/or fiber for either man or domestic animals. Field observations indicate that the vegetation adjacent to the project ROW is more representative of urban type vegetation. The areas designated as Crops no longer exhibit agricultural vegetation. Due to the expanse of urbanization, these former agricultural areas have been altered by commercial development or have simply been abandoned. **Appendix D** contains a completed vegetation data form for the project.

Improvements along IH 35E traversed a portion of southern Dallas County that exhibits older commercial and residential development. This tendency changed along IH 35E to more recent development towards the southern portion of the project. In general, all neighborhoods, parks, and creek crossings on the northern portion of the project exhibited more mature tree growth than the southern portion of the project. The existing ROW along IH 35E was well maintained with minor landscaping present at some locations scattered throughout the project length. Landscape plants included woody species like Cedar Elm, Burr Oak, Sweetgum, Post Oak, Loblolly Pine and Pear. Grasses within the existing ROW included most of the species listed for the U.S. 67 section. Forb species found within the existing ROW included Silverleaf Nightshade (*Solanum eleagnifolium*), Buffaloburr (*Solanum rastratum*), Bindweed (*Convolvulus arvensis*), False Ragweed (*Parthenium hysterophorus*), and Purple Dalea (*Dalea lasiathera*). As in the U.S. 67 section, woody vegetation has been allowed to intrude into the existing ROW along IH 35E. These areas were limited in extent and confined mainly to creek and ditch crossings and included species like Pecan (*Carya illinoensis*), Chinaberry, (*Melia azedarach*), Cedar Elm (*Ulmus crassifolia*), Black Walnut (*Juglans nigra*), and Roughleaf Dogwood (*Cornus drummondii*). Four TxDOT Woodland Data Forms were completed for four sites where proposed ROW acquisitions along either side of IH 35E would effect existing woodland vegetation. Sugarberry (*Celtis laevigata*) and Cedar Elm (*Ulmus crassifolia*) are considered dominant species on the IH 35E section. Sugarberry ranged in diameter at breast height (dbh) to 14 inches and in height to 35 feet. Cedar Elm ranged in dbh to 32 inches and in height to 50 feet. Fencelines exhibited variable vegetative growth and included Sugarberry, Cedar Elm, Hercules-club (*Zanthoxylum clava-herculis*), Honey Locust (*Gleditsia triacanthos*), Yaupon (*Ilex vomitoria*), Bois d'arc (*Malcura pomifera*), and Basswood (*Tilia caroliniana*).

Improvements to U.S. 67 were evaluated based upon anticipated effects to vegetation located within the existing ROW. Vegetation within the existing ROW was well maintained and appeared to be consistent with TxDOT ROW seeding. Many areas exhibited landscape planting of various woody species like: Southern Red Oak (*Quercus falcata*), Cedar Elm (*Ulmus crassifolia*), Crepe Myrtle (*Lagerstroemia indica*), Redbud (*Cercis canadensis*), Eastern Red Cedar (*Juniperus virginiana*), Sweetgum (*Liquidambar styraciflua*), Burr Oak (*Quercus macrocarpa*), Post Oak (*Quercus stellata*), and Loblolly Pine (*Pinus taeda*). The existing ROW was composed of grasses like Bermuda (*Cynodon dactylon*), Switchgrass (*Panicum virgatum*), Little Bluestem (*Schizachyrium scoparium*), Green Sprangletop (*Leptochloa dubia*), and Buffalograss (*Buchloe dactyloides*). These areas were mowed and very well maintained. At some ditch and creek crossings, some woody vegetation has been allowed to intrude into the existing ROW. These areas are few and at most intruded approximately 20 feet into the existing ROW. Species included Black Willow (*Salix nigra*), Prairie Flameleaf Sumac (*Rhus lanceolata*), Sugarberry (*Celtis laevigata*), Redbud (*Cercis canadensis*), Poison Ivy (*Toxicodendron radicans*), and Eastern Red Cedar (*Juniperus virginiana*). The extent of vegetation along adjacent fencelines varied. Some fencelines exhibited reasonable vegetation growth, while others exhibited little or no growth at all. Species were typical of what may be commonly found within the general area. Species found included Eastern Red Cedar (*Juniperus virginiana*), Sugarberry (*Celtis laevigata*), Poison Ivy (*Rhus toxicodendron*), Giant Ragweed (*Ambrosia trifida*), Johnsongrass (*Sorghum halepense*), Mustang Grape (*Vitis mustangensis*), Greenbriar (*Smilax bona-nox*), and Rattan Vine (*Berchemia scandens*). In the general area of the U.S. 67 section, Eastern Red Cedar was dominant and appeared to be slowly invading many

fields that had been left fallow or ungrazed for some time. Eastern Red Cedar reached a 16 inch dbh and a height of over 35 feet.

Percent cover for the project area was estimated to be approximately 35%. Woodland areas were isolated and scattered throughout the length of the project. Some areas were wooded lots, but primarily most woodland areas were found at stream, creek or ditch crossings and along existing fencelines. Well established neighborhoods also exhibited mature tree growth but the extent of growth was limited. As previously mentioned, landscape trees were utilized in various areas of the existing ROW throughout the project.

Some unusual vegetative features and special habitat features do exist within the limits of the project. All four areas where woodland data forms were prepared were considered riparian woodlands. See Figure 6: Tree Removal Maps in **Appendix A** and the Woodland Data Forms in **Appendix D**. The woodland areas, in every case, paralleled a stream, creek, or ditch and the vegetation was well established. Woodland Data Form #4 indicates old growth riparian habitat along a tributary to the Trinity River. This area included some dead trees and snags throughout. Several landscape oak trees, approximately 24" dbh and 40' in height, exist along S. Zang Blvd. at the intersection of W. Clarendon Dr. Though these trees are not exceptionally large, they are large enough to provide shade for local businesses and pedestrians and add to the aesthetics of the area.

Wildlife is generally typical for what may be expected in rural/suburban areas in the southern portion of U.S. 67 and more urban areas in the northern portion of the project. Carcasses of animals like skunks, opossums, raccoons, and maybe even deer may be found from time to time along the ROW in the southern portion of the project, where they have been possibly hit by automobiles and died. Tracks of animals like the Coyote (*Canis latrans*), Raccoon (*Procyon lotor*), Striped Skunk (*Mephitis mephitis*), and the White-tailed Deer (*Odocoileus virginianus*) can be found along the streams in the southern portion of the project where conditions allow and even within the existing ROW. Reptiles and amphibians like the Blotched Water Snake (*Nerodia eryrogaster transversa*), the Broad-banded Water Snake (*Nerodia fasciata confluens*), the Rough Green Snake (*Opheodrys aestivus*), the Six-lined Racerunner (*Cnemidophorus sexlineatus sexlineatus*), the Midland Smooth Softshell (*Trionyx muticus muticus*), and the Ground Skink (*Scincella lateralis*) can also be seen on occasion in the same general area. Birds like the Western Kingbird (*Tyrannus verticalis*), Downy Woodpecker (*Picoides pubescens*), Yellow-billed Cuckoo (*Coccyzus americanus*), Morning Dove (*Zenaida macroura*), and the Scissor-tailed Flycatcher (*Tyrannus forficatus*), along with many other avian species, may be considered somewhat common in the southern portion of the project. Most, if not all, of these species may still be found in the northern portion of the project, but not as commonly, because the area is much more developed and urbanized except for a few isolated tracts and pockets along existing streams and creeks. In the northern portion of the project, the Green Anole (*Anolis carolinensis*), the Plains Blind Snake (*Leptotyphlops dulcis dulcis*), the Ground Skink, the Texas Spiny Lizard (*Sceloporus olivaceus*), and the Texas Rat Snake (*Elaphe obsoleta lindheimeri*) are the more commonly found reptiles. In urban areas, such as those found toward the northern portion of the project, the Common Grackle (*Quiscalus quiscula*), Northern Mockingbird (*Mimus polyglottos*), House Finch (*Carpodacus mexicanus*), European Starling (*Sturnus vulgaris*), and Northern Cardinal (*Cardinalis cardinalis*) are much more commonly

seen avian species. Mammals such as those found in the southern portion of the project can again be found in the northern portion of the project, but usually in smaller numbers. Many of these mammals use riparian woodlands along rivers, streams, and creeks as travel corridors and for foraging. Depending upon local conditions, small populations of these mammalian species may exist for years in these areas. Also, some mammalian species can readily adapt to man's environment and urbanization and may live among human residential and commercial developments without being noticed to any real extent.

