

# **ENVIRONMENTAL ASSESSMENT**

**SH 121**

**FROM 0.23 MILE WEST OF BUSINESS SH 121 TO EAST OF  
MACARTHUR BOULEVARD**

**CITIES OF LEWISVILLE AND COPPELL  
DENTON AND DALLAS COUNTIES, TEXAS**

**CSJs: 3547-01-001 & 005  
3547-02-001, 003 & 004  
3547-03-002 & 003**

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**TABLE OF CONTENTS**

INTRODUCTION .....	1
CHAPTER 1: PURPOSE AND NEED FOR THE PROJECT .....	2
A. Objectives of the Project.....	5
B. Focus of this Environmental Analysis .....	5
B.1 Planning Process .....	6
B.2 Related Studies and Relevant Documents .....	7
B.3 Issues Studied in Detail.....	9
B.4 Issues Eliminated from Further Study .....	9
C. Applicable Regulatory Requirements and Required Coordination .....	16
CHAPTER 2: DESCRIPTION OF THE ALTERNATIVES.....	17
A. Process Used to Develop the Project Alternatives.....	17
B. Requirements for and Benefits of Alternatives.....	17
C. Detailed Description of Project Alternatives .....	18
CHAPTER 3: POTENTIAL AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES OF THE ISSUES STUDIED IN DETAIL ...	19
A. Noise .....	19
B. Air Quality .....	23
C. Socio-Economic Impacts .....	28
D. Visual and Lighting.....	36
E. Summary Comparison of Potential Effects.....	36
CHAPTER 4: RECOMMENDATION OF THE PREFERRED ALTERNATIVE .....	37
A. Identification and Rationale for the Preferred Alternative.....	37
B. Mitigation and Monitoring Commitments .....	38
C. Recommendation for Alternative Selection and a FONSI.....	38

## LIST OF TABLES

Table 1: Construction Update .....	2
Table 2: SH 121 Environmental History .....	7
Table 3: Traffic Noise Levels (dBA Leq) .....	21
Table 4: Noise Wall Proposal (preliminary) .....	22
Table 5: Carbon Monoxide Concentrations .....	26
Table 6: Operational Improvements in the Travel Corridor .....	27
Table 7: Age Composition of the Population .....	29
Table 8: Percentage LEP Population: 1999 .....	31
Table 9: Median Household Income and Poverty Status: 1999 .....	33
Table 10: Racial and Ethnic Composition of the Population .....	34
Table 11: Summary and Comparison of Effects of Alternatives on Relevant Issues .....	36

## LIST OF FIGURES/EXHIBITS

	<b>Appendix</b>
Figure 1A: Project Location Map .....	A
Figure 1B: SH 121 Environmental History .....	A
Figure 2: USGS Quadrangle and FEMA Floodplain Map .....	A
Figure 3: 2000 Census Tracts .....	A
State FEIS Approval (1993) .....	B
NCTCOG Resolution Approving the <i>Texas Metropolitan Mobility Plan</i> .....	B
SH 121 Memorandum of Understanding .....	B
2025 Traffic Volumes .....	C
Conceptual Toll Plan .....	C

## INTRODUCTION

This document is an environmental assessment (EA) prepared for the purpose of tolling the mainlanes currently under construction of proposed State Highway (SH) 121 in Denton and Dallas Counties, Texas. The limits of this EA extend from 0.23 mile west of Business SH 121 to east of MacArthur Boulevard, through the cities of Lewisville and Coppell, a distance of approximately two miles (**Appendix A: Figure 1A**).

The proposed project is a portion of a previously documented non-toll facility project that was approved as a State Final Environmental Impact Statement (FEIS). The limits of the State FEIS extended from 0.4 mile west of Denton Creek to 0.05 mile east of FM 423, a distance of approximately ten miles (CSJs: 0364-03-065 & 067) (**Appendix A: Figure 1A**). The State FEIS was approved by Texas Department of Transportation (TxDOT) on August 16, 1990 and the State Record of Decision (ROD) was issued on April 28, 1993 (**Appendix B**). The State FEIS and ROD are available for inspection at the Dallas District located at 4777 E. Highway 80, Mesquite, Texas 75150.

Due to funding constraints, the State FEIS was divided into separate projects in the early 1990s. The proposed project (from 0.23 mile west of Business SH 121 to East of MacArthur Boulevard) is under construction utilizing State funds. **Chapter 1: Section B.2** discusses the remaining SH 121 corridor projects in detail.

In this document, the proposed project is being evaluated as an EA for Federal Highway Administration (FHWA) approval in light of the proposed implementation of tolling along the SH 121 mainlanes currently under construction and the possible incorporation of Federal funds to this state funded project. This EA has been prepared in accordance with FHWA Texas Division Office policy memorandum, *Policy for Planning, Environment and Project Development for Toll Roads* (September 29, 2003). The proposed facility design remains as a widening project to a six lane controlled access facility with three lane frontage roads. The frontage roads would remain as a non-toll alternative to the proposed toll facility. No additional right-of-way (ROW) or design changes are required to implement the proposed project. The project schematic and conceptual toll plan are available for inspection at the TxDOT Dallas District office.

**Table 1** outlines the construction status of SH 121 from 0.23 mile west of Business SH 121 to east of MacArthur Boulevard. The following projects were state funded.

**Table 1\***  
**Construction Update**

<b>CSJ Number</b>	<b>Limits</b>	<b>Current Status</b>	<b>Estimated Percent Work Complete (%)</b>
3547-03-003	<b>Mainlanes</b> - 0.23 mile west of Business SH 121 to Denton/Dallas County Line	<b>Under Construction</b> Estimated Cost: \$18.5 million	90%
3547-02-004	<b>Mainlanes</b> - Denton/Dallas County Line to Dallas/Denton County Line	<b>Under Construction</b> Estimated Cost: \$15.7 million	90%
3547-01-005	<b>Mainlanes</b> - Dallas/Denton County Line to MacArthur Blvd.	<b>Under Construction</b> Estimated Cost: \$8.97 million	90%
3547-03-002	<b>Frontage Roads</b> - 0.23 mile west of Business SH 121 to Denton/Dallas County Line	Complete	100%
3547-02-003	<b>Frontage Roads</b> - Denton/Dallas County Line to Denton Tap Road	Complete	100%
3547-02-001	<b>Frontage Roads</b> - Denton Tap Road to Dallas/Denton County Line	Complete	100%
3547-01-001	<b>Frontage Roads</b> - Dallas/Denton County Line to Lake Vista Drive (only a portion of the work under this is within the project limits)	Complete	100%

\*Please refer to Appendix A: Figure 1.

The estimated cost of these state funded projects currently under construction is \$43,170,000.00.

