

From: "Ian Bryant" <ian@civilassociates.com>
To: "Robert Hall" <RHALL@dot.state.tx.us>
Date: 9/11/2006 2:29:32 PM
Subject: REVISED CE SH 121 from FM 2499 to Bus 121 (csj 0364-02-017,etc.)

Robert,

Attached is the revised SH 121 document addressing FHWA comments and responses to FHWA comments. Comments were minor; however, adding the CMS project table shifted the text in the 2nd half of the document approximately half of a page throughout. The document is ready for electronic re-submittal to ENV/FHWA. However, if hard copies are preferred, please let me know and I will request them.

Thanks,
Ian

-----Original Message-----

From: Robert Hall [mailto:RHALL@dot.state.tx.us]
Sent: Monday, September 11, 2006 10:26 AM
To: Naser Abusaad
Cc: Ian Bryant
Subject: Fwd: CE: SH 121 from FM 2499 to Bus 121 (csj 0364-02-017,etc.)

What's up with this?

Robert Hall, P.W.S.
Environmental Coordinator
Dallas District
4777 E. Highway 80
Mesquite, Texas 75150
phone-214-320-6157
fax-214-320-4470
email-rhall@dot.state.tx.us

Your TxTag(r) sticker is the easiest, fastest way to travel on Texas toll roads. Get yours here: www.TxTag.org

This electronic message transmission and any documents, files, graphics, or previous e-mail messages attached to it may contain information that may be legally confidential and/or privileged. The information is intended solely for the individual(s) or entity(s) named above and access by disclosure, copying, distribution, or other use of the contents of this message is prohibited and may be unlawful. If you have received this electronic transmission in error, please reply immediately to the sender, pointing out the error, and deleting the message. This message may also contain personal opinions of the author and should not be considered as an official TxDOT policy or opinion.

>>> Dan Perge 8/31/2006 11:26:34 AM >>>

Your TxTag(r) sticker is the easiest, fastest way to travel on Texas

USE (0364-02-017) - 1.4 Rev. CE to ENV 9-12-06

toll roads. Get yours here: www.TxTag.org

>>> Margaret Canty 8/31/2006 10:00:45 AM >>>
See attached, thanks mc

CC: "Naser Abusaad" <naser@civilassociates.com>, "Dan Perge" <DPERGE@dot.state.tx.us>, "Jim Robertson" <jrob@hicksenv.com>, "Ullman, Phil" <Phil.Ullman@hdrinc.com>, "Naser Abusaad - TxDOT" <NABUSAA@dot.state.tx.us>

RESPONSE TO FHWA COMMENTS_9-06-06_SH 121 from FM 2499 to Bus 121 (csj 0364-02-017 etc.).txt
Responses to FHWA comments (0364-02-017)

1. Specific CMS project commitments are not included (pp 22-23).

RESPONSE: Specific CMS project commitments have been added.

2. The following stmt. should be deleted: "The CMS analysis for added SOV capacity projects is on file and available for review at NCTCOG." p. 23. This statement has been deleted.

RESPONSE: This statement has been deleted.

CATEGORICAL EXCLUSION

State Highway 121

FROM FM 2499 IN TARRANT COUNTY
TO 0.23 MILE WEST OF BUSINESS 121
IN DALLAS COUNTY, TEXAS

CSJ # 0364-02-017, 0364-03-064, 0364-01-072 and 0364-02-021

CITIES OF COPPELL AND GRAPEVINE, DALLAS AND TARRANT COUNTIES

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

SEPTEMBER 2006

INTRODUCTION

The Federal Highway Administration (FHWA) and Texas Department of Transportation (TxDOT) propose to widen SH 121 in Dallas and Tarrant Counties in the cities of Coppell and Grapevine, beginning just north of FM 2499 and extending northeasterly to 0.23 mile west of Business 121, a distance of 1.94 miles (see **Figure 1** in **Appendix A**). The proposed action would improve this section of SH 121 to a ten-lane freeway plus six frontage road lanes and create grade separated interchanges at Grapevine Mills Road/Sandy Lake Road and Freeport Parkway (see **Figure 1A** in **Appendix A**). The project is located on the U.S.G.S. 7.5 Minute Quadrangle Map of Grapevine, Texas, as shown in **Figure 2** in **Appendix A**. An aerial photograph of the project area is shown in **Figure 3** in **Appendix A**.

PURPOSE AND NEED

The purpose of the proposed action is to improve mobility and increase accessibility within the rapidly developing SH 121 corridor. The proposed action is needed because the facility operates at Level of Service F during peak hours. According to TxDOT traffic volume on SH 121 in the vicinity of Grapevine Mills Drive was approximately 112,000 vehicles per day (vpd) in 2005. It is expected to reach 206,500 vpd by 2025, an 84 percent increase (TxDOT Transportation Planning and Programming Division, October 11, 2005).

EXISTING FACILITY

The section of SH 121 proposed for improvement is currently a four-lane divided arterial roadway (two main lanes in each direction) with two frontage road lanes in each direction. The existing roadway's main lanes and frontage roads are all 12 feet wide, and the main lanes have 4-foot inside shoulders and 10-foot outside shoulders, while the frontage lanes have 4-foot inside shoulders and 6-foot outside shoulders. The existing median is 76 feet wide. Intersections are at-grade with signalized main lane and stop sign control frontage roads. The posted speed limit is 55 miles per hour (mph) on the main lanes and 45 mph on the frontage roads. SH 121 currently operates at Level of Service F, which is characterized by heavy congested flow, traffic demand that exceeds roadway capacity, and forced or breakdown traffic flow. Two signalized intersections allow access to the arterial lanes from the frontage road lanes: one at Grapevine Mills Drive/Sandy Lake Road and the other at Freeport Parkway. Both intersections experience peak hour congestion.

ALTERNATIVES TO THE PROJECT

One alternative, the "no-build" alternative, was considered in addition to the preferred alternative discussed throughout this document. The no-build alternative would eliminate construction costs, but would not meet the objective of improving mobility and increasing

accessibility along this segment of SH 121. Aside from the preferred alternative, no other build alternatives were considered for this project.

PROPOSED FACILITY

The proposed action would improve this section of SH 121 from a four-lane divided arterial roadway to a ten-lane freeway (five main lanes in each direction) plus six frontage road lanes (three in each direction) and create grade separated interchanges at Grapevine Mills Road/Sandy Lake Road and Freeport Parkway. The main lanes would be 12 feet wide, with 10-foot inside and outside shoulders and a 48-foot median. The frontage roads would have curbs and gutters. The ramps would be designed for 50 mph and the frontage roads for 40 mph. Right-of-way (ROW) for the proposed improvements is variable, reaching a maximum width of approximately 730 feet in the vicinity of the proposed braided ramps north of Sandy Lake. Design speeds are 70 miles per hour (mph) for the mainlanes, 50 mph for the ramps and 40 mph for the frontage roads. Preliminary schematic design plans can be inspected at the TxDOT – Dallas Northwest Area Office located at 12000 Greenville Avenue, Dallas, Texas 75243.

COST ESTIMATE

The funding for the proposed action is listed under Category 2, with 80 percent coming from federal funds and 20 percent coming from state and local funds. The current cost estimate of the proposed improvements as of June 11, 2005 is approximately \$118,400,000 for construction and \$9,900,000 for ROW acquisition, for a total estimated cost of approximately \$128,300,000. The proposed project is included in the 2006-2008 Transportation Improvement Program.

ROW REQUIREMENTS AND UTILITY ADJUSTMENTS

The usual width of the existing SH 121 ROW is approximately 490 feet within the project limits. Approximately 45 acres of additional ROW are required to accommodate the proposed improvements. This additional amount represents an increase of about 36 percent over the existing ROW within the project limits. A total of 31 parcels would have some ROW taken. The proposed action would require the relocation of one residence, discussed further in the socioeconomic impacts section below. Utilities such as water lines, sewer lines, gas lines, telephone cables, electrical lines, and other subterranean and aerial utilities may require adjustment. Any aerial and/or underground utility adjustments would be completed at the expense of the utility company and would be conducted such that no substantial interruptions in service occur.