Effects to vegetation are expected to be minimal. Most areas where new ROW is being acquired are limited to an additional 10 to 20 feet of width, with a maximum acquisition width of 60 to 65 feet of woodland area for Woodland Data Site #4. The total anticipated amount of woodland area effected by this project is approximately 1.02 acres. The largest estimated area of woodland vegetation removal was estimated to be approximately 0.80 acres on Woodland Data Site #4. The loss of any dead trees or snags would be minimal because few if any exist within the new ROW acquisition area and, most new ROW acts primarily as a buffer area for local wildlife. A couple of snags and a dead tree were found at Woodland Data Site #4. These features would be lost with the clearing of this area. Many of the landscape trees that are found within the existing ROW would be lost. Several large oaks located at the intersection of S. Zang Blvd. and W. Clarendon Dr. would be lost because of the new alignment of IH 35E in that area.

Mitigation for the effects to riparian habitat and other unique or special habitat features (large trees or fencerow vegetation) would be in accordance with the Memorandum of Agreement between TxDOT and the TPWD. This states that some habitats may be given consideration for non-regulatory mitigation during project planning. These habitats include:

- Habitat for Federal candidate species if mitigation would assist in the prevention of the listing of the species,
- Rare vegetation series (S1, S2, or S3) that also locally provide habitat for a state listed species,
- All vegetation communities listed as S1 or S2, regardless of whether or not the series in question provides habitat for state-listed species,
- Bottomland hardwoods, native prairies, and riparian sites, and
- Any other habitat feature considered to be locally important.

Based the effects listed above, TxDOT would compensate for effects to the 1.02 acres of riparian woodlands and large oaks (approximately 24 inch dbh) with the planting of replacement trees. Proposed locations for replacement plantings include the Dallas Zoo, other city parks and locations within TxDOT ROW where space allows. Areas such as Loop 12, where the ramps would be reconfigured would provide an opportunity within the proposed ROW for tree mitigation and beautification (see **Appendix C**, Sheet 3 of 5). TxDOT would try to minimize the effects by preserving as many trees as possible. Trees within the ROW, but not in the construction zone, would be avoided if possible.

Effects to habitat and wildlife species that exist within the project area should be minimal. Some very limited direct effects to small less mobile species may be anticipated. Some effects could also occur to larger mammalian species that seek refuge in holes or nest sites in trees that would be removed. Again, these effects would be expected to be minimal if they occur at all.

Migratory avian species are protected under the Migratory Bird Treaty Act (MBTA). The MBTA makes it unlawful to take, kill, possess, transport or harm migratory birds, their eggs, parts and nests. If construction or clearing is to take place during nesting season, which could extend from March through July, trees would need to be checked for active nests prior to the commencement of work. If any active nests are found, the local USFWS biologist should be contacted by TxDOT to determine an appropriate plan of action.

Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act, as amended on October 11, 1996, directs that all Federal agencies, whose actions would effect fish habitat, must consult with the National Marine Fisheries Service regarding potential adverse effects. This requires any project that receives Federal funding must address potential effects to essential fish habitat. Due to the nature and location of this project, essential fish habitat would not be effected.

Invasive Species and Beneficial Landscape Practices

In accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, landscaping would be limited to seeding or planting of the right-of-way according to TxDOT approved seeding specifications where possible.

J. Historical Sites

Methodology

All buildings, sites, and structures in the Area of Potential Effect (APE) that date to or before 1962 were documented and their eligibility assessed for listing on the National Register of Historic Places (NRHP). The APE consisted of 500 feet on either side of the proposed IH 35E and U.S. 67 ROW. In many cases the APE extended 600 feet or more from the current ROW. In addition, records and files were examined in the Texas Historic Commission (THC) NRHP and THC Historic Marker files for previously recorded historic buildings, sites, districts, and markers. Readily available historical and archival sources were used to determine the historical background of the area, and historical maps and state agency resources were consulted as further references. Building construction records in the online resources of the Dallas Central Appraisal District were reviewed to determine dates of construction for the buildings included in the APE.

The project was divided into two segments, IH 35E and U.S. 67, to better evaluate the overall project. The summary is provided according to those segments.

Historical cultural resources include historical and architectural sites. Those resources located on land owned by or under the administration of the State of Texas, its cities, counties, or other political subdivisions are statutorily covered by the Texas Antiquities Code (TAC). Under the TAC, any historic property on state land may be eligible as a State Archeological Landmark (SAL). Chapter 26 of the THC's Rules of Practice and Procedure for the Antiquities Code of Texas determines eligibility for SAL status.

If projects are federally permitted, licensed, funded, or partially funded, Section 106 of the 1966 National Historic Preservation Act (NHPA) applies, requiring federal agencies to evaluate the project's effects on historic properties. Under Section 106, any property listed in or eligible for listing in the NRHP is considered historic; such properties may be buildings, structures, objects,

sites, districts, or archeological resources. “Protection of Historic Properties” 36 CFR 800 regulates the Advisory Council on Historic Preservation (ACHP) process.

Federally funded highway projects must also evaluate the project’s effects on Section 4(f) properties, which include publicly owned parks, recreation areas, wildlife management areas, and significant historic sites. Section 4(f) of the 1966 Department of Transportation Act (DOT Act) and the 1966 Federal Highway Act details regulations for those procedures.

Historical resources in the APE are buildings, sites, structures, or objects that are usually at least 50 years old at the time of construction. For this project, the historic date was set at 1962 or before.

In order to qualify for placement on the NRHP, a site, building, structure or object must meet certain criteria for historical significance on a national, state, or local level and must retain sufficient historical integrity to display that significance (U.S. Dept. of Interior, 1991: 3-5). Standing structures may be significant under one or more of three criteria:

- A. association with an important event or pattern of history
- B. association with an important person
- C. as the work of a master builder or architect; as an outstanding example of a particular architectural style; or if possessing the distinctive characteristics of a type, period, or method of construction

Integrity is measured by the extent to which the site, structure, building, or object retains sufficient historic fabric to convey its significance. In other words, would a person who knew the place during its period of historical significance recognize it?

In addition, historic districts must meet the same criteria and must have a sufficient number of historical buildings and structures within the boundaries to display that historical significance.

With few exceptions, the buildings in the survey represent common housing and subdivision patterns prevalent in Texas and the nation during the mid-twentieth century. They form no historically or architecturally significant patterns of history, either nationally, statewide, or locally.

Summary and Conclusions

IH 35E: A Reconnaissance Standing Structures Survey for the study area was performed in December, 2001, and January, 2002. The study area enumerated 1,280 buildings considered to have been constructed in or prior to 1962. With the exception of the Tenth Street NRHP District, none of the buildings are listed on the NRHP, nor are there Recorded Texas Historical Landmarks or Texas Historical markers. The Tenth Street district lies east of IH 35E and is bounded by East Eighth Street on the north, IH 35E and Fleming Ave. on the west, Clarendon Drive and the old interurban ROW on the southeast, and the termini of Church, East Ninth, and Plum streets on the east (**Appendix C, Sheet 5 of 5**). The district is important as a “concentrated collection of early 20th century vernacular architecture,” particularly reflecting a long-lived, mixed-use African-American community and “Oak Cliff’s most important African American neighborhood” (THC n.d.b). The district contains residences, a school, commercial buildings,

religious structures, and the Oak Cliff Cemetery (not an African-American cemetery). A number of sites in the current project APE fall within the district boundaries and have been listed as contributing or noncontributing. The 2002 photographic survey revealed that the district is presently undergoing some changes, and more than a few buildings within the APE that were listed as contributing in the NRHP survey have since been demolished. Others are presently tagged for demolition due to condemnation. In addition, modern buildings are encroaching, especially on the north and western ends of the district.

The McAdams Cemetery lies just west of IH 35E in the 2400 block of Brookhaven Avenue (**Appendix C, Sheet 4 of 5**). The cemetery was extremely overgrown when photographed in the summer of 2002. Two stones were standing; three others were toppled. There were possibly other gravesites, but they were unrecognizable in the undergrowth. According to a sign in the undergrowth, the cemetery dates from 1882 to 1921. In order to meet the National Register requirements for historical significance under Criteria Consideration D: Cemeteries, a cemetery “is eligible if it derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events.” While the denizens of the McAdams Cemetery were among the descendants of the first settlers of this area of Collin County, they were not persons of “transcendent importance.” Neither is the cemetery exceptionally old for the area; its design has occurred as burials have been put into place; and it has not been associated with significant historical events. Although the McAdams Cemetery does not meet the standard for NRHP listing, it is likely eligible for designation as a Historic Texas Cemetery through the Texas Historical Commission.

U.S. 67: A Reconnaissance Standing Structures Survey for the study area was performed in December, 2001, and January, 2002. The APE extended approximately 500 feet from the IH 35E ROW. The survey enumerated a total of 67 buildings in the study area, 44 buildings constructed in or prior to 1962 between IH 35E and IH 20, and 23 buildings between IH 20 and FM 1382. None of the buildings are listed on the NRHP, neither are there Recorded Texas Historical Landmarks or Texas Historical Markers. None of the buildings in the study area individually meets the standards for inclusion on the National Register of Historic Places, either individually or as a contributing element to a historic district.