## **CHAPTER 1: PURPOSE AND NEED FOR THE PROJECT**

The purpose of the proposed toll facility is to improve system linkage and mobility in the area. Tolling would support the purpose of the project by generating revenue for the operation and maintenance of SH 121 as well as funding additional near neighbor/near timeframe policy projects. The accelerated construction of additional transportation projects would also improve system linkage and mobility in the area.

This toll facility is proposed to be an electronic toll collection system. **Chapter 2: Section C.1** describes the electronic toll collection system in further detail.

The proposed improvements are needed to handle the present and future traffic demands for this area and would substantially benefit communities in the project area by providing ease of mobility to vital destinations.

## **Recent Toll Funding Initiatives and Legislative Actions**

### *Statewide Perspective*

Texas House Bill (HB) 3588, enacted in the 78<sup>th</sup> legislative session, relates to the construction, acquisition, financing, maintenance, management, operation, ownership, and control of transportation facilities and the progress, improvement, policing, and safety of transportation in the state. The bill addresses the full scope of transportation issues facing the state by integrating existing transportation policies and providing a means to fund them.

With HB 3588 enacted, TxDOT now has the authority to employ a toll facility option for highway funding. The bill represents some of the most comprehensive mobility legislation ever enacted. HB 3588 provides for a revenue source for the Texas Mobility Fund, a one-time bond program that will infuse up to \$3 billion in funding for mobility projects over the next several years.

Proposition 14 passed by Texas voters in the 2003 November election allows TxDOT to sell bonds and pay the debt service with future revenue into the state highway fund also called Fund 6. Pass-through tolling agreements are an option, as well as advance ROW acquisition, and the ability for TxDOT to contribute equity into a toll project. The statute also expanded the use of comprehensive development agreements.

In December 2003, the Texas Transportation Commission (TTC) approved a policy instructing TxDOT to evaluate all controlled-access highway projects as possible candidates for tolling. On March 24, 2004, the TTC approved Minute Order 109615, which allows TxDOT to issue bonds and other public securities to fund state highway system improvements. It is TxDOT policy to evaluate all controlled-access highway projects as possible candidates for tolling. This includes all controlled access projects, including those under construction and those in the planning stage involving new lane construction.

*Regional/Local Perspective*

On August 12, 2004, the Regional Transportation Council (RTC) of the North Central Texas Council of Governments (NCTCOG) approved the Texas Metropolitan Mobility Plan which recommended SH 121 as a toll facility from 0.23 mile west of Business SH 121 to the Dallas North Tollway. Copies of the subsequent resolutions are included in **Appendix B**. The estimated cost of implementing the tolling components from 0.23 mile west of Business SH 121 to the DNT is \$30 million.

On September 9, 2004, the RTC approved a policy regarding excess revenue generated by toll facilities in the Dallas/Fort Worth (DFW) Area. The policy outlines the circumstances under which excess toll revenue would become available and distributed. Under this policy, a Memorandum of Understanding (MOU) was signed by Denton County, Collin County, and the cities of The Colony, Lewisville, Carrollton, Coppell, Grapevine, Plano and Frisco regarding the SH 121 toll facility funding strategy (see **Appendix B**).

By partnering together, state and local officials can leverage additional state transportation funds, freeing existing allocations for critical, but otherwise unbudgeted, safety, capacity and air quality projects. This shift allows new projects that were originally budgeted through gasoline tax revenue to be built or opened as toll facilities to generate revenue. This revenue would be used to build additional transportation facilities with accelerated construction schedules.

Also, in cases where a previously planned tax supported highway is programmed to a toll road, the funds that are released are committed to projects along that same corridor utilizing RTC's near neighbor/near timeframe policy. Under this policy, when a previously planned tax supported highway is shifted into a toll facility, those original gas tax funds are to be reallocated to projects that serve the same transportation system users, and the newly identified projects are to be completed in comparable timeframes. Projects identified as near neighbor/near timeframe policy for SH 121 are detailed in the MOU.

By tolling SH 121, all sections of the mainlanes currently under construction could be open to traffic by 2007-2008. Additional funding would be then be allocated to support near neighbor/near timeframe projects in the areas identified in the MOU with local communities. By leveraging the capital investment in the proposed SH 121 corridor estimated at approximately

\$300 million, TxDOT would be able to develop a total program of over \$700 million in new construction.

This proposed project is consistent with the area's financially constrained Metropolitan Transportation Plan (MTP) known as Mobility 2025 Plan-Amended April 2005.

### **A. Objectives of the Project**

The primary objective of the proposed toll facility is to utilize new funding tools to further expedite the construction of the transportation network in this region by:

- Providing toll revenue as an additional funding source to pay for the capital cost, as well as operation and maintenance of the proposed corridor;
- Creating a revenue source to fund future capacity improvements along the SH 121 corridor;
- Allocating future excess toll revenue so that it would be reinvested in future (near timeframe) transportation projects in the local area (near neighbor);
- Accelerate future project construction schedules and help alleviate congestion; and
- Enhancing economic development and even accelerating the local tax-base growth.

### **B. Focus of this Environmental Analysis**

The National Environmental Policy Act of 1969 (NEPA) requires that social, economic, and natural environmental effects of any proposed action of the Federal government be analyzed for decision-making and public information purposes.

This EA utilized the previously approved State FEIS as a foundation to identify impacts of implementing an electronic toll collection system on proposed SH 121 mainlanes currently under construction. The environmental consequences of the proposed action, as described in the previously approved State FEIS, were analyzed and summarized in light of the proposed project and are documented in **Chapters 2 and 3**. The project is already under construction, but not yet



open to traffic. All permits and approvals needed for impacts to the natural environment have been obtained. This EA focuses on the social and economic aspects of the proposed electronic toll collection facility. There have been no roadway design changes, nor is any additional ROW required to implement the proposed facility.

## **B.1 Planning Process**

A systematic and interdisciplinary planning approach was utilized to determine if the proposed SH 121 toll facility meets the project's objectives and resulted in no substantial impacts on the social, economic, and natural environment. Public involvement/outreach, review and consideration of relevant studies/documents and project issues were studied and are discussed in the following sections.

### **Public Involvement**

TxDOT staff met with city and county officials 45 times during 2004 and developed a consensus to toll SH 121 in Denton County.

Public meetings were held in the cities of Coppell and The Colony to inform the public of the proposed implementation of an electronic toll collection system on the SH 121 mainlanes currently under construction at the following locations:

#### **June 14, 2005**

Coppell High School Gymnasium  
185 W. Parkway Blvd.  
Coppell, Texas 75019

#### **June 16, 2005**

The Colony High School  
4301 Blair Oaks  
The Colony, Texas 75056

Approximately 50 citizens and four elected officials attended the meetings. Drawings of the conceptual toll plan were available for public review during the open house period from 5:00 p.m. to 6:30 p.m. The conceptual toll plan depicted the layout of the proposed facility, toll gantry locations, signage, and proposed noise barriers. The open house was followed by a presentation explaining the proposed toll evaluation approach and process. Eight citizens made verbal comments. Six written comments were also received. Issues of concern included noise barriers, implementation of a no-cash toll collection facility, alternative non-toll routes, and potential impacts to local economic development. Public meeting summaries are available at the

TxDOT Dallas District for review. A public hearing would be held for this project further along in the project development process.