SURROUNDING TERRAIN AND LAND USE

The land in the project area is dominated by commercial development with a scattering of suburban development and patches of ranchland. General vegetation habitat types found in the area include Grassland/Oldfield, Riparian Woodland, and Upland Woodland. The terrain is flat except for the Denton Creek channel, with scattered stands of vegetation framing ongoing development. The proposed project would improve access to existing and future commercial development.

In addition to supporting local economic development along the SH 121 corridor, the proposed project would provide better connections with existing and planned arterial roadways. The proposed action is included as a ten-lane freeway in Mobility 2025: The Metropolitan Transportation Plan, Amended April 2005, which was approved by FHWA on June 16, 2005. The proposed action is also included in the 2006-2008 Transportation Improvement Program, approved by FHWA on October 31, 2005.

SOILS

Several different soil units underlie the SH 121 project area. Beginning in the southwest, they are Burleson clay zero to one percent slopes, Wilson clay loam zero to one percent slopes, Crockett fine sandy loam one to three percent slopes, Silawa fine sandy loam two to eight percent slopes (eroded), Axtell fine sandy loam one to three percent slopes, Bastsil fine sandy loam zero to three percent slopes, and Dutek loamy fine sand one to five percent slopes (NRCS 1980; 1981). Burleson clay and Bastsil fine sandy loam are designated as prime farmland soils (NRCS 2000). However, these areas are within the existing ROW and therefore already in use for transportation.

PRIME, UNIQUE AND SPECIAL FARMLAND IMPACTS

The proposed project is located within an urban area and therefore is exempt from the requirements of the Farmland Protection Policy Act (FPPA) and requires no coordination with the Natural Resources Conservation Service (NRCS).

REGIONAL AND COMMUNITY GROWTH

SH 121 serves local area traffic related to employment, retail and commercial activities, as well as regional through-traffic. Employment in the study area is concentrated at Dallas-Fort Worth (DFW) International Airport and its surrounding commercial and industrial complexes. Construction of the proposed improvements would help meet the growing mobility and access needs of the area. In addition to DFW, major nearby trip generators south of the project area include Grapevine Mills Mall and Bass Pro Shops Outdoor World.

Vista Ridge Mall and Raytheon lie to the north of the project area. Major employers within the project area include Verizon and DFW Trade Center.

The population in Dallas County in 2000 was 2,218,899 (U.S. Census Bureau, 2000 Census). According to the North Central Texas Council of Governments, the area surrounding the SH 121 project area is expected to see substantial growth between 2005 and 2025. Population is forecasted to increase by 19% and employment by 40%. (Source: NCTCOG, *2030 Demographic Forecast*, forecast districts 113001, 113002, 121041, 439025, and 439026; <http://www.nctcog.org/ris/forecast/> accessed 7/26/2005.)

SOCIO-ECONOMIC IMPACTS

Only one residence would require relocation; no businesses or agricultural operations would be displaced. No current parcels would lose parking, however, several are being platted by the City of Grapevine. Access to properties that are adjacent to the existing ROW would be modified near ramps and cross streets. The proposed improvements would contribute positively to the on-going development of this corridor by improving accessibility to abutting properties and to property along the cross streets. This in turn would strengthen the tax-base of the various taxing jurisdictions in the area.

PUBLIC FACILITIES AND SERVICES

The proposed project would improve mobility along SH 121 and provide improved access to and from the commercial businesses and the Fellowship Church (and associated preschool) located within the area. No other public facilities, such as libraries, schools or cemeteries, are located in the project area. Emergency vehicles would have a safer, more efficient transportation facility to use in the performance of their duties.

COMMUNITY COHESION

Within the limits of the proposed improvements, SH 121 currently exists as an at-grade major arterial roadway surrounded primarily by commercial land uses and vacant tracts of land. There are no distinct residential neighborhoods, ethnic groups, or other specific groups adjacent to SH 121 in this area. The proposed improvements would not affect, separate, or isolate any distinct neighborhoods, ethnic groups, or other specific groups. The proposed improvements would not require the displacement of any businesses.

One relocation of an isolated residence would occur as a result of the proposed action. The household that would be relocated would be eligible for assistance under the requirements of the Federal Uniform Relocation Act. Local municipalities and TxDOT may participate in ROW acquisition and relocation assistance. Inventories of replacement dwellings are to contain comparable, decent, safe, and sanitary dwellings. They must a) not be less desirable in regard to public utilities or public and commercial facilities; b) offer adequate

facilities to accommodate the displacees; and c) be located in a neighborhood that is not subject to unreasonably adverse environmental factors. The available housing is also to be within the financial means of the displacees, including low-income families, and open to all persons regardless of race, color, sex, religion, or national origin and consistent with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the Civil Rights Restoration Act of 1987.

The project area lies within five Census Tracts totaling 17,841 persons (U.S. Census 2000). Approximately four percent of the population within these Census Tracts speak English "not well" or "not at all." Of those in the area who speak English "not well" or "not at all," virtually all speak Spanish. No Limited English Proficiency populations would be discriminated against as a result of the proposed project. Reasonable steps have been taken to ensure that such persons have meaningful access to the programs, services, and information that TxDOT provides. Public Hearing notices were published in a locally circulated Spanish language newspaper, and English-Spanish interpreters were available at the Public Hearing to assist any LEP attendees. Therefore, the requirements of Executive Order 13166 on Limited English Proficiency appear to be satisfied.

ENVIRONMENTAL JUSTICE

Executive Order 12898 entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations" mandates that federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of the programs on minority and low-income populations. A minority population is defined as a group of people and/or a community experiencing common conditions of exposure or impact that consists of persons classified by the U.S. Bureau of the Census as Black/African-American, Asian or Pacific Islander, American Indian, Eskimo, other non-white persons, or persons of Hispanic origin. A low-income population is defined as one with median annual household income for a family of four equal to or below the national poverty threshold of \$20,000 (2006 HHS Poverty Guidelines).

An examination of U.S. Census 2000 data reveals a sparsely populated project area, not surprising given the nearly complete absence of residential property within the highway corridor. Only three of 23 Census Blocks adjacent to SH 121 within the project limits have any population at all. Block 1008 in Census Tract 141.18 has the greatest population (1,026 people) roughly three-quarters of which is White. Block 1003 of Census Tract 141.18 has 39 people, 34 of whom are White. Block 1001 of Census Tract 141.17 contains one person.

A radius search of census data available from NCTCOG showed the population within the project area to be predominantly White (**Table 1**). One-mile and three-mile project area

radii contained Hispanic populations of 9.9% and 8.3 percent, respectively; and Black/African American populations of 4.2 percent and 4.8 percent, respectively.

Table 1 Area Population by Race and Hispanic Origin		
Population	1-Mile Radius	3-Mile Radius
Hispanic	9.9%	8.3%
Non-Hispanic		
White alone	76.3%	77.7%
Black/African American alone	4.2%	4.8%
American Indian and Alaskan Native alone	0.4%	0.4%
Asian alone	7.6%	7.3%
Native Hawaiian and Other Pacific Islander alone	0.1%	0.0%
Some other race alone	0.2%	0.1%
Two or more races	1.3%	1.5%
Total Percentage	100%	100%
Total Population	4,541	51,405

Source: NCTCOG and Census 2000

According to U.S. Census 2000 data for the Block Groups adjacent to the highway, the percentage of persons living below poverty ranges from 0% to 11.6%. Again, the population in these Block Groups is concentrated in neighborhoods located well away from the highway.

Using NCTCOG's radius search, only small percentages of the population living within a one-mile and 3-mile radius of the project area were living below the national poverty level in 1999 (**Table 2**).

Table 2 Area Population Poverty Status		
Population	1-Mile Radius	3-Mile Radius
Total Population	4,541	51,405
Population with income below poverty level	36	1,660
Percent of Population with income below poverty level	0.8%	3.2%

Source: NCTCOG and Census 2000

The population in the project area is concentrated in suburban neighborhoods located away from the primarily commercial land use that surrounds SH 121. As discussed above, one residence would need to be relocated. The proposed project would not affect, separate or isolate any distinct neighborhoods, ethnic groups or other specific groups. No commercial displacements and only one residential relocation would be caused by this project. Minority and/or low-income populations in the area would not experience disproportionately high and adverse impacts as a result of the proposed improvements. The requirements of Executive Order 12898 appear to be satisfied.