K. Archeological Sites

Assessment

An investigation into the potential impacts by the proposed project was conducted in order to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966 and fulfill the cultural requirements of NEPA. As a result of Section 106 of NHPA and NEPA it is necessary for a cultural assessment and/or survey to be performed on any project that includes federal involvement.

Section 106 requires that federal agencies “take into account how each of its undertakings could affect historic properties” (ACHP 1986). This includes any form of construction, rehabilitation and repair, demolition licenses and permits, loans, grants, property transfers, and other types of federal involvement. An historic property includes buildings, structures, objects, sites, districts, and archeological resources that may or may not have been listed on the NRHP. This includes sites that have not yet been discovered.

Assessment involved a desk-based investigation utilizing numerous resources. These included USGS topographical quadrant maps, county soil surveys, aerial photographs, and a search for previously recorded sites within the project area. Additionally, a predictive model was developed projecting the likelihood that the proposed project would impact cultural resources. This model takes into account five factors:

1. Known locations of archeological sites in the area of the proposed project.
2. Settlement patterns and likely location for unrecorded archeological sites.
3. Geologic and other conditions that affect the preservation of intact archeological deposits.
4. Results of previous archeological investigations in the area of the proposed project.
5. Historical patterns of determinations of eligibility for archeological sites.

Previously assessed and recorded archeological sites, National Register Properties and SALs within Dallas County were compared to an existing predictive model (Moore 1995) and a Potential Archeological Liability Model (PALM) used in the Houston area (Abbott 2001). Based on the comparisons and assessments a tentative set of factors were developed which would constitute a set of “settlement rules” defining likely occupation sites and where conditions are satisfactory for site preservation. These include preferences for:

1. Locations in proximity to extent and identifiable relic natural sources of potable water (within 1,000 ft).
2. Locations on well-drained, loamy/sandy soils.
3. Locations on topographic high points. Small high points would not necessarily be identifiable by the standard 10’ contour intervals on the USGS quadrangle maps for the area and would need to be located in the field.
4. Locations with natural exposures of workable stone (i.e. Ogallala Quartzite). Numerous such sites have been recorded as Native American lithic acquisition quarries within Dallas County.

In terms of site preservation a set of factors were added affecting the likely preservation of sites. These factors do not predict the location of sites, only if potential sites would retain integrity. These include:

1. Locations with intensive commercial/industrial/residential development are not likely to contain intact sites.
2. Locations of surface mining (particularly gravel extraction common in the area) are not likely to contain intact sites.
3. Locations beneath reservoirs and stock ponds may still contain sites. It would obviously not be possible to investigate sites in this context. Additionally, such sites have often been deflated by wave action.
4. Locations with a history of agricultural activity. Such locations may still retain artifacts but with a loss of internal integrity (these would need to be individually assessed based on soil type, crop type, and duration of farming).

5. Locations with the potential for rapid deposition of soils, such as floodplains. These locations have the possibility of burying sites beyond the reach of manual excavation and may require backhoe trenching.
6. Locations with exposed soils where wind erosion may have caused deflation of the site. Such locations may still retain artifacts, but would likely have lost internal integrity in the truncated layers. Additionally, such sites have been exposed to collecting and the removal of diagnostic artifacts.

The predictive model and the factors it presents are preliminary and would be refined over time. As additional information and elements are added it would be possible to more thoroughly understand the potential for sites and the potential for their preservation. This predictive model is specifically for prehistoric and is not applied to historic resources.

An examination of the general corridor of IH 35E/U.S. 67 looked at a 1,000 ft study area to either side of the centerline of the project corridor. Assessment of the specific IH 35E and U.S. 67 segments dealt with a 300 ft study area to either side of the roadways. This is based on the widest potential impact from construction of the ROW expansion. This area totaled approximately 650 acres on IH 35E and approximately 803 acres on U.S. 67.

Along IH 35E eight previously recorded sites exist within the general corridor. No previously recorded sites exist within the specific IH 35E segment. Along U.S. 67 three previously recorded sites exist within the general corridor. These sites are 41DL133, 41DL134, and 41DL280. Sites 41DL133 and 41DL134 are both prehistoric sites. Site 41DL280 is a historic tenant farm which is not considered significant. No previously recorded sites exist within the specific U.S. 67 segment. The absence of sites may be due to a sampling bias or simply the small number of surveys directly impacting the proposed alignment.

In the unlikely event that evidence of archeological deposits is encountered during construction, work in the immediate area would cease and TxDOT archeological staff would be contacted to initiate discovery procedures under the provisions of the Programmatic Agreement between TxDOT, THC, FHWA, and the Advisory Council on Historic Preservation and the Memorandum of Understanding between TxDOT and the THC.

L. Aesthetic Considerations

Section 136 of the Federal Aid Highway Act of 1970 (Public Law [P.L.] 91-605) requires consideration of aesthetic values in the highway planning process. Comments from public meetings were considered during the design process of the proposed facility to minimize perceived aesthetic impacts. The most prominent features which influenced the proposed project within the viewshed included the creeks (Cedar Creek, Five Mile Creek, Woody Branch, Mauk Creek, Bentle Branch, Ricketts Branch, and Ten Mile Creek), parks, and the Dallas Zoo. There would be very few changes to the aesthetic environment from both the “view of” and the “view from” perspectives. The proposed modifications to the existing highway are primarily within the existing ROW.

M. Prime, Unique, and Special Farmland Impacts

The additional ROW necessary for the expansion of the facility is currently developed, urbanized, and/or zoned for urban use. The proposed project is exempt from the requirements of

the Farmland Protection Policy Act (FPPA) and requires no coordination with the Natural Resources Conservation Service (NRCS).

N. Air Quality Assessment

The proposed North Central Texas project is in Dallas County, which is part of EPA's designated eight-hour, nine county non-attainment area for the pollutant ozone, therefore, the transportation conformity rule applies. The proposed project is consistent with the area's financially constrained long-range, metropolitan transportation plan (MTP) known as Mobility 2025: The Metropolitan Transportation Plan - Amended April 2005 and the 2006-2008 Statewide Transportation Improvement Program/Transportation Improvement Program (STIP/TIP). The October 31, 2005 US DOT TIP finding was based on the conformity determination issued by US DOT for the 2025 MTP on June 16, 2005. Additionally, the project comes from an operational Congestion Management System (CMS) that meets all requirements of 23 CFR Highways, Parts 450 and 500.

The primary pollutants from motor vehicles are volatile organic compounds (VOCs), carbon monoxide (CO), and nitrogen oxides. Volatile organic compounds and nitrogen oxides can combine under the right conditions in a series of photochemical reactions to form ozone (O₃). Because these reactions take place over a period of several hours, maximum concentrations of ozone are often found far downwind of the precursor sources. Thus, ozone is a regional problem and not a localized condition.

The procedures for modeling ozone require long-term meteorological data and detailed area wide emission rates for all potential sources (industry, business, and transportation) and are normally too complex to be performed within the scope of an environmental analysis for a highway project. Therefore, concentrations of ozone for the purpose of comparing the results of the National Ambient Air Quality Standards (NAAQS) are modeled by the regional air quality planning agency for the SIP.

The topography and meteorological conditions of the area in which the project is located would not seriously restrict dispersion of the air pollutants. The traffic data used in the analysis was obtained from the TxDOT TPP Division. The Estimated Time of Completion "ETC year" and "ETC+20" traffic varies along the project area as shown in Table 1-4.

Using the CALINE3/MOBILE6 computer program and TPP traffic data, CO concentrations were determined in accordance with the TxDOT Air Quality Guidelines. CO concentrations for the proposed action were modeled using the worst-case scenario (adverse meteorological conditions and sensitive receptors at the ROW line) in accordance with the TxDOT Air Quality Guidelines, at 16 locations along the corridor. The proposed schematics in **Appendix C** display the air receiver locations. The traffic volumes resulting in the highest CO concentrations are 225,823 vehicles per day for "ETC year" 2020, and 328,044 vehicles per day for "ETC+20" 2040. Local concentrations of CO are not expected to exceed national standards at any time.

Analysis Findings

CO background ambient concentrations of 3.7 parts per million (PPM) for a one hour average and 2.3 ppm for an eight hour average were used in the analysis. The National Ambient Air Quality Standards (NAAQS) for CO is 35.0 ppm for one hour and 9.0 ppm for eight hours. CO concentrations for this segment of the Southern Gateway were modeled under the worst meteorological conditions (wind speed of 1 m/s, wind bearing of 90°, stability class of F, surface roughness of 100 cm, and mixing height of 1000m). Station number 664+00 along IH 35E had the highest percent NAAQS for the existing year (2020) and projected year (2040), as shown in **Table 4-7**. For a complete listing of the CO concentrations modeled, refer to **Appendix D**.