## B.2 Related Studies and Relevant Documents

As previously noted, the RTC approved SH 121 as a toll facility from 0.23 mile west of Business SH 121 to the Dallas North Tollway (DNT). This EA is one of two environmental documents being prepared for this proposed toll facility. **Appendix A: Figure 1B** and **Table 2** depict the environmental history for the SH 121 corridor from 0.23 mile west of Business SH 121 to U.S. 75.

Projects #2, #4, and #5, as depicted in **Appendix A: Figure 1B** and **Table 2**, are incorporated as a reference into the proposed project and the prospective impacts are considered in a separate EA re-evaluation document (SH 121: from East of MacArthur Blvd. to the Dallas North Tollway). These three projects received a Finding of No Significant Impact (FONSI) determination as non-toll facilities by FHWA and are now being constructed with Federal funds.

There is also a portion of the State FEIS from east of IH 35E to Hebron Parkway (see Project #3 on **Appendix A: Figure 1B** and **Table 2**) which was constructed without frontage roads utilizing State funds. This portion of the project is complete, open to traffic, and would not be considered as a future toll facility in compliance with current RTC policy.

**Table 2**  
**SH 121 Environmental History**

<b>Project Number*</b>	<b>Limits</b>	<b>Approval Date</b>	<b>Status</b>
1	Denton Creek to FM 423	State FEIS 04/28/1993 (State ROD)	A portion is the subject of this EA. Being evaluated as a toll facility and to be reviewed/approved by FHWA to Federalize the remaining State funded portion of the State FEIS.
2	East of IH 35E (Hebron Pkwy.) to 0.05 Mile East of FM 423	<i>Environmental Assessment</i> 09/09/2003 (FHWA FONSI)	Being re-evaluated (E. of MacArthur Blvd. to DNT) to consider SH 121 as a toll facility.
3	East of IH 35E to Hebron Parkway	Non-Toll Mainlanes Open to Traffic	Constructed with State funds. Open to traffic and would not be considered as a future toll facility in compliance with current RTC policy.

Project Number*	Limits	Approval Date	Status
4	SH 121/IH 35E Interchange: East of MacArthur Blvd. to East of IH 35E	<i>Environmental Assessment</i> 04/13/1990 (FHWA FONSI) <i>EA Re-Evaluation</i> 01/09/2003 (FHWA Approval)	Being re-evaluated (E. of MacArthur Blvd. to DNT) to consider SH 121 as a toll facility.
5	FM 423 to U.S. 75	<i>Environmental Assessment</i> 11/22/1991 (FHWA FONSI) <i>Notice of Continuous Activity</i> 05/25/1999 (FHWA Approval) <i>EA Re-Evaluation</i> 10/17/2002 (FHWA Approval)	Being re-evaluated (E. of MacArthur Blvd. to DNT) to consider SH 121 as a toll facility.

\*see Appendix A: Figure 1B

Other regional projects in the general study area include President George Bush Turnpike (Segment IV) and IH 35E from IH 635 to U.S. 380.

*President George Bush Turnpike (PGBT) Segment IV Major Investment Study/Environmental Impact Statement:*

This study evaluated an approximately 5.5 mile long route connecting Segments III and V of the PGBT. This would provide a continuous outer loop around Dallas, Texas, and improve traffic congestion and mobility in the project corridor. The study considered a no-build and five build alternatives and is currently under construction.

*IH 35E from IH 635 to U.S. 380:*

IH 35E is a major north/south thoroughfare constructed in the 1950s and early 1960s that bisects North Central Texas. The proposed improvements cover a distance of approximately 28 miles and are intended to enhance the regional and national transportation system by increasing capacity, reducing traffic congestion, improving mobility, and improving design deficiencies within the DFW metropolitan area. This project is currently in the EA/Schematic phase of project development and funding from the near neighbor/near timeframe policy would benefit portions of the IH 35E project as detailed in **Appendix B**.

### B.3 Issues Studied in Detail

The following issues were studied in detail because they were determined relevant to the analysis of the proposed electronic toll collection system on the mainlanes.

- **Noise:** The NCTCOG modeled toll traffic volumes for 2025 (see **Appendix C: 2025 Traffic Volumes**). As a result, a new traffic analysis was conducted based on the toll traffic volumes. The noise model determined that several additional receivers would be impacted by highway traffic noise as a result of the proposed toll facility. Therefore, noise abatement measures have been proposed.
- **Air Quality:** The project is located in an area that is in non-attainment of the National Ambient Air Quality Standards (NAAQS); therefore, the Transportation Conformity Rule applies. The proposed project's traffic projection exceeds 20,000 vehicles per day, so a Traffic Air Quality Analysis (TAQA) is warranted. The NCTCOG 2025 toll traffic volumes were used to conduct the air analysis (see **Appendix C: 2025 Traffic Volumes**).
- **Socio-Economic Issues:** The proposed project was evaluated based on the requirements of Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations; EO 13166, Improving Access to Services for Limited English Proficiency (LEP); Title VI, Civil Rights Act of 1964; Civil Rights Restoration Act of 1987; and the Federal Aid Highway Act of 1970.
- **Visual and Lighting:** Toll gantries, due to the implementation of the proposed electronic toll collection facility on SH 121, add a visual lighting component to the project that was not previously assessed.

### B.4 Issues Eliminated from Further Study

The proposed project is currently under construction. The following issues were eliminated from further study since the proposed toll facility would not change the footprint of the roadway. Additional ROW is not required and there are no design changes.

### **Construction Impacts**

Construction would continue in stages so travel lanes would remain open. Construction of a detour would not be required.

### **Cultural Resources**

No properties 50 years of age or older were identified within the area of potential effects (APE), which is defined as the ROW, both for this re-evaluation and for the previous coordination in 1996. The proposed SH 121 toll facility does not warrant additional coordination with the Texas Historical Commission (THC). There are no cemeteries within or adjacent to the proposed project that would be affected by the construction of the proposed project. All coordination with the State Historic Preservation Office was completed for the subject project on January 5, 1996 (see **Appendix B**).

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

### **Farmlands**

No additional ROW is required; therefore, the proposed project is exempt from the requirements of the Farmland Protection Policy Act (FPPA). No coordination with the Natural Resources Conservation Service (NRCS) is required.