SECTION 4(F) PROPERTIES / PARKLANDS

The proposed project would not require the use of nor substantially impair the purposes of any publicly owned land from a public park, recreational area, wildlife or waterfowl refuge lands, or historic sites of national, state or local significance. Thus, a Section 4(f) statement would not be required.

LAKES, RIVERS AND STREAMS

Denton Creek is not a navigable waterway; 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.

FLOODPLAIN IMPACTS

Floodplains are defined in Executive Order 11988B Floodplain Management as the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, that area subject to a one (1) percent or greater chance of flooding in any given year, i.e., those areas which would be inundated by a 100-year flood. Dallas and Tarrant Counties are participants in the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP), which issues maps delineating FEMA-designated floodplains. The FEMA FIRM map numbers for the project area are: Dallas County, 48121C0705F and Tarrant County, 48439C0215H.

Approximately 23 acres of floodplain are located within the existing and proposed ROW (see **Figure 4** in **Appendix A**). The hydraulic design for the drainage structures associated with the proposed project would be consistent with current TxDOT and FHWA standards and policies. The highway facility would permit the conveyance of the design-year flood, inundation of the roadway being acceptable without causing substantial damage to the highway, stream, or other property. The proposed project would not increase the base flood elevations to a level that would violate applicable floodplain regulations or ordinances.

The local governments along the Trinity River established a common watershed management program whereby all proposed developments within the Trinity River Corridor Development Regulatory Zone (essentially the 100-year floodplain) must apply for a Corridor Development Certificate (CDC). Any public or private development within the Regulatory Zone must obtain a CDC from the floodplain administrator of that jurisdiction prior to start of any development activity, unless specifically exempted. Development

activity includes filling, grading, paving, and dredging, among other activities. Because this project falls within Tarrant County, Dallas County, and the Cities of Grapevine and Coppell, all necessary coordination with these entities would be completed in order to be in full compliance with the Trinity River Corridor Development Process. The proposed improvements to SH 121 are within the Trinity River Corridor Development Certificate Regulatory Zone and would require a Trinity River CDC.¹

WATERS OF THE U.S.

Waters of the U.S. are protected under Section 404 of the Clean Water Act, as administered by the U.S. Army Corps of Engineers (USACE). The term "water of the U.S." has a broad meaning and encompasses both deepwater habitats (lakes, rivers, streams, bays, etc.) and special aquatic sites, including wetlands. Wetlands are transitional areas between terrestrial and aquatic systems that are defined by the USACE according to three criteria: 1) the presence of hydrophytic vegetation; 2) hydric soil characteristics; and 3) wetland hydrology. Determination of the presence or absence of waters of the U.S. within the project area was accomplished using National Wetlands Inventory (NWI) maps produced by the U.S. Fish and Wildlife Service, aerial photographs, and onsite verification during the field wetland determination on June 8, 2005.

¹ Nationwide Permit Regional Condition 4 for the Fort Worth District of the USACE mandates that all Section 404 NWP applicants working within the study area of the "Final Regional EIS, Trinity River and Tributaries" (TREIS, May 1986) meet the criteria and follow the guidelines specified in Section III of the Record of Decision (ROD) for the TREIS, including the hydraulic impact requirements. The ROD applies to all project actions requiring a permit under Section 10 or Section 404 within the Standard Project Flood (SPF) floodplain. In general, the criteria developed to reduce hydraulic impacts include the provision for no rise in the 100-year or SPF elevation from dredging and/or filling activities along the Mainstem, West Fork, and Elm Fork, and tributaries with drainage areas in excess of 100 square miles. The criteria require a maximum loss in storage capacity for the 100-year and SPF discharges of 0% and 5%, respectively, within the same area. For projects proposed on tributaries with drainage areas of 100 square miles or less, criteria allow up to 15% reduction of the valley storage within the 100-year floodplain and up to 20% reduction of the SPF floodplain valley storage. Further, requested projects on tributaries that would increase water surface elevations to a point of inducing additional flooding or damage to others are not to be permitted. The ROD also established guidelines for mitigation of environmental habitat losses caused by projects in floodplain areas covered by the TREIS. Since the proposed project would be authorized under the USACE NWP program, and parts of the ROW are within the study area of the TREIS, the proposed project would be subject to the provisions of NWP Regional condition 4 and final project design would comply with the terms of the ROD.

The criteria in the TREIS ROD apply only to navigable waters under Section 10 and jurisdictional waters and wetlands of the United States under Section 404. They do not apply to projects for which the USACE has no regulatory authority. The TREIS raised awareness that a large area of floodplain lands within the Upper Trinity River could be developed outside the jurisdiction of the USACE and that if developed following only FEMA requirements, substantial increases in flooding frequency and extent would continue to occur in adjacent and downstream areas. Subsequently, the Corridor Development Certificate (CDC) process was developed as a means to address those floodplain actions that were not within the jurisdictional areas administered by the USACE. The CDC process is a joint effort of the North Central Texas Council of Governments (NCTCOG), the USACE, and member NCTCOG cities with jurisdiction over the Trinity River floodplain. The program, as part of the Trinity River Common Vision, relies on member cities within the area to require developers to submit plans showing the impact of their proposed projects on floodplain hydraulic values. The proposed project would be in accordance with the conditions of the CDC and final design plans would be submitted to CDC constituent agencies before letting. Coordination would occur with the local floodplain administrator(s).

Prior to the initiation of field activities a number of informational resources were utilized to locate potential wetland areas. These resources included National Wetland Inventory (NWI) maps, soil information from local soil surveys in Dallas and Tarrant Counties, USGS topographic quadrangle maps, and recent aerial photography.

A jurisdictional wetland determination was conducted within the existing and proposed ROW to identify waters of the United States, which are regulated by the USACE pursuant to Section 404, subsection 330.5(a)(21) of the Clean Water Act. Procedures in the Field Guide for Wetland Delineation - 1987 Corps of Engineers Manual (Wetland Training Institute, 1991) were utilized within this project area.

One jurisdictional water of the U.S., Denton Creek, was identified within the project area. No wetlands were identified within the existing and proposed ROW (see **Figure 4** in **Appendix A**). Within the existing SH 121 ROW, gabion walls reinforce the steep banks of Denton Creek.

Acreage of Denton Creek within the ROW was calculated by multiplying the distance between Ordinary High Water Mark (OHWM) by the width of the existing and proposed ROW. Denton Creek is spanned by the existing SH 121 bridge and would remain spanned even with the proposed bridge widening. See **Table 3** for a summary of waters of the U.S. within the project area.

Table 3 Waters of the U.S. within the SH 121 Project Area							
Crossing Number	Type of Water	Description	Station	OHWM	Proposed Construction	Temporary Impacts	Permanent Impacts
1	Perennial stream	Denton Creek*	2043 + 00	50 feet	Add pier pilings to widen bridge; creek would be spanned	0.0	0.0
Total						0.0 acre	0.0 acre

*WOTUS Determination Point #1 (Figure 3 in Appendix A)

Denton Creek is currently spanned by existing bridges for the mainlanes and frontage roads. These bridges would be widened by placing two additional columns per bent. The additional columns would be placed outside the OHWM and therefore no impacts to Denton Creek are anticipated. No temporary impacts during construction are anticipated. Based on the design plans described in this document, Pre-Construction Notification (PCN) to the USACE would not be required. With no permanent or temporary impacts, no permit would be required.

WATER QUALITY

The entire project area is located within the Trinity River Basin, which drains a total area of 17,969 square miles of Texas and stretches from the Red River to the Gulf of Mexico. Water

quality information for this section of the Trinity River Basin was obtained from the Texas commission on Environmental Quality (TCEQ) (2004). The TCEQ divides river basins into segments, with water quality data given for each segment. All surface waters within the project area drain into Segment 0825 (Denton Creek) of the Trinity River Basin. This segment is classified and its designated uses include aquatic life use, contact recreation use, general use, fish consumption use, and public water supply use. This segment of the Trinity River basin is not classified as impaired by TCEQ (Section 303(d)).

Activities associated with highway construction have the potential to temporarily degrade water quality, especially near stream crossings. Such activities, if not properly controlled, could cause an increase in turbidity and sediments that are potentially damaging to delicate aquatic ecosystems. Potentially harmful construction activities include land clearing operations, roadway preparation, and other construction related operations. Surface impacts associated with the construction of this project are not anticipated to affect the public water supply.