Table 4-7
Carbon Monoxide Concentrations

Year	Station Number	1HR CO (ppm) *	1 HR % NAAQS	8 HR CO (ppm) *	8 HR % NAAQS	Schematic Sheet No.
2020	664+00	10.0	28.57%	6.1	67.56%	1
2040	664+00	8.9	25.43%	5.4	60.22%	1

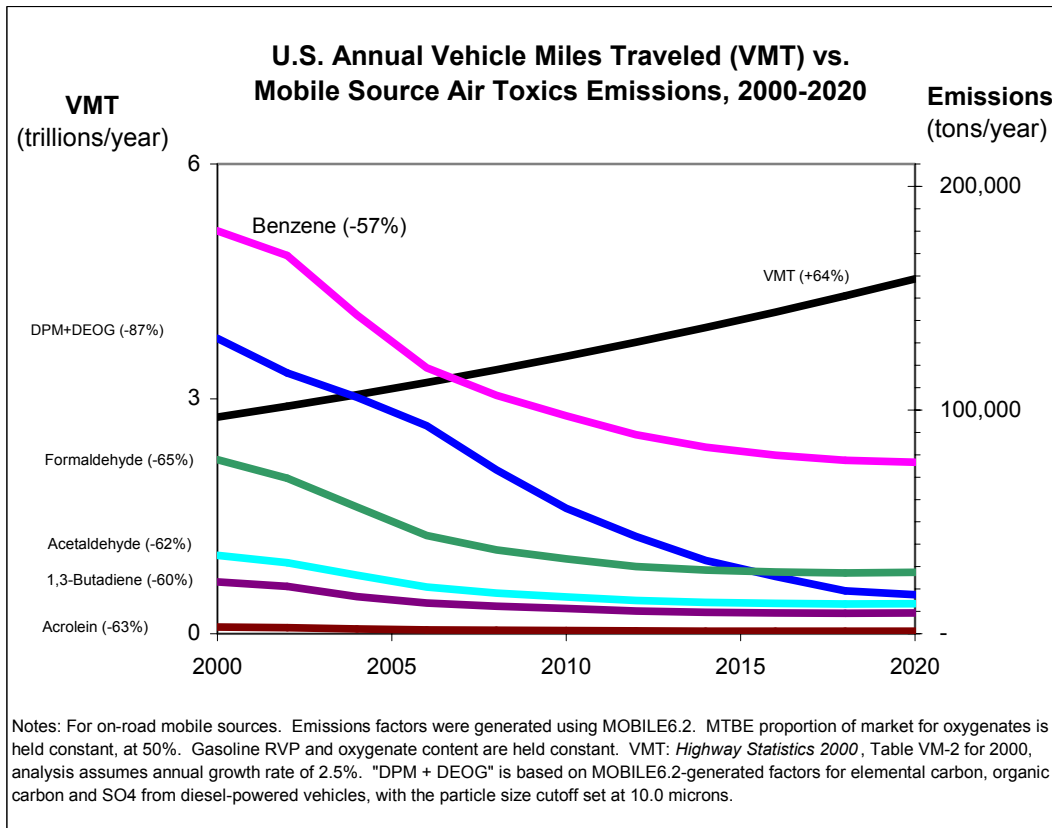
*The National Ambient Air Quality Standard (NAAQS) for CO is 35 ppm for one hour and 9 ppm for eight hours. Analysis includes a one hour background concentration of 3.7 ppm and an eight hour background concentration of 2.3 ppm.

Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards (NAAQS), EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources. 66 FR 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in VMT, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent, as shown in the following graph:



As a result, EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(l) that will address these issues and could make adjustments to the full 21 and the primary six MSATs.

Unavailable Information for Project Specific MSAT Impact Analysis

Available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the Build Alternative in this EA. Due to these limitations, the following discussion is included in accordance with CEQ regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information:

Information that is Unavailable or Incomplete: Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

1. Emissions: The EPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has

limited applicability at the project level. MOBILE 6.2 is a trip-based model--emission factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Also, the emissions rates used in MOBILE 6.2 for both particulate matter and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, EPA has identified problems with MOBILE6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

2. Dispersion. The tools to predict how MSATs disperse are also limited. The EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The NCHRP is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also will focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.
3. Exposure Levels and Health Effects. Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose

extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSAT: Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or State level.

The EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at <http://www.epa.gov/iris>. The following toxicity information for the six prioritized MSATs was taken from the IRIS database *Weight of Evidence Characterization* summaries. This information is taken verbatim from EPA's IRIS database and represents the Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust** is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.
- **Diesel exhaust** also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function

and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by EPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes -- particularly respiratory problems⁵. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of impacts based upon theoretical approaches or research methods generally accepted in the scientific community: Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

FHWA acknowledges that the build alternative may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

In a typical project, the VMT estimated for a Build Alternative is slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOBILE6 emissions model, emissions of all of the priority MSATs except

⁵ South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 Studies on the relationship between health and air quality); NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited therein.

for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases will offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. The design year for this proposed project is 2030. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the Build Alternative will have the effect of moving some traffic closer to nearby homes, schools and businesses; therefore, under this alternative there may be localized areas where ambient concentrations of MSATs could be higher in the Build Alternative than the No Build Alternative. Bases on these studies of ambient concentrations of MSATs, the localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built between Illinois Avenue and Clarendon Drive. However, as discussed above, the magnitude and the duration of these potential increases compared to the No Build alternative cannot be accurately quantified due to the inherent deficiencies of current models. In sum, when a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Congestion Management System (CMS)

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. The Southern Gateway Transportation Study was developed from the NCTCOG operational CMS, which meets all requirements of CFR500.109. The CMS was adopted by the NCTCOG in May, 2001.

Operational improvements and travel demand reduction strategies are commitments made by the region at two levels: the program level and the project implementation level. Program level commitments are inventoried in the regional CMS and are included in the financially constrained Metropolitan Transportation Plan (MTP).

The CMS element of the plan carries an inventory of all project commitments detailing the type of strategy, implementation responsibilities, schedules, and expected costs. At the project implementation level, travel demand reduction strategies and commitments would be added to the regional TIP or included in the construction plans. The regional TIP provides for

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

Committed congestion reduction strategies and operational improvements within the Southern Gateway study area would consist of signalization and intersection improvements. TxDOT, under the Congestion Mitigation and Air Quality (CMAQ) program, would manage these projects, which are included in the regional CMS. Individual projects are listed in **Table 4-8**.

Table 4-8
Operational Improvements in the Travel Corridor

Location	Type	Implementation Year	Funding Source	TIP #	Cost
Eighth at IH 35E	Traffic Signal Improvement	2001	Dallas	775.0516	Portion of \$24,610,500
Dallas County – IH 30, IH 35E, IH 635, U.S. 67	ITS	2000	Dallas	2493.1000	\$2,700,000
Dallas County – IH 30, IH 35E, IH 635, U.S. 67, Woodall Rogers Freeway	ITS	1997	Dallas	2493.2000	\$1,600,000
Ewing at IH 35E	Traffic Signal Improvement	2001	Dallas	775.0558	Portion of \$24,610,500
Marsalis at IH 35E	Traffic Signal Improvement	2001	Dallas	775.1041	Portion of \$24,610,500
Beckley at Clarendon	Traffic Signal Improvement	2001	Dallas	775.0114	Portion of \$24,610,500
Illinois at IH 35E	Traffic Signal Improvement	2001	Dallas	775.0836	Portion of \$24,610,500
Kiest at IH 35E	Traffic Signal Improvement	2001	Dallas	775.0910	Portion of \$24,610,500
Conway at Kiest	Traffic Signal Improvement	2001	Dallas	775.0423	Portion of \$24,610,500
Kiest at U.S. 67 NBSR	Traffic Signal Improvement	2001	Dallas	775.0905	Portion of \$24,610,500
U.S. 67/IH 35E from IH 20 to Dallas North Tollway	HOV	1999	TxDOT-Dallas/DART	1211.2000	\$29,430,265
U.S. 67 at Polk	Traffic Signal Improvement	2001	Dallas	775.1010	Portion of \$24,610,500
Five-Mile Creek Bikeway from IH 35E to Coombs Creek	Bike/ Pedestrian	2002	Dallas	562.0000	\$285,000
Ann Arbor at IH 35E	Traffic Signal Improvement	2001	Dallas	775.0072	Portion of \$24,610,500
Hampton at U.S. 67	Traffic Signal Improvement	2001	Dallas	775.0728	Portion of \$24,610,500
Hampton at U.S. 67	Intersection Improvement	2003	Dallas	783.0051	Portion of \$21,152,534
Hampton at U.S. 67	Intersection Improvement	2002	DART	523.0019	Portion of \$2,780,000
Laureland at IH 35E	Traffic Signal Improvement	2001	Dallas	775.0952	Portion of \$24,610,500
IH 35E NAFTA Modular Deployment	ITS	2004	TxDOT – Fort Worth	11187.000	\$1,610,000