### **Floodplains**

A portion of the project lies within the 100-year floodplain of Denton Creek. The hydraulic design of the proposed roadway improvements would be in accordance with current TxDOT and FHWA policy standards. The proposed project would not increase the base flood elevation to a level that would violate applicable floodplain regulations and ordinances.

The proposed project is located on the (FEMA) Flood Insurance Rate Map (FIRM) Map Number 48121C0545F (**Appendix A: Figure 2**). The proposed project is located within the 100-year floodplain of Denton Creek. No floodplain impacts would occur as a result of the proposed toll facility.

A portion of this project is within the Trinity River Corridor Development Certificate Regulatory Zone. However, construction of this segment of the project is complete and open to traffic. Therefore, no coordination or Trinity River Corridor Development Certificate is required for this EA prepared for the proposed tolling.

### **Hazardous Materials**

Under the State FEIS, a thorough investigation of public records and initial site assessments were performed for the project ROW to identify possible hazardous materials within the project limits. Based on the results received from the data base search and site assessments, there were no properties found within the proposed project limits that were considered "at risk". There are no hazardous material impacts from the proposed project that were not previously identified in the approved State FEIS.

### **Waters of the U.S., Including Wetlands**

This section of the State FEIS originally did not proposed impacts to waters of the U.S., including wetlands. There are no additional waters of the U.S. including wetlands impacted by the proposed project that were not previously identified in the approved State FEIS. Coordination with the U.S. Army Corps of Engineers (USACE) is not required.

This project would meet Clean Water Act Section 401 Water Quality Certification requirements by using one best management practice from each of the three Tier I categories. These would include block sod for erosion control, detention basins for sedimentation control, and vegetative filter strips for total suspended solids (TSS) controls. Previous Texas Commission on Environmental Quality (TCEQ) commitments on water quality certification remains valid. The proposed toll facility does not warrant additional commitments for Section 401 certification under Tier I guidelines.

### **Land Use**

The project area has been subjected to previous disturbances associated with commercial and residential development, and previous and on-going construction of the SH 121 facility. Existing commercial and industrial land uses are likely to continue developing within the proposed toll facility corridor.

**Public Facilities and Services**

The proposed alignment would not impact any public facilities or services. In essence, the construction of the toll facility would enhance access to these facilities and services once construction is complete.

**Relocations and Displacements**

The proposed tolling of SH 121 requires no additional ROW acquisition; therefore, no displacement or relocations are anticipated.

**Secondary/Cumulative Impacts**

The Council on Environmental Quality (CEQ) defines indirect or secondary effects as those which are caused by the action and are later in time and farther removed in distance, but are still reasonably foreseeable. They may include growth induced effects and changes in the pattern of land use, population densities, or growth rates and related changes in air, water, or other natural resources and ecosystems. These effects may not necessarily be restricted to just the study area.

The CEQ defines cumulative effects as those which result 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. As such, it may be difficult to understand the role that a proposed action may have in contributing to the overall or cumulative impacts to an area or resource. Potential secondary and cumulative impacts from the proposed project may include:

- Land use changes due to increased desirability of land. Changes would primarily consist of residential and commercial development;
- Stimulation of local economies due to construction and potential and realized development opportunities;
- Potential increases in population and need for additional utilities;
- Runoff increase due to changes in land use and potential increases in sedimentation in areas receiving runoff; and
- Further fragmentation and decreased wildlife habitat in areas of increased development.

### *Secondary and Indirect Impacts*

Tolling the proposed roadway may create some secondary social and economic impacts that result indirectly from the proposed improvements to the existing roadway. It is anticipated that development opportunities would increase within the study area. Generally, as access to the study area becomes more convenient, more areas would become practical and economically feasible for development and land use changes to occur. This corridor was previously planned and is currently under construction and any anticipated land use changes would occur regardless of the proposed tolling.

The overall construction of facilities within this larger transportation system would result in the continued residential and commercial development. Undeveloped areas within the project area would likely be developed for residential and commercial use.

### *Cumulative Impacts*

Cumulative impacts and secondary impacts from roadway projects are usually associated with areas of land that may change from their previous land use. The extent that the proposed project may contribute to these cumulative land use change impacts in an area is dependent upon many factors: distance from the project, real estate speculation, other anticipated and planned projects in the area, development zones, municipal planning, size and closeness of the nearest metropolitan area, local and state regulations and the extent to which they are enforced, to mention a few. Some beneficial cumulative impacts may include the addition of infrastructure improvements constructed to support the increased development and commerce associated with the proposed roadway and economic growth in the immediate area.

Secondary impacts to economic, environmental, and social attributes of the project area resulting from the proposed project are expected to be minimal. Local and regional growth would be the determining factors in the future development of this area. No secondary social impacts are anticipated because the project does not bisect any communities that are not already bisected by the existing roadway corridor.

### **Section 4(f) Properties**

The proposed project would not require the use of any publicly owned land from a public park, recreation area or wildlife and waterfowl refuge or historic sites of national, state or local



significance, a Section 4(f) statement would not be required. There are no Section 4(f) properties impacted by the proposed toll facility.

### **Threatened/Endangered Species and Wildlife Habitat**

The approved State FEIS addressed species that were historically found within Denton and Dallas Counties. It was noted that Denton and Dallas Counties fall within the migration route of the whooping crane and interior least tern; however, because of the nature of the project, no effects are anticipated.

Vegetation within the ROW and adjacent to the proposed project is not consistent with mapped vegetation according to the Vegetation Types of Texas (TPWD, 1984), which lists the vegetation as Native/Introduced Grasses. There is no compensatory mitigation warranted by the proposed SH 121 electronic toll collection facility.

The Migratory Bird Treaty Act (MBTA) States that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, or egg in part or in whole, without a federal permit issued in accordance within the Act's policies and regulations. Dallas County is located within the migration route of the whooping crane and arctic peregrine falcon. Migrational patterns would not be affected by the proposed project. Therefore, the requirements for the MBTA appear to be satisfied.

The current status of federal and state listed and candidate species has not changed since available information at the time of the State ROD. The project is currently under construction and U.S. Fish and Wildlife Service (USFWS) and Texas Parks and Wildlife Department (TPWD) coordination was previously completed. This assessment remains valid and no further coordination with USFWS or TPWD is necessary for the proposed tolling of the SH 121 mainlanes currently under construction.

### **Lakes, Rivers and Streams**

The proposed project does not cross any lakes, rivers or streams. A navigational clearance under Section 9 (administered by the U.S. Coast Guard [USCG]) and Section 10 (administered by the USACE) of the Rivers and Harbors Act of 1899 is not applicable. Coordination with the USCG (for Section 9) and the USACE (for Section 10) would not be required.

**Vegetation**

Under the State EIS, coordination with Texas Parks and Wildlife Department (TPWD) has been concluded with a mitigation plan to replace 1.5 acres in impacted riparian woodland. In accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping, seeding and replanting with TxDOT approved seeding specifications that is in compliance with Executive Order 13112 would be done where possible.