The greatest potential for adverse impacts to surface water exists during the construction phase of the project due to the quantity of soil being disturbed. This project would disturb more than five acres of land; therefore, TxDOT and the contractor would be required to comply with the Texas Pollutant Discharge Elimination System (TPDES) General Permit (Stormwater Discharges from Construction Sites) guidelines for large construction projects (TXR 150000). This program seeks to control erosion and sedimentation from construction projects by means of the promulgation of a Stormwater Pollution Prevention Plan (SW3P), which must be written by the engineer or contractor and implemented just prior to beginning construction. The program consists of both management and structural Best Management Practices (BMPs) such as use of vegetated roadsides and flush shoulder aerobic ditches in order to keep pollutants from receiving waters. These controls are required to be put in place to slow the flow of water from the site and prevent the loosening and transport of soil particles from the site during construction. In order to comply with the regulations, an engineer or contractor is required to submit an SW3P to the TxDOT District Office so that a Notice of Intent (NOI) may be sent to the TCEQ prior to beginning construction. Following the completion of construction, a Notice of Termination (NOT) must be submitted by the District Office. The proposed project would comply with all applicable measures mandated by these regulations.

No permanent water quality impacts are expected as a result of the proposed project. The quality of waters in the project area shall be maintained in accordance with all applicable provisions of the Texas Surface Water Quality Standards, including the general narrative and numerical criteria. To minimize impacts to water quality during construction, the proposed project would utilize temporary erosion and sedimentation control practices outlined in TxDOT's guidance entitled Standard Specifications for the Construction of Highways, Streets, and Bridges. Where appropriate, these temporary erosion and

sedimentation control structures would be in place prior to the initiation of construction and would be maintained throughout the duration of construction. Clearing of vegetation will be limited and/or phased to maintain a natural water quality buffer and minimize the amount of erodible earth exposed at any one time. Upon completion of the earthwork operations, disturbed areas would be restored and re-seeded according to TxDOT's Vegetation Management Guidelines and in compliance with the intent of the FHWA Executive Memorandum on Beneficial Landscapes and the FHWA Executive Order on Invasive Species.

Because this project is within the Trinity River Corridor Development Regulatory Zone, coordination with the Dallas County and City of Coppell floodplain/CDC administrator will be made in order to apply for a Corridor Development Certificate.

Two wells were found in the project area. They are both just south of Denton Creek, one on each side of the highway. The first well is owned by the U.S. Geological Survey and is unused. It has a depth of 269 feet, and is located at latitude 325904, longitude 970057. The second well is owned by Eubanks Ready Mix, and is used for industrial purposes. It has a depth of 942 feet and is located at latitude 325909, longitude 970059.

THREATENED/ENDANGERED SPECIES AND WILDLIFE HABITAT

According to databases of sensitive species maintained by the U.S. Fish and Wildlife Service (USFWS) and the Texas Parks and Wildlife Department (TPWD), ten threatened or endangered species occur or have historically occurred in Dallas and Tarrant Counties. These species include eight birds and two reptiles. **Table 4** presents the current regulatory status of those species. The table includes species that are listed as endangered or threatened by the USFWS and/or TPWD. Each of these species is considered by those agencies as having potential to occur in Dallas and Tarrant Counties. Qualified personnel evaluated the project area in June 2005 and did not find any evidence of the listed threatened or endangered species or their habitat except for the Timber/Canebrake Rattlesnake. Suitable habitat for the Timber/Canebrake Rattlesnake, listed as Threatened by the State, occurs in the project area. However, this species would not be affected by the proposed project due to the limited amount of vegetation removal required and because the area would be re-vegetated following construction. Coordination letters between TxDOT and TPWD are included in **Appendix D, Agency Correspondence**.

Federal Listed Species

The project will have no effect on federally listed species.

State Listed Species

Four species - the Arctic Peregrine Falcon, Wood Stork, Texas horned lizard, and Timber/canebrake rattlesnake - are not currently on the federal list but are listed as

Threatened within the state and Dallas and Tarrant Counties by TPWD. The Timber/canebrake rattlesnake may occur within the project area. This species could utilize the area primarily in association with everyday activities, where various habitats are utilized for resting, and feeding.

A search of occurrence record information maintained by TPWD on May 17, 2005 indicates that there are no known reports of any federal or state listed endangered, threatened, or otherwise rare or sensitive species within the proposed ROW. A number of the listed bird species could occur within the project area as incidental migrants; however, no substantial effects are anticipated due to the lack of preferred habitat.

Potential habitat for the Timber/canebrake rattlesnake, listed as Threatened by the State, does occur in the project area. However, this type of habitat is common throughout north-central Texas and any loss of habitat as a result of the proposed project would not have a substantial effect on the species range-wide.

During the field visit nesting swallows were observed under the existing SH 121 bridge over Denton Creek (see photograph in **Appendix C**). Care would be taken during the construction phase of the project not to destroy any active swallow nests. The Migratory Bird Treaty Act (16 U.S.C. 703-712, as amended) was first implemented by the U.S. in 1918 to protect migratory birds, including eggs, nests, and feathers. If bird nests would be affected, they should be confirmed to be unoccupied before action is taken. Clearing vegetation and work at culverts within the project area should be avoided or minimized during the nesting season (generally March to August). In the event that migratory birds or their nests are encountered on-site during project construction, TxDOT would attempt to avoid effects to the maximum extent practicable.

Table 4 Threatened, Endangered, and Otherwise Rare Species of Potential Occurrence in Dallas and Tarrant Counties, Texas						
Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present	Species Effect	Pertinent Project Information
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	Grapevine Lake is located approximately 1.5 miles southwest of the project area and may contain habitat for this species. However, none is located in the project area.

Table 4 Threatened, Endangered, and Otherwise Rare Species of Potential Occurrence in Dallas and Tarrant Counties, Texas (continued)

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present	Species Effect	Pertinent Project Information
Bald Eagle <i>Haliaeetus leucocephalus</i>	LT-PDL	T	Nests and winters near rivers, lakes and along coasts; nests in tall trees or on cliffs near large bodies of water.	No	No	Grapevine Lake is located approximately 1.5 miles southwest of the project area and may contain habitat for this species. However, none is located in the project area.
Black-capped Vireo* <i>Vireo atricapillus</i>	LE	E	Oak-juniper woodlands with distinctive, patchy, two-layer aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to the ground for nesting cover; species composition less important than presence of adequate, broad-leaved shrubs, foliage to ground level, and required structure.	No	No	No potential habitat for this species occurs in the project area.
Golden-cheeked Warbler <i>Dendroica chrysoparia</i>	LE	E	Juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer.	No	No	No potential habitat for this species occurs in the project area.

Table 4 Threatened, Endangered, and Otherwise Rare Species of Potential Occurrence in Dallas and Tarrant Counties, Texas (continued)

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present	Species Effect	Pertinent Project Information
Interior Least Tern <i>Sterna antillarum athalassos</i>	LE	E	Nests along sand and gravel bars within braided streams and rivers; also known to nest in man-made structures.	No	No	The banks of Denton Creek are steep within the project area and do not include sand or gravel bars.
Piping Plover <i>Circus melodus</i>	LT	T	These shorebirds live on sandy beaches and lakeshores. Piping plovers migrate through the Great Lakes along the river systems through the Bahamas and West Indies. They are currently found along the Atlantic Coast from Canada to North Carolina and along the shorelines of Lakes Michigan and Superior. Gulf Coast beaches from Florida to Mexico, and Atlantic coast beaches from Florida to North Carolina provide winter homes for plovers. Winter habitat includes sandflats, sandy mudflats, mudflats, and beach areas	No	No	No potential habitat for this species occurs in the project area.