Location	Type	Implementation Year	Funding Source	TIP #	Cost
U.S. 67 at Redbird	Traffic Signal Improvement	2001	Dallas	775.1011	Portion of \$24,610,500
Camp Wisdom at IH 35E	Traffic Signal Improvement	2001	Dallas	775.0251	Portion of \$24,610,500
IH 20 from U.S. 67 to IH 35E	ITS	2001	TxDOT Dallas	11127.000	\$2,052,000
IH 20 from IH 35E to IH 45	New Roadway	2004	TxDOT-Dallas	2374-03-049	\$14,900,001
IH 20 Frontage Roads from IH 35E to IH 45	New Roadway	2002	TxDOT-Dallas	11229.0000	\$14,900,000
Dallas County Speed and Incident Reporting	ITS	2001	TxDOT-Dallas	11137.0000	\$4,240,000
U.S. 67 at Wheatland	Traffic Signal Improvement	2001	Dallas	775.1012	Portion of \$24,610,500
Danieldale Rd from Cockrell Hill to East Duncanville City Limits	Addition of Lanes	2002	Duncanville	1188.0000	\$490,000
Danieldale at U.S. 67	Intersection Improvement	2002	Duncanville	1212.0003	\$215,643
Joe Wilson Road from Belt Line to U.S. 67	Addition of Lanes	2001	Dallas County	DAC 164	\$6,313,000
Pleasant Run Road from FM 1382 to Joe Wilson Road	Addition of Lanes	2003	Cedar Hill	CHL 151	\$5,217,000
FM 1382 from Hampton Road to U.S. 67	Addition of Lanes	2002	TxDOT-Dallas	1047-02-002	\$15,100,000
FM 1382 from U.S. 67 to Cedar Hill City Limits	Addition of Lanes	1993	TxDOT-Dallas	387.0000	\$8,952,991
U.S. 67 at FM 1382/Pleasant Run Road	Interchange	2002	TxDOT-Dallas	0261-02-055	\$1,100,000
U.S. 67 at FM 1382	Intersection Improvement	2004	Cedar Hill	11429.0000	\$275,000

*Source: North Central Texas Council of Governments

In an effort to reduce congestion and the need for SOV lanes in the region, TxDOT and NCTCOG would continue to promote appropriate congestion reduction strategies through the CMAQ program, the CMS, and MTP. According to NCTCOG, the congestion reduction strategies considered for this project would help alleviate congestion in the study area but would not eliminate it.

O. Noise Assessment

This analysis conforms to Federal Highway Administration (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.

Sound from highway traffic is generated primarily from a vehicle's tires, engine and exhaust. It is commonly measured in decibels and is expressed as "dB."

Sound occurs over a wide range of frequencies. However, 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 "dBA."

Also, because traffic sound levels 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 "Leq."

The traffic noise analysis typically includes the following elements:

- Identification of land use activity areas that might be impacted by traffic noise.
- Determination of existing noise levels.
- Prediction of future noise levels.
- Identification of possible noise impacts.
- Consideration and evaluation of measures to reduce noise impacts.

The FHWA has established the following Noise Abatement Criteria (NAC) for various land use activity areas that are used as one of two means to determine when a traffic noise impact will occur.

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.

NOTE: primary consideration is given to exterior areas (Category A, B or C) frequently used by humans. However, interior areas (Category E) are used if exterior areas are physically shielded from the roadway, or if there is little or no human activity in exterior areas adjacent to the roadway.

A noise impact occurs when either the absolute or relative criterion is met:

Absolute criterion: the predicted noise level at a receiver approaches, equals or exceeds the NAC. "Approach" is defined as one dBA below the NAC. For example: a noise impact would occur at a Category B residence if the noise level is predicted to be 66 dBA or above.

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 dBA. For example: a noise impact would occur at a Category B residence if the existing level is 54 dBA and the predicted level is 65 dBA (11 dBA increase).

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 of traffic noise on an activity area.

The FHWA traffic noise modeling software was used to calculate existing and 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 locations of activity areas likely to be impacted by the associated traffic noise.

Existing and predicted traffic noise levels were modeled at 102 receiver locations (See **Table 4-9 and Appendix C**) that represent land use activity areas adjacent to the highway project that might be impacted by traffic noise and that may potentially benefit from reduced noise levels.

**Table 4-9
Traffic Noise Levels (dBA Leq)**

Receiver	NAC Category	NAC Level	Existing	Predicted	Change (+/-)	Noise Impact	Schematic Page Number
IH 35E							
35R1 – Residential	B	67	64	68	4	Y	1 of 5
35R2 – Residential	B	67	71	74	3	Y	2 of 5
35R3 – Residential (Good Luck Trailer Park)	B	67	70	72	2	Y	2 of 5
35R4 – Church	E	52	46	49	3	N	2 of 5
35R5 – Residential (Glen Haven Trailer Park)	B	67	72	75	3	Y	3 of 5
35R6 – Church	E	52	40	43	3	N	3 of 5
35R7 – Residential	B	67	67	70	3	Y	3 of 5
35R8 – Residential	B	67	73	76	3	Y	3 of 5
35R9 – Residential	B	67	72	76	4	Y	3 of 5
35R10 – Apartment	E	52	41	45	4	N	3 of 5
35R11 – Motel	E	52	44	46	2	N	3 of 5
35R12 – School	E	52	44	46	2	N	3 of 5
35R13 – School	B	67	70	75	5	Y	3 of 5
35R14 – Residential	B	67	70	75	5	Y	4 of 5
35R15 - Residential	B	67	70	75	5	Y	4 of 5
35R16 - Residential	B	67	74	74	0	Y	4 of 5
35R17 - Residential	B	67	73	72	-1	Y	4 of 5
35R18 - Church	E	52	43	45	2	N	4 of 5
35R19 - Residential	B	67	74	73	-1	Y	4 of 5
35R20 - Residential	B	67	75	76	1	Y	4 of 5

Receiver	NAC Category	NAC Level	Existing	Predicted	Change (+/-)	Noise Impact	Schematic Page Number
35R21 - Residential	B	67	76	80	4	Y	4 of 5
35R22 - Residential	B	67	76	80	4	Y	4 of 5
35R23 - Residential	B	67	76	83	7	Y	4 of 5
35R24- Residential	B	67	75	79	4	Y	4 of 5
35R25 - Residential	B	67	70	73	3	Y	5 of 5
35R26 – Church	E	52	45	56	11	Y	5 of 5
35R27 - Residential	B	67	76	82	6	Y	5 of 5
35R28 - Residential	B	67	78	81	3	Y	5 of 5
35R29 – Dallas Zoo (Exhibit)	B	67	73	78	5	Y	5 of 5
35R30 - Motel	E	52	46	38	-8	N	5 of 5
35R31 – Child Care	E	52	50	55	5	Y	5 of 5
35R32 - Residential	B	67	72	76	4	Y	5 of 5
35R33 – Residential*	B	67	71	75	4	Y	5 of 5
35R34 – Residential*	B	67	75	79	4	Y	5 of 5
35R35 - Residential	B	67	70	74	4	Y	5 of 5
35R36 - Apartment	E	52	49	49	0	N	5 of 5
35R37 - Apartment	E	52	48	48	0	N	5 of 5
35R38 - Residential	B	67	70	77	7	Y	5 of 5
35R39 – Child Care	E	52	49	55	6	Y	5 of 5
35R40 - Residential	B	67	70	74	4	Y	5 of 5
35R41 - Residential	B	67	70	72	2	Y	5 of 5
35R42 - Residential	B	67	69	71	2	Y	5 of 5
35R43 - Residential	B	67	70	72	2	Y	5 of 5
35R44 - Residential	B	67	73	74	1	Y	4 of 5
35R45 - Residential	B	67	74	77	3	Y	4 of 5
35R46 - Residential	B	67	76	82	6	Y	4 of 5
35R47 - Residential	B	67	77	83	6	Y	4 of 5
35R48 - Residential	B	67	76	81	5	Y	4 of 5
35R49 - Apartment	E	52	44	47	3	N	4 of 5
35R50 – School (CFTNI)	E	52	43	45	2	N	4 of 5
35R51 - Church	E	52	39	44	5	N	4 of 5
35R52 - Church	E	52	41	48	7	N	3 of 5
35R53 - Residential	B	67	72	72	0	Y	3 of 5
35R54 - Church	E	52	44	49	5	N	2 of 5
35R55- Residential	B	67	72	74	2	Y	2 of 5
35R56 - Residential	B	67	73	77	4	Y	2 of 5
35R57 - Residential	B	67	74	76	2	Y	2 of 5
35R58 - Residential	B	67	72	76	4	Y	2 of 5
U.S. 67							
67R1 - Church	E	52	46	48	2	N	1 of 7
67R2 - Residential	B	67	67	64	-3	N	1 of 7
67R3 - Residential	B	67	66	65	-1	N	1 of 7