**Water Quality**

Denton Creek is not listed as either threatened or impaired in the 2002 Clean Water Act Section 303(d) list, and the project is not within 5 miles upstream of a threatened or impaired water segment. Therefore, coordination with Texas Commission on Environmental Quality (TCEQ) is not required for total maximum daily loads.

No permanent water quality impacts are expected as a result of the proposed project. Subsurface water would not be required for this project; therefore, no adverse effects to groundwater are expected to occur. Existing surface drainage patterns would be maintained. The area's public water supply treatment facilities and water distribution systems would not be affected by this proposed project. Temporary water quality impacts due to erosion and sedimentation would be controlled by job specifications. This includes on-site inspections during construction, silt fences, and by seeding during, and at the completion of, the project. TxDOT contract specifications require the contractor to minimize negative effects to water quality at all times during construction.

The Clean Water Act makes it unlawful to discharge storm water from construction sites into waters of the U.S. unless authorized by the Texas Commission on Environmental Quality's (TCEQ) Texas Pollutant Discharge Elimination System (TPDES) General Permit.

Because this project will disturb more than one (1) acre, TxDOT will be required to comply with the Texas Commission on Environmental Quality (TCEQ) - Texas Pollutant Discharge Elimination System General Permit for Construction Activity. The project will disturb more than five (5) acres; therefore, a Notice of Intent will be filed to comply with TCEQ stating that TxDOT will have a Storm Water Pollution Prevention Plan (SW3P) in place during construction of proposed project. This "SW3P" utilizes the temporary control measures as outlined in the Department's manual "Standard Specifications for the Construction of Highways, Streets, and Bridges". Impacts will be minimized by avoiding work by construction equipment

directly in the stream channels and/or adjacent areas. No long-term water quality impacts are expected as a result of the proposed project.

### **Items of a Special Nature**

#### *Airway-Highway Clearance*

The project corridor does not come within 20,000 ft of any airport property. Aircraft Clearance issues are not associated with this project.

#### *Coastal Zone Management Plan*

The proposed project is not located within the Texas Coastal Zone Management Program boundary; therefore, this project is not subject to the guidelines of the associated plan.

#### *Essential Fish Habitat*

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

#### *Wild and Scenic Rivers*

There are no wild and scenic rivers in the project area; therefore there would be no impacts to a river designated as a component or proposed for inclusion in the national system of Wild and Scenic Rivers.

## **C. Applicable Regulatory Requirements and Required Coordination**

SH 121 is currently under construction and the proposed implementation of an electronic toll collection facility does not require additional regulatory permits or coordination. A public hearing would be conducted to gauge local support/opposition and to ensure that all relevant issues have been addressed in the EA.

## **CHAPTER 2: DESCRIPTION OF THE ALTERNATIVES**

### **A. Process Used to Develop the Project Alternatives**

In the development process of the State FEIS, several build alternatives were considered as well as multimodal transportation options. Since the proposed project is already under construction, the following alternatives considered were “Toll” and “Non-toll.”

### **B. Requirements for and Benefits of Alternatives**

The following categories were analyzed to develop and evaluate project alternatives.

#### **B.1 Desired Project Benefits**

- Providing toll revenue as an additional funding source to pay for the capital cost, as well as operation and maintenance of the proposed corridor;
- Creating a revenue source to fund future capacity improvements along the SH 121 corridor;
- Allocating future excess toll revenue so that it would be reinvested in future (near timeframe) transportation projects in the local area (near neighbor);
- Accelerate future project construction schedules and help alleviate congestion; and
- Enhancing economic development and even accelerating the local tax-base growth.

#### **B.2 Environmental Protection Requirements**

Coordination and compliance with applicable environmental protection requirements was initiated and coordinated through the State FEIS. SH 121 is currently under construction and the proposed implementation of an electronic toll collection facility does not require additional

regulatory permits or coordination. See Chapter 3 for a detail of the environmental consequences associated with the proposed electronic toll collection facility.

## **C. Detailed Description of Project Alternatives**

### **C.1 Toll Alternative**

The concept of an electronic toll collection system is proposed for SH 121. With an electronic toll collection system, tolls would be collected through toll gantries positioned at certain mainlane and ramp locations. As currently conceived, tolls would be collected using a completely electronic system; the system would not be able to accept cash. Proposed mainlane and ramp gantry locations are depicted in **Appendix C: Conceptual Toll Plan**. Each mainlane toll gantry would span both directions of travel on a structure similar to a typical sign bridge. The gantry would support electronic toll collection reader units, video enforcement system cameras, illumination devices, automatic vehicle identification antennae, communications gear, and other necessary equipment. This equipment would be supported approximately 20 ft above the roadway surface and would be used to collect electronic toll data. Ramp gantries would be similar to the mainlane gantries, except that they would only span the width of the particular entrance or exit ramp.

There would be no changes to ROW, design or to the footprint of the proposed facility in order to implement an electronic toll collection system. Right-of-way acquisition for the project has been ongoing since the previously approved State FEIS and is now 100 percent complete.

Excess revenue from the electronic toll collection facility would be allocated to support near neighbor/near timeframe projects and construction schedules would be accelerated, thus expediting the alleviation of traffic congestion in the region.

### **C.2 Non-Toll Alternative**

Under the non-toll alternative, no changes to the previously approved State FEIS would occur. Construction along the proposed SH 121 would continue, however additional transportation projects in the area would not be funded according to the near neighbor/near timeframe policy, since SH 121 would not generate excess toll revenue.

## **CHAPTER 3: POTENTIAL AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES OF THE ISSUES STUDIED IN DETAIL**

### **A. Noise**

NCTCOG modeled toll traffic for 2025 (see **Appendix C: 2025 Traffic Volumes**). As a result, a new noise analysis was conducted based on the toll traffic projections. 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.

<b>FHWA NOISE ABATEMENT CRITERIA</b>		
<b>Activity Category</b>	<b>dBA Leq</b>	<b>Description of Land Use Activity Areas</b>
<b>A</b>	<b>57 (exterior)</b>	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>B</b>	<b>67 (exterior)</b>	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals.
<b>C</b>	<b>72 (exterior)</b>	Developed lands, properties or activities not included in categories A or B above.
<b>D</b>	<b>--</b>	Undeveloped lands.
<b>E</b>	<b>52 (interior)</b>	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 exterior areas are physically shielded from the roadway, or if there is little or no human activity in exterior areas adjacent to the roadway.

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

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

**Relative criterion:** the predicted noise level substantially exceeds the existing noise level at a receiver even though the predicted noise level does not approach, equal or exceed the NAC. "Substantially exceeds" is defined as more than 10 dBA. For example: a noise impact would occur at a Category B residence if the existing level is 54 dBA and the predicted level is 65 dBA (11 dBA increase).