Table 4 Threatened, Endangered, and Otherwise Rare Species of Potential Occurrence in Dallas and Tarrant Counties, Texas (continued)

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present	Species Effect	Pertinent Project Information
Whooping Crane <i>Grus americana</i>	LE	E	Potential migrant; winters in and around Aransas National Wildlife Refuge and migrates to Canada for breeding.	No	No	This species is not expected to occur in the project area because wetland, pond, and cropland are not present.
Reptiles						
Wood Stork* <i>Mycteria americana</i>	NL	T	Forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds; breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.	No	No	No wetlands or marshes are located within the project area; and this species has not been recorded in Texas recently.
Timber/Canebrake Rattlesnake <i>Crotalus horridus</i>	NL	T	Swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland, limestone bluffs; sandy soil or black clay; prefers dense ground cover.	Yes	No	Woodlands are present within the project area, however dense ground cover is typically not present. Individuals of this species are mobile and can avoid construction disturbance areas.

Table 4 Threatened, Endangered, and Otherwise Rare Species of Potential Occurrence in Dallas and Tarrant Counties, Texas (continued)						
Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present	Species Effect	Pertinent Project Information
Texas Horned Lizard <i>Phrynosoma cornutum</i>	NL	T	Open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; sandy to rocky soil.	No	No	The majority of the project area is developed and/or maintained ROW and does not contain potential habitat. In addition, fire ants are prevalent in the area and they are known to destroy local native ant populations, which are a primary food source for this species.
LE, LT - Federally Listed Endangered/Threatened PT, C1 - Federally Proposed Threatened, or Candidate Species DL, PDL - Federally Delisted/Proposed Delisted E, T - State Endangered/Threatened NL - Species of Concern, but with no regulatory listing status w/ CH - with Critical Habitat Designated *Listed for Dallas County only ^Listed for Tarrant County only Data Sources: U.S. Fish and Wildlife Service (2005), Texas Parks and Wildlife Department (2003; 2005), and survey of project area.						

Wildlife Habitat/Vegetation

The project area occurs along the ecotonal boundary between the Cross Timbers and Prairies vegetational area to the west, and the Blackland Prairies vegetational area to the east, as described by Gould (1975). This particular region is listed in "The Vegetation Types of Texas" (McMahan et al., 1984) as being Other Native and/or Introduced Grasses.

Based on the dominant species, percent of woody species coverage, and stage of succession, three generalized vegetation/habitat cover types were identified in the local area during the field visit and mapped to quantify the acreage of each affected by the proposed highway improvements. General vegetation habitat types in the proposed project area include Grassland/Oldfield, Riparian Woodland, and Upland Woodland.

Grassland/Oldfield

Oldfield habitats, resulting from natural vegetative succession following the cessation of management on farmed or cleared tracts are found throughout the project area as well as along existing fence rows, and road ROW. Most of these are currently or have been used

for livestock grazing. Oldfields within the study area differ considerably from site to site, but are generally dominated by native grassland species and invasive brush/trees. Typical communities consist of a mixture of grasses, forbs, shrubs, vines and trees from surrounding habitats. Commonly encountered herbaceous species include Bermuda grass, silver bluestem, oldfield threeawn (*Aristida oligantha*), johnsongrass, giant ragweed, western ragweed, goldenrod (*Solidago spp.*), common sunflower (*Helianthus spp.*) and cactus. Typical woody invaders include mesquite (*Prosopis glandulosa*) and Ashe juniper (*Juniperus ashei*). Approximately 29 acres (64% of the proposed ROW) is Oldfield.

Riparian Woodland

Areas classified as Riparian Woodland are located in a narrow strip adjacent to Denton Creek and are dominated by American elm (*Ulmus americana*), hackberry (*Celtis laevigata*), pecan (*Carya illinoensis*), Chinaberry (*Melia azedarach*), and American sycamore (*Platanus occidentalis*) trees. Several species of grapes (*Vitis spp.*), greenbriar (*Smilax bona-nox*), poison ivy (*Toxicodendron radicans*), and wood oats (*Chasmanthium latifolium*) are also common in the understory. Canopy height is approximately 50 feet with a canopy cover of 65 percent. Diameter at breast height (dbh) ranges from 4 to 40 inches and averages 18 inches. Approximately one acre (three percent of the proposed ROW) is Riparian Woodland.

Upland Woodlands

Woodlands described here include woody vegetation with an overstory nine to 25 feet tall with varying densities (50 to 100 percent canopy cover). The dominant woody species within the mixed hardwood/juniper woodlands are hackberry and mesquite trees. These areas also include substantial amounts of gum bumelia (*Bumelia lanuginosa*), chinaberry (*Melia azedarach*), cedar elm (*Ulmus crassifolia*), and pecan. The understory within this community includes giant ragweed (*Ambrosia trifida*), yucca (*Yucca spp.*), prickly pear (*Opuntia spp.*), little bluestem (*Schizachyrium scoparium*), sideoats grama (*Bouteloua curtipendula*), wood oats, goldenrod, greenbrier, Virginia creeper (*Parthenocissus quinquefolia*), and poison ivy. Diameter at breast height (dbh) ranges from four to 20 inches and averages eight inches. Approximately 10 acres (22% of the proposed ROW) is Mixed Hardwood/Juniper Woodland.

The remaining five acres (11% of the proposed ROW) is composed of developed land uses. Mature trees and other woody vegetation may be present in association with residential and commercial properties.

Effects to vegetation within the project area would involve the removal of trees and other vegetation within the ROW and associated easements. Approximately 11 acres of wooded areas would be converted to highway ROW by this project. Native vegetation (i.e., upland woodlands and grasslands) provides erosion inhibiting ground cover as well as habitat for

many resident and migratory animal species. Woody vegetation within the project area includes upland woodlands and riparian areas. No native prairie occurs within the project area.

The proposed improvements would result in the conversion of approximately 45 acres to highway ROW, including 29 acres of Grassland/Oldfield, one acre of Riparian Woodland, and 10 acres of Mixed Hardwood/Juniper Woodlands. The improvements could also affect approximately eight acres of developed vegetation within the existing highway ROW. Upon completion of earthwork operations, disturbed areas would be re-seeded according to TxDOT's Vegetation Management Guidelines and in compliance with the intent of the FHWA Executive Memorandum on Beneficial Landscapes and the FHWA Executive Order on Invasive Species. This Categorical Exclusion would be coordinated with the TPWD, as part of the Memorandum of Understanding (MOU) between TxDOT and TPWD.

In accordance with Provision (4)(A) (ii) of the TxDOT-TPWD MOU, some habitats may be given consideration for non-regulatory mitigation during project planning (at the TxDOT's District's discretion). These habitats may 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 provide habitat for state listed species ;
- Bottomland lardwoods, native prairies, and riparian areas ; and
- Any other habitat feature considered to be locally important.

Denton Creek and its tributary are considered as "special habitat features," and the one acre riparian area that would be affected constitutes "unusual vegetation." Both special habitat features and unusual vegetation areas should be considered for compensatory mitigation under the criteria of the MOA. Current design standards for the roadway, maintenance, and safety do not allow the preservation of trees within the ROW. The proposed project area contains an abundance of vegetation of similar composition and structure to that which would be removed. Furthermore, the disturbance created at the edge of these riparian zones should produce seed-bearing forbs and other primary successional plants that benefit wildlife in this area. ROW for the proposed project was limited to that which was necessary for the roadway and the structure. The need for compensatory mitigation for affected vegetation in the project area will be determined following coordination between TxDOT and TPWD.

During project development, TxDOT would design, use and promote construction practices that minimize adverse effects on both regulated and unregulated wildlife habitats. Existing vegetation would be avoided and preserved wherever practicable. No stream channelization

would occur as a result of this project; moreover, the existing stream banks and associated vegetation would not be disturbed except in the immediate construction area.

INVASIVE SPECIES/BENEFICIAL LANDSCAPING

Permanent soil erosion control features would be constructed as soon as feasible during the early stages of construction through proper sodding and/or seeding techniques. Disturbed areas would be restored and stabilized as soon as the construction schedule permits and temporary sodding would be considered where large areas of disturbed ground would be left bare for a considerable length of time. In accordance with E.O. 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, seeding and replanting with TxDOT-approved seeding specifications that is in compliance with E.O. 13112 would be done where possible. Moreover, abutting turf grasses within the ROW are expected to re-establish throughout the project length. Soil disturbance would be minimized to ensure that invasive species would not establish in the ROW.

ARCHEOLOGICAL SITES

Background investigations at the Texas Archeological Research Laboratory (TARL) and at the Texas Historical Commission (THC) were conducted to determine the presence of recorded archeological sites, State Historical Markers, and properties listed on the National Register of Historic Places (NRHP) within the project area.