Receiver	NAC Category	NAC Level	Existing	Predicted	Change (+/-)	Noise Impact	Schematic Page Number
67R4 - Church	E	52	42	44	2	N	2 of 7
67R5 - Residential	B	67	69	71	2	Y	2 of 7
67R6 - Apartment	E	52	42	44	2	N	3 of 7, 4 of 7
67R7 - Apartment	E	52	43	43	0	N	5 of 7
67R8 - Motel	E	52	43	46	3	N	5 of 7
67R9 - Residential	B	67	72	75	3	Y	5 of 7
67R10 - Residential	B	67	72	74	2	Y	5 of 7
67R11 - Residential	B	67	68	71	3	Y	5 of 7
67R12 - Residential	B	67	72	74	2	Y	5 of 7
67R13 - Church	E	52	46	48	2	N	6 of 7
67R14 - Residential	B	67	72	76	4	Y	6 of 7
67R15 - Residential	B	67	72	73	1	Y	6 of 7
67R16 - Residential	B	67	72	75	3	Y	6 of 7
67R17 - Church	E	52	41	44	3	N	6 of 7
67R18 - Church (Play Area)	B	67	72	67	5	Y	6 of 7
67R19 - Residential	B	67	74	75	1	Y	6 of 7
67R20 - Residential	B	67	67	64	-3	N	6 of 7
67R21 - Apartment	E	52	46	48	2	N	7 of 7
67R22 - Residential	B	67	74	76	2	Y	4 of 5
67R23 - Residential	B	67	73	75	2	Y	7 of 7
67R24 - Residential	B	67	70	74	4	Y	7 of 7
67R25 - Residential	B	67	70	75	5	Y	7 of 7
67R26 - Apartment	E	52	45	48	3	N	7 of 7
67R27 - Residential	B	67	69	70	1	Y	7 of 7
67R28 - Residential**	B	67	65	61	-4	N	6 of 7
67R29 - Residential	B	67	64	64	0	N	6 of 7
67R30 - Residential	B	67	67	70	3	Y	6 of 7
67R31 - Church	E	52	46	48	2	N	6 of 7
67R32 - Thurgood Marshall Park	B	67	71	73	2	Y	6 of 7
67R33 - Apartment	E	52	47	49	2	N	6 of 7
67R34 - Boulder Park	B	67	69	68	-1	Y	5 of 7
67R35 - Residential	B	67	71	72	1	Y	5 of 7
67R36 - Apartment	E	52	43	47	4	N	3 of 7
67R37 - Residential	B	67	69	74	5	Y	2 of 7
67R38 - Residential	B	67	69	73	4	Y	2 of 7
67R39 - Residential	B	67	69	73	4	Y	2 of 7
67R40 - Church	E	52	43	46	3	N	2 of 7
67R41 - Church	E	52	42	46	4	N	1 of 7
67R42 - Residential	B	67	72	74	2	Y	1 of 7
67R43 - Residential	B	67	66	73	7	Y	1 of 7

Receiver	NAC Category	NAC Level	Existing	Predicted	Change (+/-)	Noise Impact	Schematic Page Number
67R44 - Residential	B	67	64	67	3	Y	1 of 7

*These residential receivers are located in the 10th Street Historic District.

**There is a 4 dBA reduction due to the removal of the loop ramps at the Loop 12 Interchange.

As indicated in **Table 4-9** the proposed project would result in a traffic noise impact and the following noise abatement measures were considered: traffic management, alteration of horizontal and/or vertical alignments, acquisition of undeveloped property to act as a buffer zone and the construction of noise walls.

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 five dBA at impacted receivers; and to be reasonable it should not exceed \$25,000 for each benefited receiver.

Traffic management: control devices could be used to reduce the speed of the traffic; however, the minor benefit of one dBA per five mph reduction in speed does not outweigh the associated increase in congestion and air pollution. Other measures such as time or use restrictions for certain vehicles are prohibited on state highways.

Alteration of horizontal and/or vertical alignments: any alteration of the existing alignment would displace existing businesses and residences, require additional ROW and not be cost effective/reasonable.

Buffer zone: there are a number of undeveloped parcels along the corridor. These parcels are primarily zoned commercial/light industrial with at least one parcel zoned multi-family. The acquisition of sufficient undeveloped land adjacent to the highway project to preclude future development that could be impacted by highway traffic noise would not be cost effective/reasonable.

Noise walls: this is the most commonly used noise abatement measure. Noise walls were evaluated for each of the impacted receiver locations with the following results:

IH 35E Receivers

35R1, 35R2, 35R31, 35R32, 35R35, 35R38-40 and 35R53: these nine receivers represent seven single residences and two child care facilities along the IH 35E corridor. A noise wall that would achieve the minimum feasible noise reduction of 5 dBA at these locations would exceed the reasonable, cost-effectiveness criterion of \$25,000 for an individual receiver.

35R41-43: these three receivers represent 7 residences along the IH 35E corridor. In this location, IH 35E is elevated over the DART Rail line. Zang Boulevard is parallel to the highway and is also on structure. The neighborhood and mobile home park are located in a slight topographical depression and does not benefit from a noise wall. A 5 dBA reduction for these properties could not be achieved.

35R26: this receiver represents two churches along the east side of IH 35E. A noise wall that would achieve the minimum feasible noise reduction of 5 dBA for a single receiver would exceed the reasonable, cost-effectiveness criterion of \$25,000.

35R33 and 35R34: these two receivers represent three residences along the east side of IH 35E. These receivers are located in Tenth Street Historic District. Many of the first row receivers are abandoned residences or have been converted to commercial use. Also, a noise wall that would achieve the minimum feasible noise reduction of 5 dBA in this area would exceed the reasonable, cost-effectiveness criterion of \$25,000 for an individual receiver.

35R55: this receiver represents four residences along the west side of IH 35E. A noise wall that would achieve the minimum feasible noise reduction of 5 dBA at these locations would deny access to the neighborhood. Allowing for gaps in the wall would make the noise walls acoustically ineffective. For these reasons a noise wall would not be feasible.

U.S. 67 Receivers

67R5: this receiver represents a single residence on the east side of U.S. 67. This residence is adjacent to a commercial strip. A barrier at this location would exceed the reasonable, cost-effectiveness criterion of \$25,000 for an individual receiver.

67R9: this receiver represents two residences on the east side of U.S. 67. This housing development is located to the east of the U.S. 67 ROW and moves away from the proposed project. A barrier at this location would exceed the reasonable, cost-effectiveness criterion of \$25,000 for an individual receiver.

67R27 and 67R35: these two receivers represent five single residences on the west side of U.S. 67. A noise wall that would achieve the minimum feasible noise reduction of 5 dBA at these locations would exceed the reasonable, cost-effectiveness criterion of \$25,000 for an individual receiver.

67R34: this receiver is located in Boulder Park. There are no outdoor activity areas within 500' of the proposed ROW. The proposed frontage road in this area would also be placed on approximately 20 ft of fill material, placing the park below the roadway which reduces the predicted noise levels. A noise wall is not feasible in this location. Sun Valley Park is also represented by this receiver. Sun Valley Park is an open space with no outdoor activity areas within 500' of the proposed ROW.

67R43 and 67R44: these two receivers represent three residences along the west side of the U.S. 67 corridor. These homes are west of the proposed project are either located behind or next to property that is zoned for commercial development. A noise wall was not be feasible and reasonable for these receivers.

However, noise barriers were determined to be both feasible and reasonable for the receivers listed in **Table 4-10** and, therefore, are proposed for incorporation into the proposed project. Any subsequent project design changes may require a reevaluation of this proposal. The final

decision to construct the proposed noise barriers will be made upon completion of the project design, utility evaluation and the public involvement process.