When a traffic noise impact occurs, noise abatement measures must be considered. A

noise abatement measure is any positive action taken to reduce the impact of traffic noise on an activity area.

The FHWA traffic noise modeling software was used to calculate existing and predicted traffic noise levels. The model primarily considers the number, type and speed of vehicles; highway alignment and grade; cuts, fills and natural berms; surrounding terrain features; and the locations of activity areas likely to be impacted by the associated traffic noise.

Existing and predicted traffic noise levels were modeled at receiver locations (**Table 3** and **Appendix C: Conceptual Toll Plan**) 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 3**  
**Traffic Noise Levels (dBA Leq)**

Representative Receiver	NAC Category	NAC Level	Existing 2005	Predicted 2025	Change (+/-)	Noise Impact
R1 Coppell Greens Sub.	B	67	64	69	5	Y
R2 Magnolia Park Sub.	B	67	65	68	3	Y
R3 Magnolia Park Sub.	B	67	64	67	3	Y
R4 Villas of Vista Ridge	E	52	46	49	3	N
R5 Vistas of Coppell	B	67	65	68	3	Y
R6 Vistas of Coppell	B	67	65	68	3	Y
R7 Vistas of Coppell	B	67	64	67	3	Y
R8 Vistas of Coppell	B	67	65	68	3	Y
R9 Denton Creek Elem.	B	67	62	65	3	N
R10 Coppell Mid. School	B	67	62	65	3	N
School Outdoor Activity Area	B	67	66	68	2	Y
R11 Enclaves Apts.	E	52	47	50	3	N

As indicated in **Table 3**, the proposed project would result in a traffic noise impact and the following noise abatement measures were considered: traffic management, alteration of



horizontal and/or vertical alignments, acquisition of undeveloped property to act as a buffer zone and the construction of noise walls.

Before any abatement measure can be 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 ROW 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 walls: this is the most commonly used noise abatement measure. Noise walls were evaluated for each of the impacted receiver locations.

As listed in **Table 4**, noise walls would be feasible and reasonable for the following impacted receivers and, therefore, are proposed for incorporation into the project.

**TABLE 4**  
**NOISE WALL PROPOSAL (preliminary)**

<b>WALL</b>	<b>Representative Receivers</b>	<b>Total # Benefited</b>	<b>Length (feet)</b>	<b>Height (feet)</b>	<b>Total Cost</b>	<b>\$/Benefited Receiver</b>
1	R1 Coppell Greens Subdivision	25	3,000	5 ft. Main Lane Noise Wall	\$270,000	\$10,800
2	R2, R3 Magnolia Park Subdivision	19	2,200	8 ft. Main Lane Noise Wall	\$316,800	\$16,674

3	School Outdoor Activity Area, R5, R6, R7, R8 Vistas of Coppell	29	4,000	8 ft. NB Main Lane Noise Wall	\$576,000	\$19,862
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Any subsequent project design changes may require a re-evaluation of this preliminary noise barrier proposal. The final decision to construct the proposed noise barrier would not be made until completion of the project design, utility evaluation and polling of adjacent property owners.

To avoid noise impacts that may result from future development of properties adjacent to the project, local officials responsible for land use control programs should ensure, to the maximum extent possible, no new activities are planned or constructed along or within the following predicted (2025) noise impact contours.

<b>LAND USE</b>	<b>IMPACT CONTOUR</b>	<b>DISTANCE from RIGHT of WAY</b>
Residential	66 dBA	400 feet
Commercial	71 dBA	200 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 would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.

A copy of this traffic noise analysis 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.

## **B. Air Quality**

NCTCOG modeled toll traffic for 2025 (see **Appendix C: 2025 Traffic Volumes**). As a result, a new air analysis was conducted based on the toll traffic projections.

The Transportation Improvement Program (TIP) contains programmed transportation improvements inside the metropolitan area boundary (MAB). Programmed transportation improvements located outside of the MAB are contained in the Statewide TIP (STIP).

On April 14, 2004, the US EPA designated nine North Central Texas counties as a nonattainment area for the pollutant ozone under the eight-hour ozone NAAQS. The nine counties include: Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall and Tarrant. The 2006-2008 TIP and Mobility 2025: The Metropolitan Transportation Plan (MTP), Amended April 2005 apply within the MAB. Areas within the nine counties listed, but outside the MAB, are referred to as the extended nonattainment area. Projects within the extended nonattainment area are identified in the Transportation Conformity Document.

The proposed project is in Dallas and Denton Counties, which are part of the previously referenced MAB. The construction of the proposed project as a non-toll facility 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. On June 16, 2005, the MTP and 2004-2006 Transportation Improvement Program (TIP) were found to conform to the Clean Air Act as amended. The proposed action, construction of SH 121, is currently included in the 2006-2008 STIP. Due to the proposed tolling, the funding source will need to be revised in the 2006-2008 STIP before the project can let as a toll facility. Additionally, the project comes from an operational congestion management system that meets all requirements of 23 CFR Highways, Parts 450 and 500.

The primary pollutants from motor vehicles are volatile organic compounds (VOCs), carbon monoxide (CO) and nitrogen oxides. VOCs and nitrogen oxides can combine under the right conditions in a series of photochemical reactions to form ozone (O<sub>3</sub>). Because these reactions take place over a period of several hours, maximum concentrations of ozone are often found far downwind of the precursor sources. Thus, ozone is a regional problem and not a localized condition.

The modeling procedures of ozone require long term meteorological data and detailed area wide emission rates for all potential sources (industry, business, and transportation) and are normally too complex to be performed within the scope of an environmental analysis for a

highway project. Accordingly, concentrations of ozone for this purpose of comparing the results of the NAAQS are modeled by the regional air quality planning agency for the State Implementation Plan (SIP). However, concentrations for carbon monoxide are readily modeled for highway projects and are required by federal regulations.

The topography and meteorological conditions of the area in which the project is located would not seriously restrict dispersion of the air pollutants. The air quality was modeled at two locations along the corridor. The air receivers are displayed in **Appendix C: Conceptual Toll Plan**. The traffic data used in the analysis was obtained from NCTCOG.

The traffic volumes resulting in the highest CO emission readings for 2008, the Estimated Time of Completion (ETC) year and 2028, the design year or ETC+20 are 27,080 vehicles per day (vpd) along the eastbound frontage road, 77,600 vpd for the eastbound main lanes, 78,970 vpd along the westbound main lanes and 25,390 vpd along the westbound frontage road.

Using the CALINE3/MOBILE6 computer program and the aforementioned traffic data, CO concentrations were determined in accordance with the TxDOT Air Quality Guidelines. CO concentrations for the proposed action were modeled using the worst-case scenario (adverse meteorological conditions and sensitive receptors at the ROW line) in accordance with the TxDOT Air Quality Guidelines. Local concentrations of CO are not expected to exceed national standards at any time.