There are two recorded sites within the area of potential effect (APE) of the project. Site 41DL326 was originally recorded in 1983, then re-recorded by Bill Young, an archeological steward, in 1991. The site is an open campsite located along the south side of Denton Creek, just west of SH 121. As mapped, the site occupies the entire terrace from SH 121 to Denton Creek. The recorder recovered Calf Creek, Carrollton, Wells, and Gary dart points, and Scallorn arrow points from a backdirt pile associated with a borrow pit in 1991. Much of the site has been heavily impacted by highway construction, residential construction, creek stabilization, and a borrow pit. During excavation of a construction trench within the site, a pit with a cover stone was found at a depth of 56 centimeters below the ground surface. Despite these disturbances, the 1991 recorder believed portions of Site 41DL326 were still intact, and had the potential as a State Archeological Landmark.

The second site, Site 41DN335, is located north of Denton Creek, directly adjacent and west of SH 121. There are no records, either in the key card files, or site files, on this site.

Two surveys that intersect the project area have taken place. In 1992 a survey for the Rural Electric Association took place that traversed the APE south of Denton Creek. No sites were recorded in the current APE. In 1995 an arc-shaped survey took place for TxDOT. According to THC maps, this survey intersected SH 121 just north of the northern project terminus. No sites were recorded in the current APE as a result of this project.

An archeological survey is required to complete Section 106 coordination. The existing right-of-way on both sides of the highway at Denton Creek should be investigated through shovel tests and potentially backhoe trenches to determine whether there are any intact deposits associated with Site 41DL226, or any unrecorded archeological resources in the APE. Due to lack of right-of-entry, this survey will be deferred until after right-of-way acquisition has taken place (see correspondence between TxDOT and THC in **Appendix D, Agency Correspondence**). At that time, a TxDOT archeologist will evaluate whether the proposed undertaking will affect archeological historic properties or State Archeological Landmarks in the APE. Section 106 review and consultation will proceed in accordance with the Programmatic Agreement (PA) among TxDOT, the THC, FHWA, and the Advisory Council on Historic Preservation, as well as the Memorandum of Understanding (MOU) between THC and TxDOT. In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area will cease and TxDOT archeological staff will be contacted to initiate post-review discovery procedures under the provisions of the PA and MOU.

HISTORIC RESOURCES

This section summarizes the survey and evaluation of historic resources for the proposed State Highway 121 expansion between FM 2499 and 0.23 mile west of Business 121 within the cities of Grapevine and Coppell, Dallas and Tarrant Counties, Texas. The investigations were conducted by TxDOT personnel in compliance with the National Environmental Policy Act (NEPA) and Section 106. NEPA requires consideration of important historic, cultural, and natural aspects of our national heritage. Important aspects of our national heritage that may be present in the project corridor will be considered under Section 106 of the NHPA of 1966, as amended (36 CFR 800). This act requires federal agencies to take into account the effect that an undertaking would have on historic properties. Historic properties are those included or eligible for inclusion in the NRHP and may include buildings, structures, districts, objects, cemeteries, and archaeological sites. In accordance with the Advisory Council on Historic Preservation (ACHP) regulations pertaining to the protection of historic properties (36 CFR 800.4), federal agencies are required to locate and evaluate historic properties and assess the effects that the undertaking would have on such properties. These steps shall be completed under terms of the PA between FHWA, the State Historic Preservation Officer (SHPO), and TxDOT.

The investigation focused on the identification of historic resources (including buildings, structures, objects, and non archaeological sites and districts) listed or eligible for listing in the NRHP, and Official State Historical Markers (OSHM). Research included a review of previous studies in the project area, a database search for previously recorded properties, and a review of historical literature to establish relevant historic contexts. With a letting date of 2007, the 50-year guideline is 1957. The APE for historic resources, as determined

in consultation with the History Programs Division of THC, is 500 feet for expansion of existing roadway.

The land in the project area is dominated by commercial development, with a scattering of suburban development and patches of rangeland. The terrain is flat except for the Denton Creek channel, with scattered stands of vegetation framing on-going development. Although sparse evidence of the area's rural nature still exists, nothing cohesive remains to suggest a rural landscape.

A review of literature in the National Register, State Archeological Landmarks, Recorded Texas Historic Landmarks, Texas Historic Sites Atlas, and list of official state historical markers did not disclose designated or inventoried standing historic properties in the APE. A visual survey by TxDOT personnel also did not reveal any historic-age properties to be present in the APE. In accordance with the Programmatic Agreement between TxDOT, THC, FHWA, and the Advisory Council on Historic Preservation, this project was individually coordinated with THC due to new ROW acquisition and the type of construction activity. On September 20, 2005, the THC concurred that no historic properties would be affected (see correspondence between TxDOT and THC in **Appendix D, Agency Correspondence**).

AESTHETIC CONSIDERATIONS

Aesthetic values would be emphasized on this project. It has always been the policy of TxDOT to build visually pleasing travel ways, coupling beauty with their functional capability. The aesthetic effect of this project would be equal to or better than the existing roadway.

AIR QUALITY ASSESSMENT

The proposed North Central Texas project is in Dallas and Tarrant County, which are part of the U. S. Environmental Protection Agency designated eight-hour, nine county nonattainment 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.

Local concentrations of CO expected from the roadway project were modeled at the ROW for the baseline year 2008 and design year 2028, using the FHWA and TxDOT-preferred CALINE3 roadway air quality computer model and MOBILE6 emission factors provided by

TxDOT. Worst-case meteorological conditions and a roadway speed of 70 miles per hour were used.

Based on the modeling results, local concentrations of CO are not expected to exceed national standards at any time. The worst-case one-hour CO concentration is not expected to exceed 8.1 parts per million (ppm) beyond the ROW in 2008 and 7.6 ppm in 2028. For the eight-hour CO concentration the worst-case is predicted to be 3.9 ppm in 2008 and 3.7 ppm in 2028. These values include an average of TxDOT’s recommended background concentrations for Dallas and Fort Worth of 2.8 ppm of CO for the one-hour average and 1.8 ppm for the eight-hour average. **Table 5** summarizes the results of the analysis:

Table 5 Predicted Carbon Monoxide Levels						
Year	One-Hour Standard			Eight-Hour Standard		
	Concentration (ppm)	NAAQS (ppm)	Percent of NAAQS	Concentration (ppm)	NAAQS (ppm)	Percent of NAAQS
2008	8.1	35	23%	3.9	9	43%
2028	7.6	35	22%	3.7	9	41%

(The calculated CO values shown on this table include an average of the TxDOT recommended background levels for Dallas and Fort Worth. The years 2008 and 2028 represent the “estimated time of completion” (ETC) and ETC+20 years.)

Throughout the entire length of the proposed project, the worst-case CO concentration plus the background level is less than 50% of the 1-hour NAAQS. Therefore, the proposed project’s air quality CO impact is considered to be insignificant for the 1-hour standard. The 8-hour CO concentration of 3.9 ppm (43% of the NAAQS) given in Table 3-8 is the absolute peak for the entire proposed project at the ROW with peak hourly traffic volume under worst-case meteorological conditions. This CO level can only be reached when the winds blow directly along (parallel to) the road and accumulates the CO emissions downwind. CO concentrations diminish quickly as the distance from the roadway increases, and drop to less substantial levels for future years when cars emit cleaner exhaust. Therefore, CO concentrations will not exceed the 8-hour NAAQS.

The proposed action includes the North Central Texas Council of Governments (NCTCOG) adopted Congestion Management System (CMS), a systematic process for managing congestion. It provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs. This project was developed from NCTCOG’s operational CMS, which meets all requirements of CFR 500.109.