Table 4-10
Noise Wall Proposal (preliminary)

Barrier(s)	# of Benefited Receivers	Benefited Noise Receiver	Length (feet)	Height (feet)	Total Cost	Cost Per Benefited Receiver	Station Number (Beginning/ End)	Schematic Page #
1	4	35R3	232'	12'	\$50,112	\$12,528	412 / 415	2 of 5
2	9	35R5	611'	12'	\$131,976	\$14,664	478 / 484	3 of 5
3	28	35R7-9	1,913'	12-14'	\$431,496	\$15,411	525 / 544	3 of 5
4	25	35R13	840'	14'	\$211,680	\$8,467	570 / 578	3 of 5
5-7	63	35R14-21	5,430'	12'	\$1,172,880	\$18,617	581 / 635	4 of 5
8 & 9	23	35R22-24	2,038'	12'	\$440,208	\$19,140	643 / 664	4 of 5
10	6	35R25	572'	12'	\$123,552	\$20,592	670 / 676	5 of 5
11A	8	35R27-28	575'	12'	\$124,200	\$15,525	704 / 722	5 of 5
11B	Zoo	35R29	1,261'	12'	\$272,376	N/A*	722 / 733	5 of 5
12-13	34	35R44-48	3,321'	12'	\$717,336	\$21,098	640 / 673	4 of 5
14-16	35	35R56-58	3,454'	12'	\$746,064	\$21,316	380 / 412	2 of 5
17	14	67R10	1,038'	14'	\$261,576	\$18,684	570 / 580	5 of 7
18-20	21	67R11-12	1,720'	12'	\$371,520	\$17,692	609 / 625	5 of 7
21-23	30 (Including Church with Daycare)	67R14-18	2,364'	12-14'	\$523,500	\$17,450	632/657	6 of 7
24-25	31	67R19-20	2,031'	14'	\$511,812	\$16,510	657 / 675	6 of 7
26	46	67R22-25	2,854'	14'	\$719,208	\$15,635	741 / 765	7 of 7
27-28	13	67R30-31	1,471'	12'	\$317,736	\$24,441	647 / 657	6 of 7
29	16	67R32	845'	12'	\$182,520	\$11,408	634 / 643	6 of 7
30	11	67R37-39	560'	14'	\$141,120	\$12,829	385/391	2 of 7
31	8	67R42	486'	12'	\$104,976	\$13,122	275 / 281	1 of 7

* See Programmatic Section 4(f) Document in Appendix G of this document.

Local officials responsible for land use control programs should ensure, to the maximum extent possible, no new activities are planned or constructed along or within the following predicted noise impact contours.

UNDEVELOPED AREA	LAND USE (NAC Category)	IMPACT CONTOUR	DISTANCE from ROW
IH 35E			
IH 35E: IH20 to Loop 12	B	66 dBA	450 ft
	C	71 dBA	110 ft
IH 35E: Loop 12 to Illinois	B	66 dBA	475 ft
	C	71 dBA	140 ft
IH 35E: Illinois to Eighth St.	B	66 dBA	350 ft
	C	71 dBA	137 ft
U.S. 67			
U.S. 67: FM 1382 to IH 20	B	66 dBA	125 ft
	C	71 dBA	65 ft
U.S. 67: IH 20 to Loop 12	B	66 dBA	400 ft
	C	71 dBA	125 ft
U.S. 67: Loop 12 to IH 35E	B	66 dBA	450 ft
	C	71 dBA	115 ft

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 is expected to be exposed to construction noise for a long duration; therefore, any extended disruption of normal activities is not expected. Provisions will 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 will be made available to local officials to ensure, to the maximum extent possible, future developments are planned, designed and programmed in a manner that will avoid traffic noise impacts. On the date of approval of this document (Date of Public Knowledge), FHWA and TxDOT are no longer responsible for providing noise abatement for new development adjacent to the project.

P. Hazardous Waste/Substance

An initial site assessment including a visual survey of the project limits and surrounding area, research of existing and previous land use, and limited review of federal and state regulatory databases/lists was performed by qualified professionals. This assessment was conducted in accordance with the American Society for Testing and Materials (ASTM) Practice E1528-00 (Transaction Screen Process), with exceptions to accommodate the particular situations and needs of TxDOT's roadway projects.

A Federal and State environmental regulatory database review of the project study area, in accordance with TxDOT guidelines, was conducted to identify potential environmental concerns

that could adversely affect the project study area. These databases were obtained directly from government sources and are updated on approximately quarterly intervals. The regulatory database lists reviewed are listed in **Table 4-11**.

**Table 4-11
Regulatory Databases and Minimum Search Distances**

REGULATORY DATABASE	RADIUS SEARCH DISTANCE
ENVIRONMENTAL PROTECTION AGENCY (EPA)	
National Priorities List (NPL)	1.00 mile
Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), (Uncontrolled hazardous waste sites)	0.25 mile
Resource, Conservation and Recovery Information System (RCRIS)	0.25 mile
<ul style="list-style-type: none"> • Treatment, Storage and Disposal Facilities (TSDF) • Hazardous waste Generator Violations and Corrective Action Reports (CORRACT) 	0.25 mile
Toxic Release Inventory System (TRIS)	0.25 mile
Emergency Response Notifications and Texas Spills (ERNS & TXSPILL)	0.25 mile
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ)	
Texas State Superfund (TXSSF)	0.50 mile
Texas Leaking Underground Storage Tanks (TXLUST)	0.50 mile
Municipal Solid Waste & Landfills (Authorized & Unauthorized) (TXLF & LFUN)	1.00 mile
Texas Voluntary Cleanup Program (TXVCP)	0.50 mile
Texas Underground Storage Tanks (TXUST)	0.25 mile

The adjacent land uses consist of residential, commercial, light industrial and retail/sales, office, public parks, agricultural, and undeveloped areas. During the review of regulatory information and the site reconnaissance, multiple fueling stations were identified within the specified parameters along the project corridor.

The database search identified one CERCLIS site, one CERCLIS-NFRAP site, one CORRACTS site, one RCRIS-TSD site, two RCRIS-LQG sites, 110 RCRIS-SQG, 27 ERNS sites, 99 LUST sites, one CLI site, 218 UST sites, five TX VCP sites, 129 FINDS sites, 12 HMIRS sites, 10 TRIS sites, one TSCA sites, one SSTS site, two FTTS sites, 10 AST sites, 10 TX Spills sites, 172 IHW sites, one SWF/LF, 11 TxSPILLS, and five AIRS sites. A total of 830 listings were identified for the parameters specified within the project limits.

Sites considered likely to be contaminated and within the proposed ROW are categorized as "high risk". Examples of "high risk" sites include landfills and leaking underground storage tanks. Sites are categorized as "low risk" if available information indicates that some potential for contamination exists, but the site is not likely to pose a contamination problem to highway construction. Based on distance, topographic gradient, and database information, twenty-six sites are categorized as high risk and thirty three sites as low risk. A complete list of the risk sites is located in **Appendix D**.

Twelve high risk sites would have property impacted as part of new ROW acquired. These impacts would not result in the displacement of businesses. The new ROW would come from the perimeter of the properties. The proposed ROW would extend approximately ten feet from the existing ROW line. All of these sites except sites 138, 153, and 152 are "case closed." These three sites are currently in various stages of corrective action. During final design,

additional investigation would be required to confirm if contamination would be encountered during construction. If contamination is confirmed, then TxDOT would develop appropriate soils and/or groundwater management plans for activities within these areas. Descriptions of these sites are in **Table 4-12**.

**Table 4-12
High Risk Impacted Sites**

Map ID	Site Name/Address	Databases-Descriptions	Property Impacts	Schematic Sheet Number
Property Impacted/Down gradient from project.				
21	Exxon 63045 1010 E. 8 th St. Dallas	LUST (U001260505)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence issued, case closed.	Additional ROW would be needed along IH 35E and Eighth Street	5 of 5
59	Chevron 400 S. Marsalis Dallas	LUST (U001242280)-Groundwater impacted, non-public/non-domestic water supply well within 0.25 mile. Final concurrence issued, case closed.	Additional ROW would be needed along Marsalis Avenue	5 of 5
66	Chevron 511 S Zang Dallas	LUST (U001242310)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence issued, case closed.	Additional ROW would be needed along Beckley with a corner clip.	5 of 5
141	Sandra Clark Mart-Mobil 6005 S. R L Thornton Frwy	LUST (U003103388)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence issued, case closed.	Additional ROW would be needed along Laureland	2 of 5
184	Powell Chevrolet 8008 Marvin D. Love	LUST (S104957584)-No GW impact, no apparent threats or impacts to receptors. Final concurrence issued, case closed.	Additional ROW would be needed along Wheatland Road	3 of 7
Property Impacted/Up gradient from project.				
67	Oak Cliff Exxon 515 S Beckley	LUST (U001260507)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence issued, case closed.	Additional ROW would be needed along Beckley with a corner clip.	5 of 5
115	Exxon 3803 S Polk Street	LUST (U002262670)-No groundwater impact, no apparent threats or impacts to receptors. Final concurrence issued, case closed.	Additional ROW would be needed along Polk Street	7 of 7
Property Impacted/Equal gradient with project.				
110	Don Herring Inc 3312 Marvin D Love Fwy	LUST (U001239457)-Soil contamination only, requires full site assessment and RAP. Final concurrence issued, case closed.	Additional ROW would be needed along IH 35E	7 of 7
110	Christ for the Nations 3330 Marvin D Love Fwy	LUST (U001263581)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence issued, case closed.	Additional ROW would be needed along IH 35E	7 of 7
Property Impacted/Down gradient from project.				
138	Speedmax 5 5931 S R L Thornton Fwy	LUST (U001253848)-Groundwater impacted no apparent threats or impacts to receptors. Monitoring.	Additional ROW would be needed along Laureland and corner clip	2 of 5
153	Exxon 7100 S RL Thornton Frwy	LUST (1000653317)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence pending documentation of well plugging.	Additional ROW would be needed along IH 35E with a corner clip	2 of 5
Property Impacted/Up gradient from project.				