#### *Analysis Findings*

CO background ambient concentrations of 3.7 parts per million (PPM) for a one hour average and 2.3 ppm for an eight hour average were used in all alternatives analyzed. The National Ambient Air Quality Standards (NAAQS) for CO is 35.0 ppm for one hour and 9.0 ppm for eight hours. CO concentrations for this segment of SH 121 were modeled under the worst meteorological conditions (wind speed of 1 m/s, wind bearing of 90°, stability class of F, surface roughness of 100 cm, and mixing height of 1000 m). Station number 2146+00 had the highest percent NAAQS for the existing year (2008) and the design year (2028) conditions as shown in **Table 5**.

**TABLE 5**  
**Carbon Monoxide Concentrations**

Year	Station Number	1 HR CO (ppm) *	1 HR % NAAQS	8 HR CO (ppm) *	8 HR % NAAQS	Schematic Sheet No.
2008	2146+00	7.5	21.43 %	4.58	50.89%	1
2028	2146+00	7.5	21.43%	4.58	50.89%	1

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

#### *Congestion Management System (CMS)*

The Congestion Management System (CMS) is a systematic process for managing traffic congestion. The CMS provides information on transportation system performance, alternative strategies for alleviating congestion, and enhancing the mobility of persons and goods to levels that meet state and local needs. The SH 121 proposed roadway expansion project was developed from the NCTCOG 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: the program level and the project implementation level. Program level commitments are inventoried in the regional CMS and are included in the financially constrained MTP.

The CMS element of the plan carries an inventory of all project commitments detailing the type of strategy, implementation responsibilities, schedules, and expected costs. At the project implementation level, travel demand reduction strategies and commitments would be added to the regional TIP or included in the construction plans. The regional TIP provides for programming of these projects at the appropriate time with respect to the Single Occupancy Vehicle (SOV) facility implementation and project specific elements.

Committed congestion reduction strategies and operational improvements considered to be beneficial to the SH 121 study area would consist of addition of lanes, signalization, and intersection improvements. TxDOT, under the Congestion Mitigation and Air Quality Improvement Plan (CMAQ) program, would manage these projects, which are included in the regional CMS. Individual projects are listed in **Table 6**.

**TABLE 6**  
**Operational Improvements in the Travel Corridor**

Location	Type	Funding Source	Implementation Year	TIP #	Cost
SH 121 From 0.23 mile west of Business SH 121 To Dallas North Tollway	Additional of Lanes	TxDOT-Dallas	2004	11239.0000	\$150,402,000
SH 121 From Tarrant County Line to Denton County Line near Denton Creek	Additional of Lanes	TxDOT-Dallas	2007	0364-02-017	\$70,100,000
SH 121 From Dallas County Line to near Denton Creek	Additional of Lanes	TxDOT-Dallas	2006	0364-03-064	\$11,685,440
IH 35E (Stemmons) From SH 121/ Trinity Mills To IH 635	HOV	TxDOT-Dallas/ DART	2000	2808.0000	\$14,301,000
SH 121 From Dallas/Denton County Line to East of MacArthur Blvd.	New Roadway	TxDOT-Dallas	2003	3547-01-005	\$7,548,427
SH 121 From East of MacArthur Blvd. to east of IH 35E	New Roadway	TxDOT-Dallas	2003	3547-01-008	\$45,352,175
SH 121 From Denton/Dallas County Line to Dallas/Denton County Line	New Roadway	TxDOT-Dallas	2003	3547-02-004	\$12,160,541
SH 121 from north of 0.23 mile west of Business SH 121 to Denton/Dallas County	New Roadway	TxDOT-Dallas	2003	3547-03-003	\$5,319,249
Signals region wide (Phase 2 - Optimization)	Traffic Signal Improvement	Lewisville	2002	11082.0000	\$700,594

\*Source: North Central Texas Council of Governments

In an effort to reduce congestion and the need for SOV lanes in the region, TxDOT and NCTCOG would continue to promote appropriate congestion reduction strategies through the CMAQ program, the CMS, and MTP. The congestion reduction strategies considered for this project would help alleviate congestion in the study area but would not eliminate it. Therefore, the proposed SH 121 proposed roadway expansion project would be justified.

### **C. Socio-Economic Impacts**

This environmental assessment utilizes 2000 census information and other current and best available data. The evaluation addresses the requirements of Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations; EO 13166, Improving Access to Services for Limited English Proficiency (LEP); Title VI, Civil Rights Act of 1964; Civil Rights Restoration Act of 1987; and the Federal Aid Highway Act of 1970.

There does not appear to be disproportionate adverse impacts to any minority and/or low-income populations as a result of the implementation of the proposed project. Although some minimal effects of tolling the mainlanes currently under construction may occur for roadway users within the corridor, it is unlikely that the tolling of the mainlanes currently under construction would result in adverse socio-economic impacts to those roadway users or residents of the study area.

It is anticipated that opening year tolls for automobiles using this facility would be consistent with the national average of 12 to 16 cents per mile. An investment grade traffic and revenue study is under development to determine a more detailed, appropriate pricing structure.

Alternative non-toll routes include the SH 121 frontage roads, which would include a total of six travel lanes (three in each direction), as well as local arterial roadways (i.e. Business SH 121, Hebron Parkway, Memorial Drive Expansion project). The use of frontage roads would provide non-tolled alternatives for motorists not wanting or able to afford to travel the tolled mainlanes. Motorists using the frontage road may experience slightly longer travel times than motorists using the tolled mainlanes. This difference in travel times between the tolled mainlanes and the non-tolled frontage roads would be the highest during peak hours of travel when traffic congestion within the SH 121 corridor would be greatest. However, overall, the added capacity the proposed project offers would provide mobility and relieve traffic congestion for all motorists using the SH 121 corridor whether they use the mainlanes or frontage roads.

#### *Population and Demographic Characteristics*

Population data at the census block group level for the year 2000 from the U.S. Department of Commerce, Census Bureau, has been used in this socioeconomic analysis. Census

block group data provides the appropriate level of detail for an area that is sufficiently small to characterize the area of impact.

The Dallas metropolitan statistical area (MSA) experienced substantial growth in population during the 1990's. The eight county area <sup>1</sup> grew by 842,928 persons during the decade, a 31.5 percent growth rate. During that same period, Dallas County was ranked second and Denton County was ranked eighth in growth among Texas counties, as measured by the increase in the number of people. In 2000, Dallas County was the second most populous of the 254 counties in Texas, with 2,218,899 residents. In 2000, Denton County was the ninth most populous.