Operational improvements and travel demand reduction strategies are commitments made by the region at two levels: program level and project level implementation. Program level commitments are inventoried in the regional CMS; they are included in the financially constrained Metropolitan Transportation Plan (MTP), and future resources are reserved for their implementation. The CMS element of the plan carries an inventory of all project commitments (including those resulting from major investment studies) detailing type of strategy, implementing responsibilities, schedules, and expected costs. At the project programming stage, travel demand reduction strategies and commitments will be added to the regional Transportation Improvement Program (TIP) or included in the construction plans. The regional TIP provides for programming of these projects at the appropriate time with respect to single-occupant vehicle (SOV) facility implementation and project specific elements. Projects included in the regional CMS will be managed under the Congestion Mitigation and Air Quality (CMAQ) program. In an effort to reduce congestion and the need for SOV lanes in the region, TxDOT and the NCTCOG will continue to promote appropriate congestion reduction strategies through the CMAQ program, the CMS, and the MTP. According to the NCTCOG, the congestion reduction strategies considered for this project will help alleviate congestion in the study area, but will not eliminate it. Therefore, the proposed improvements are justified. Specific CMS project commitments in the vicinity of the proposed project are listed in **Table 6**.

Table 6 Specific CMS Project Commitments							
Project Code	Street / Name	City	County	Implementing Agency	Project Type	Year Of Implementation	Total Project Cost
11178.0000	Traffic Signal Radio Communication (SH 121 SB Frontage Road at Grapevine Mills Boulevard and SH 121 NB Frontage Road at Sandy Lake Road)	Grapevine and Coppel	Tarrant	Grapevine	Traffic Signal Improvement	2002	\$762,600
0364-02-017	SH 121 From Tarrant County Line To Denton C/L Near Denton Creek	Grapevine	Denton	TxDOT-Dallas	Addition Of Lanes	2007	\$70,100,000
11239.0000	SH 121 From Denton Creek To Dallas North Tollway	Lewisville /Hebron /Various	Denton /Various	TxDOT-Dallas	Addition Of Lanes	2004	\$150,402,000

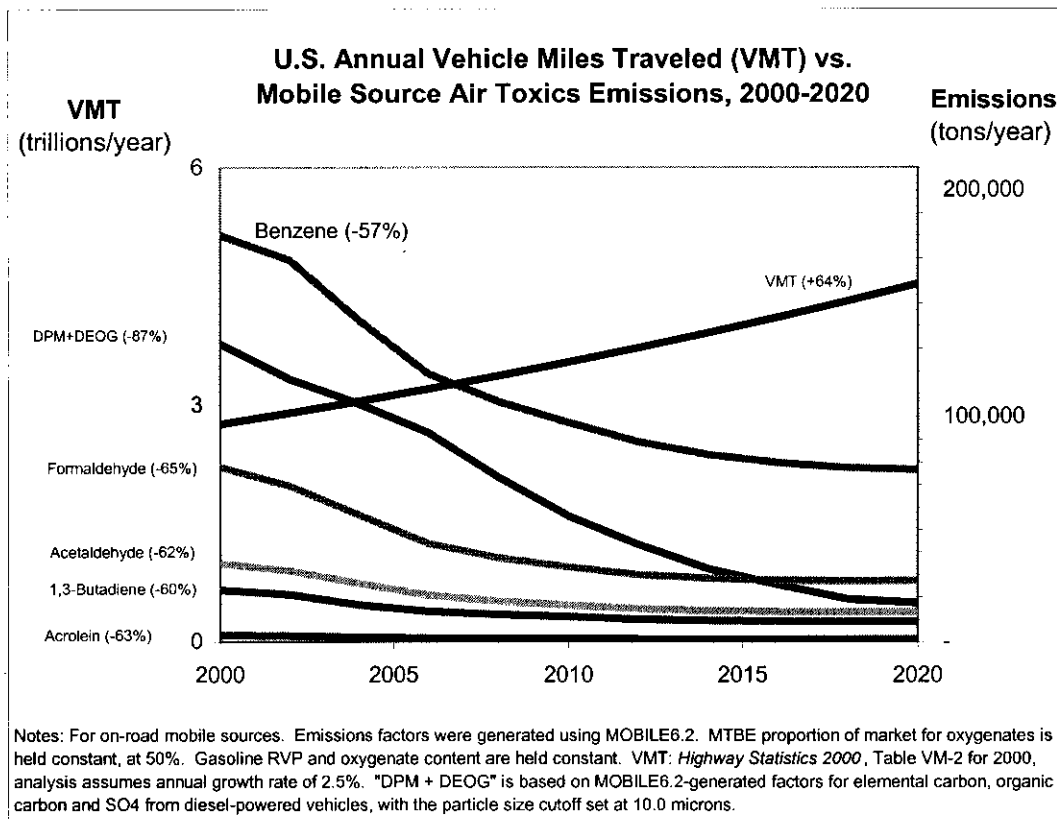
Source: North Central Texas Council of Governments

Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are 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 (CAA) 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 would reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and would 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 would address these issues and could make adjustments to the full 21 and the primary six MSATs.

Sensitive Receptor Assessment: An assessment of potentially sensitive receptors within 100 meters and 500 meters was conducted for the proposed project. These distances are based on TxDOT Air Quality guidance which states that dispersion studies have shown that roadway air toxics start to drop off at about 100 meters. By 500 meters, most studies have found it very difficult to distinguish the roadway from background toxic concentrations in any given area. Sensitive receptors include those facilities most likely to contain large concentrations of the more sensitive population (hospitals, schools, licensed day cares, and elder care facilities). The Fellowship Church preschool is approximately 300 meters from the SH 121 right-of-way.

Unavailable Information for Project Specific MSAT Impact Analysis: This re-evaluation includes a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable prediction of the project-specific health impacts of the emission changes associated with the alternatives in this re-evaluation. Because of 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 (PM), 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 MOBILE 6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE 6.2 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 would 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 MSATs: 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 problems². 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.

² 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.

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."

In this document, FHWA has provided a qualitative analysis of MSAT emissions relative to the proposed SH 121 transportation improvements. FHWA acknowledges that the proposed improvements 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.

NOISE IMPACTS

This analysis was accomplished in accordance with TxDOT's (FHWA approved) *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 would occur (**Table 7**):

Table 7 FHWA Noise Abatement Criteria (NAC)		
Activity Category	dBA L_{eq}	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) where frequent human activity occurs. However, interior areas (Category E) are used if these 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 Model (TNM) 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 receiver locations (**Table 8** and **Appendix A, Figure 4**) that represent the land use activity areas adjacent to the proposed project that might be impacted by traffic noise and potentially benefit from feasible and reasonable noise abatement.

Table 8 Traffic Noise Levels, L_{eq} (dBA)							
Rec. No.	Receiver Description	NAC Category	NAC Level	Existing 2005	Predicted 2025	Change (+/-)	Noise Impact
R1	Preschool	E	52	43	49	+6	No
R2	Residence	B	67	63	68	+5	Yes
R3	Residence	B	67	61	67	+6	Yes
R4	Residence	B	67	60	65	+5	No
R5	Hike & Bike Trail	B	67	54	60	+6	No

As indicated in **Table 8**, 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 barriers.

Before any abatement measure can be proposed for incorporation into the project, it must be both feasible and reasonable. In order to be "feasible," the abatement measure must be able to reduce the noise level at an impacted receiver by at least five dBA; and to be "reasonable," it must not exceed the cost-effectiveness criterion of \$25,000 for each receiver that would benefit by a reduction of at least five dBA.

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 right of way and not be cost effective/reasonable.

Buffer zone: the acquisition of undeveloped property to act as a buffer zone is designed to avoid rather than abate traffic noise impacts and, therefore, is not feasible.

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

R2, R3: these receivers are separate, individual residences. Noise barriers that would achieve the minimum feasible reduction of 5 dBA at each of these receivers would exceed the reasonable, cost-effectiveness criterion of \$25,000.

None of the above noise abatement measures would be both feasible and reasonable; therefore, no abatement measures are proposed for this project.

Land use activity areas in the vicinity of the proposed SH 121 project consists primarily of a mixture of commercial properties and undeveloped land (NAC Categories C and D). Adjacent residential development is limited to a few properties located north of Freeport Road. Except for a commercial business currently under development north of Sandy Lake Road and east of SH 121, no new development is currently planned, designed, or programmed in any remaining undeveloped areas. There is no NAC for undeveloped land; however, to avoid noise impacts that may result from future development of properties adjacent to the proposed project, local officials responsible for land use control programs should ensure, to the maximum extent possible, that no new activities are planned or constructed along or within the following predicted (2025) noise impact contours.