Map ID	Site Name/Address	Databases-Descriptions	Property Impacts	Schematic Sheet Number
152	Chevron 7107 R L Thornton Frwy	LUST (U001242184)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence pending documentation of well plugging.	Additional ROW would be needed along Camp Wisdom with a corner clip	2 of 5

Eleven high risk sites are outside of the proposed ROW. These sites are adjacent to the existing ROW and would not be impacted by construction. Site 107 is the only site that is presently in a corrective action stage. It is not anticipated that hazardous materials would be encountered from these sites during construction. See **Table 4-13**.

**Table 4-13
High Risk Adjacent Sites**

Map ID	Site Name/Address	Databases-Descriptions	Property Impacts	Schematic Sheet Number
Property Not Impacted/Down gradient from project.				
51	AAMCO Service Center 2 686 S. R.L. Thornton Fwy Dallas	LUST (U001272885)-Assessment incomplete, no apparent threats or impacts to receptors. Final concurrence issued, case closed.	None	5 of 5
142	Mobil 5909 S Hampton & Hwy 67 Dallas	LUST-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence issued, case closed.	None	5 of 7
148	Texaco 6210 Marvin D Love Frwy	LUST (U001249108)-Soil contamination, no remedial action required. Final concurrence issued, case closed.	None	5 of 7
173	Bledsoe Dodge 7100 Marvin D Love	LUST (U001251541)-Soil contamination only, requires full site assessment and RAP. Final concurrence issued, case closed.	None	5 of 7
173	Marvin FRB Oak Cliff 7100 Marvin D Love	LUST (U001251541)-Soil contamination only, requires full site assessment and RAP. Final concurrence issued, case closed.	None	5 of 7
248	Sunnys Food Mart 920 N. Hwy 67	LUST (U001249442)-Assessment incomplete, no apparent threats or impacts to receptors. Final concurrence issued, case closed.	None	1 of 7
Property Not Impacted/Up gradient from the project.				
72	Texaco 905 S Zang Blvd	LUST (U003039044)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence issued, case closed.	None	5 of 5
74	Zang Food Store 1005 S Zang Blvd	LUST (U001278004)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence issued, case closed.	None	5 of 5
107	Gulf Station 309 W Kiest Blvd	LUST (U001242174)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence issued, case closed. LUST (105050600)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence pending documentation of well plugging.	None	4 of 5
123	Chevron 102 W Ann Arbor	LUST (U001242176)-Groundwater impacted no apparent threats or impacts to receptors. Final concurrence issued, case closed.	None	3 of 5

Map ID	Site Name/Address	Databases-Descriptions	Property Impacts	Schematic Sheet Number
219	Tributary to Ten Mile Creek Hwy 67 (East side of Hwy 67 south of Danieldale)	LUST (S104876475)-FP On/In: Ground Surface/SW/Utility (not water supply line). Final concurrence issued, case closed.	None	3 of 7

There are two VCP sites located adjacent to the proposed project area. One site (Site No. 147) is located at 2550 W. Redbird and would not be impacted by the construction. Approximately 16.2 acres of soil were contaminated by chlorinated solvents. A certificate of completion has not been reported. The other site (Site No. 110) is located at 3312 Marvin D Love Freeway. This site is also listed in the LUST database. Approximately 1.65 acres were contaminated by benzene and ethylbenzene at this site affecting groundwater. The date the application was received at the VCP was 6/28/2000. A certificate of completion has not been reported. As stated earlier, additional investigation would be required during final design to confirm if contamination would be encountered during construction. If contamination is confirmed, then TxDOT would develop appropriate soils and/or groundwater management plans for activities within these areas.

Twenty two UST sites, 11 generators of hazardous materials, and 10 orphan sites are characterized as low risk. Any additional ROW from these sites would be along the property perimeters and/or at the corners of intersections. Complete details of these sites are located in **Appendix D**. It is not anticipated that these sites would pose a hazard to roadway construction.

The contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction staging area. The use of construction equipment within sensitive areas would be minimized or eliminated entirely. All construction materials used for this project would be removed as soon as the work schedules permit. Any unanticipated hazardous materials and/or petroleum contamination encountered during construction would be handled according to applicable federal and state regulations per TxDOT Standard Specifications.

Q. Items of Special Nature

Airway-Highway Clearance

The Dallas Executive Airport is located on the west side of U.S. 67 between Red Bird Lane and Hampton Road. Communication with the Dallas Executive Airport regarding the Southern Gateway Project was ongoing throughout the MIS process. The primary runway, Runway 13-31, is 6,451 ft x 150 ft and has a northwest-southeast orientation. Runway 13-31 is located approximately 500 ft from TxDOT ROW. According to the airport, this runway would remain in place however it may be restriped in the future when an extension is added to the other side. A 50:1 precision approach surface was used to determine the surface critical elevation. From the TxDOT ROW, the minimum clearance for interstate roads is 17 ft. The proposed vertical geometry for each profile in the area falls below this elevation. This is shown in Appendix D.

Construction Detour

Construction work on IH 35E would be phased in such a manner that would allow various lanes of the roadway to remain open to traffic during construction. Construction of a detour would not be required.

Mitigation and Monitoring Commitments

All relocation efforts would be consistent with the requirements of the Civil Rights Act of 1964, the Uniform Relocation and Real Property Acquisition Policies Act of 1970 as amended, and the Housing and Urban Development Act of 1974.

A Storm Water Pollution Prevention Program would be implemented by the Contractor to prevent, minimize, and control the spill of hazardous materials in staging areas. All materials removed and/or disposed of by the Contractor would be done in accordance with State and Federal laws and by approval of the Engineer.

Permanent erosion and water pollution controls would be implemented in all areas disturbed by the Contractor's equipment. These controls would consist of the placement of topsoil and landscaping would be limited to seeding or planting of the right-of-way according to TxDOT approved seeding specifications where possible.

If archeological or historic sites were discovered prior to or during construction, work would cease immediately. A TxDOT staff archeologist would then assess the site pursuant to the Texas Antiquities code and the site would be avoided or mitigated according to Section 106 of the National Historic Preservation Act.

It is anticipated that USACE Nationwide Permits 14 and 25 would satisfy the requirements of this project. A Pre-Construction Notification (PCN) to USACE is required. The waters are not navigable; therefore, neither a US Coast Guard Section 9 Permit nor a USACE Section 10 Permit would be required.

Mitigation has been proposed for impacts to .082 acre of ROW from the Dallas Zoo. The complete Programmatic Section 4(f) evaluation is listed in **Appendix G** and includes purchasing two properties adjacent to the Zoo. A used automobile lot (former gasoline station) and a hotel property located on the corner of Marsalis and IH 35E to be acquired would total 1.269 acres. The proposed mitigation (1.269 acres) minus the impacted area (0.082 acre) would result in a net gain of 1.187 acres of new Zoo property. Highway traffic noise mitigation has also been proposed for the Zoo as part of the traffic noise study that was conducted and discussed Section IV., Part O. of this EA. A 12 ft noise wall that is 1,261 ft in length has been proposed for the area of the Zoo that abuts the IH 35E ROW.

In accordance with the Memorandum of Agreement between TxDOT and the TPWD, TxDOT would compensate for the 1.02 acres of riparian woodland impacts and large oaks (approximately 24 inch dbh) with the planting of replacement trees. These plantings would occur at the Dallas Zoo, other city parks, and within the TxDOT ROW where space allows.

In addition to these commitments, the construction of a bicycle/pedestrian path to replace the overpass at Pentagon and U.S. 67 would provide additional bicycle access and improve continuity of the Five Mile Greenbelt system.

V. DETERMINATION OF ASSESSMENT

TxDOT recommends implementation of Alternative B: Build Alternative based on the information in this EA and in this project's Administrative Record. If constructed, Alternative B would provide the best solution for relieving traffic congestion and improving design deficiencies while enhancing the regional and national transportation system by increasing capacity, reducing traffic congestion, improving mobility, improving design deficiencies, and improving system linkages.

The engineering, social, economic, and environmental investigations conducted thus far on the proposed project indicate that it would result in no adverse impacts to the quality of the human or natural environment. A Finding of No Significant Impact is anticipated.