Table 9 Year 2025 Predicted Noise Impact Contours			
Undeveloped Area	Land Use	Impact Contour	Distance From Row
SH 121 North of Freeport	Residential	66 dBA	210 feet
SH 121 South of Freeport	Residential	66 dBA	280 feet
Grapevine Mills Rd	Residential	66 dBA	75 feet

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 available to local officials. 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.

HAZARDOUS WASTES/SUBSTANCES

Pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA), an on-line search of the database maintained by TCEQ did not yield any National Priorities List (NPL) or State Superfund sites in the project area, and no hazardous waste sites adjacent to SH 121 were observed through a visual survey. The database search did yield two reports regarding petroleum storage tanks (PST) (see **Table 10**). No ROW from these locations is required for the proposed improvements. In addition, a search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements by ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances were per ASTM standard. The EDR search yielded two Small Quantity Generators (SQG), four industrial hazardous waste generators in the project area, as well as five underground storage tank (UST) locations within the project area. Further, the Coppell wastewater treatment plant (WWTP) was identified.

According to the EDR search, one of the Coppell Plant's underground storage tanks was removed from the ground in 1994, and the other is still in use. The EDR search found no NPL, proposed NPL, Treatment, Storage, and Disposal Facilities (TSDF), or RCRA Large Quantity Generators. EDR's SQG search is dated May 20, 2005, while the UST search is from April 25, 2005 and the FINDS search is up-to-date as of July 11, 2005. No hazardous material impacts are anticipated to result from construction of the proposed improvements.

Table 10 Potential Hazardous Material Sites				
Database	Facility ID	NAME	Address	Status
PST Registration	36200	Coppell Plant	601 N. Highway 121 Coppell, Tx 75019	Two Underground Storage Tanks registered.
Leaking PST	36200	Beazer West, Inc.	350 S. Highway 121 Coppell, Tx 75019	Final Concurrence Issued, Case Closed
UST	0070962	Magic Mike's C Stores 5	3500 Grapevine Mills Pkwy, Grapevine, Tx 76051	Two Underground Storage Tanks, composite, in use, containing gasoline.
UST	0068445	Redi-Mix Concrete	¼ mile NE of Ace Ln, Lewisville, Tx 75067	Underground Storage Tanks, steel, containing diesel, removed from ground.
UST	0054630	Redi-Mix Inc.	SH 121 and Ace Ln, Coppell, TX 75019	Underground Storage Tank, steel, removed from ground.
UST	0074752	Magic Mike's 6	3501 Grapevine Mills Pkwy Grapevine, Tx 76051	Three Underground Storage Tanks containing gasoline in use.
Ind. Haz. Waste	84686	Exhibit Group Giltspur	4051 N. Highway 121, Ste 100 Grapevine, Tx 76051	Manufacturing of furniture and fixtures, waste generator.
Ind. Haz. Waste/SQG	TXD9880 56073	GE Computer Service	2200 Highway 121 Grapevine, Tx 76051	Small Quantity Generator of hazardous waste, no violations found, no TSDF activities reported.

Table 10 Potential Hazardous Material Sites (continued)				
Ind. Haz. Waste	TXRNER 324	Actis Manufacturing	4051 Freeport Pkwy Bldg H, Grapevine, Tx 76051	Active Stormwater permit.
Ind. Haz. Waste	TXR0000 55905	Kiddie Kandids	3000 Grapevine Mills Pkwy, Grapevine, Tx 76051	Active industrial hazardous waste generator and solid waste registration.
RCRA-SQG	TXR0000 42275	Fresenius Medical Care	1110 Northpoint Drive Grapevine, TX 76051	Small Quantity Generator of hazardous waste, no violations found, no TSDf activities reported.
FINDS	1100097 83519	Pioneer Concrete of Texas, Inc.	601 N. Highway 121 Coppell, TX 75019	Permit Compliance System.
FINDS	1100176 93691	Coppell WWTP	601 N. Highway 121 Coppell, TX 75019	Permit Compliance System.

Sources: TCEQ, <http://www.tceq.state.tx.us/>, accessed 6/18/2005; EDR, Inc., report completed 8/12/2005.

If contaminated soil and/or groundwater are encountered before or during construction, then TxDOT would develop appropriate soils and/or groundwater management plans for activities within these areas. Special provisions or contingency language would be included in the project's plans, specifications and estimates (PS&E) to handle hazardous materials and/or petroleum contamination according to applicable Federal and State regulations.

The TxDOT Dallas District has procedures intended to minimize cost and construction delays when petroleum contaminated soils are encountered during roadway construction. The Dallas District has a contractor to remove underground tanks and a contract to excavate and haul petroleum contaminated soils. These contracts are not intended to replace any mitigation that can take place during ROW acquisition, but do reduce the cost if petroleum contamination is encountered during construction. This procedure has reduced the degree of impact that underground storage tanks could have on construction activities. If this or any other type of encounter with hazardous substances does occur, it would be handled according to all applicable State, Federal, and local regulations.

INDIRECT AND CUMULATIVE EFFECTS

The terms direct, indirect, secondary and cumulative effects or impacts are often used in environmental analyses. Direct effects are defined as those effects caused by the proposed action and occur at the same time and place. Indirect effects are "...effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems." (40 CFR 1508.8). The regulations further define cumulative effects as "...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result

from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7).

Planned and future development could impact several resource categories within the project area over the life of the proposed transportation improvements. The SH 121 corridor is expected to see continued urbanization. The cumulative impacts of continuing development within the corridor will be both beneficial and adverse. Beneficial effects include new economic opportunities, housing alternatives, employment, services, and recreational resources. As development occurs, the need for additional infrastructure and services (transportation, utilities, fire, police, emergency medical services, etc.) will increase. Potential adverse cumulative effects include loss of wildlife habitat, water quality impacts, and the conversion of agricultural land associated with continued urbanization within the corridor.

The proposed mobility and access improvements are part of regional plans to improve the transportation system in northern Tarrant and Dallas Counties (Mobility 2025: The Metropolitan Transportation Plan - Amended April 2005 and the 2006-2008 Statewide Transportation Improvement Program/Transportation Improvement Program). These regional plans provide for improvements to SH 121 to the east and west of the proposed action, as well as other area roadways such as SH 114 to the west. The transportation projects collectively meet the metropolitan area's near-term and long-term mobility and air quality objectives.

CONSTRUCTION IMPACTS

The preliminary temporary impacts to soils related to the construction of the proposed SH 121 improvements include the potential for increased soil erosion and particulate dust production. In order to decrease the likelihood of soil erosion, several preventative measures would be taken. Erosion control measures prescribed by the Texas Commission on Environmental Quality (TCEQ) would be employed in order to decrease the erosion potential. All borrow material and sub-base sources would be the responsibility of the roadway construction contractor and would be acquired outside of the SH 121 ROW.

Construction may temporarily degrade air quality through dust and exhaust gases associated with construction equipment. Measures to control fugitive dust would be considered and incorporated into final design and construction specifications.

No detours would be required during construction; however, the number of travel lanes would be reduced and appropriate signing, signals, and flagmen would be provided as required. Travel delays would occur during construction; one or more travel lanes in each direction along the existing facility would be maintained for through traffic during construction. Access to the Fellowship Church and other adjacent properties would be

maintained during construction. No businesses would be affected by the proposed project, nor would any farm operations be affected. The adjustment and relocation of any utilities would be handled so that no substantial interruptions of service would take place while adjustments are being made.

ITEMS OF SPECIAL NATURE

D/FW International Airport is less than 20,000 feet from the project area. A Federal Aviation Administration (FAA) Notice of Proposed Construction or Alteration form (Form AD-7460-1) will be completed and submitted by TxDOT to the FAA for their approval prior to construction of the proposed improvements. There are no other items of special nature or interest such as railroads, special permits or agreements involved with this project. The project would not affect land or water uses within an area covered by a State Coastal Zone Management Program, nor would it impact coastal barrier resources. Coordination with the U.S. Coast Guard would not be required. The project would not impact any present, proposed, or potential unit of the National Wild and Scenic Rivers System.

CONCLUSION

The engineering, social, economic, and environmental studies conducted thus far, indicate that no significant environmental effects would occur; therefore, the proposed project qualifies as a categorical exclusion. In addition, the proposed action has no significant environmental impacts as described in 23 CFR771.117 (a) and does not involve any unusual circumstances as described in 23 CFR771.117 (b).