The age distribution of an area provides an indication of the area's economic and income potential. According to the 2000 Census, Denton County's population had a median age of 31.0, compared to 31.1 for the Dallas County, 32.3 for Texas, and 35.3 for the U.S. The population age composition of the study area is shown in **Table 7**. A large percentage of the study area population is in the 18-64 age group, the population with the greatest participation in the labor market.

**TABLE 7**  
**Age Composition of the Population**

Census Block Groups*	Total Population	Age 0-17		Age 18-64		Age 65+	
		Number	Percent	Number	Percent	Number	Percent
CT 141.17, BG 2	0	0	0.0	0	0.0	0	0.0
CT 141.18, BG 1	2,639	962	36.4	1,665	63.0	12	0.4
CT 141.22, BG 1	3,243	1,162	35.8	1,941	59.8	140	4.3
CT 217.10, BG 1	9,048	1,310	14.4	7,532	83.2	206	2.2
<b>Study Area</b>	<b>14,930</b>	<b>3,434</b>	<b>23.0</b>	<b>11,138</b>	<b>74.6</b>	<b>358</b>	<b>2.3</b>

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

\*Census Tract (CT), Block Group (BG)

As one of the largest MSA's in Texas, the Dallas MSA offers a diversified economy, dominated by trade, services, and manufacturing.

<sup>1</sup> Collin County, Dallas County, Denton County, Ellis County, Henderson County, Hunt County, Kaufman County, and Rockwall County.



Dallas County, Denton County, and the study area are expected to grow dramatically through the period ending in 2030. Population projections by the NCTCOG indicate that Denton County can expect to have 1,085,343 residents in 2030.<sup>2</sup> That represents more than 657,200 new residents since 2000, an average annual rate of growth of 3.2 percent. NCTCOG projections also indicate that Dallas County can expect to have 2,817,191 residents in 2030.<sup>3</sup> That represents 584,715 new residents since 2000, an average annual rate of growth of 0.78 percent. The NCTCOG developed projections in a four step process, starting with household and employment projections for the metropolitan area, as defined for regional transportation planning, which includes all of Collin, Dallas, Denton, Rockwall, and Tarrant counties as well as portions of Ellis, Kaufman, Johnson, and Parker counties. Wise County is included in the forecast area. The regional forecasts are consistent with state projections.

### *Race and Ethnicity*

The project study area lies within four census block groups. Data from the 2000 Census for these census block groups, as shown in **Table 8**, has been used in this analysis. The four census block groups comprising the study area had a total population of 14,930. Overall, minorities account for 22.6 percent of the study area population, 19.4 percent of the City of Coppell population, and 29.8 percent of the City of Lewisville population. Comparison census block groups contain minority populations that range from 23.2 percent to 28.2 percent. Approximately 8.1 percent of the study area population is Hispanic and Asian, the predominant minority groups. The 2000 Census Block Groups for the study area is shown in **Appendix A: Figure 3**.

### *Community Cohesion*

Community cohesion is a term that refers to an aggregate quality of a residential area. Cohesion is a social attribute that indicates a sense of community, common responsibility, and social interaction within a limited geographic area. It is the degree to which residents have a sense of belonging to their neighborhood or community or a strong attachment to neighbors, groups, and institutions as a continual association over time. Community cohesion would likely remain intact since SH 121 is an existing facility that serves as a boundary between neighborhoods and communities.

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<sup>2</sup> North Central Texas Council of Governments. *North Central Texas 2030 Demographic Forecast*. DFWinfo.com.

<sup>3</sup> North Central Texas Council of Governments. *North Central Texas 2025 Demographic Forecast*. DFWfuture.com.

There are no distinct neighborhoods, ethnic groups, or other specific groups directly adjacent to the project. As a result, the proposed project would not effect, separate, or isolate any distinct neighborhoods, ethnic groups or other specific groups.

Executive Order 13166 on Limited English Proficiency (LEP) calls for all agencies to ensure that their federally conducted programs and activities are meaningfully accessible to LEP individuals. Census block group data was obtained from the U.S. Census Bureau Census 2000 database. According to this information the “Ability to Speak English” for the population five years and over indicates 1.5% of the population within the census block groups along the project corridor speaks English “Not Well” or “Not at All.” **Table 8** contains the percent LEP population for each census block group in the project limits. In a windshield survey along the project corridor, English was observed on billboards and signs. An opportunity was provided for individuals to request an interpreter for the public meetings. None of the LEP populations would be discriminated against as a result of the proposed project. Reasonable steps would continue to be taken to ensure that such person have meaningful access to the programs, services, and information that TxDOT provides. Therefore, the requirements of Executive Order 13166 appear to be satisfied.

**Table 8**  
**Percentage LEP Population: 1999**

Census Block Group	Total Pop 5 Years and Older	Total Number Who Speak English “Not Well” or “Not at All”	% LEP
CT 141.17, BG 2	0	0	0.0
CT 141.18, BG 1	2,304	23	0.9
CT 141.22, BG 1	2,815	53	1.8
CT 217.10, BG 1	8,413	135	1.6
<b>Total Study Area</b>	<b>13,532</b>	<b>211</b>	<b>1.5</b>

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

*Environmental Justice*

In response to Executive Order 12898, signed by President Clinton on February 11, 1994, the U.S. Department of Transportation (U.S.DOT) developed an environmental justice strategy that follows within the framework of the National Environmental Policy Act (NEPA) and Title IV of the Civil Rights Restoration Act of 1987. Executive Order 12898 requires that federally funded projects identify and address any disproportionately high and adverse human health effects from environmental impacts to minority and low-income people. FHWA Order 6640.23 defines a minority as a person who is:

- 1) Black (having origins in any of the black racial groups of Africa);
- 2) Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race);
- 3) Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands), or;
- 4) American Indian and Alaska Native (having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).<sup>4</sup>

Low income is defined as a household income at or below the Department of Health and Human Services poverty guidelines.<sup>5</sup> The U. S. Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is low-income. The Bureau follows the Office of Management and Budget's (OMB) *Statistical Policy Directive 14* in establishing the thresholds. In 2005, the weighted average threshold for a four person family was \$19,350.

A comparison of median household income and poverty status is shown in **Table 9**. The median household incomes of the census block groups included in the study area are similar compared to adjacent census block groups and corresponding municipalities. Median household income of census block groups (see **Appendix A: Figure 3**) comprising the study area ranged from \$49,637 to \$124,679 in 1999.

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<sup>4</sup> U. S. Department of Transportation, Federal Highway Administration. *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, 6640.23. December 2, 1998.

<sup>5</sup> *Ibid.*

**Table 9**  
**Median Household Income and Poverty Status: 1999**

Area/Census Block Group	Population*	Median Household Income	Persons Below Poverty Level	
			Number	Percent
City of Coppel	35,914	\$96,935	680	1.8
City of Lewisville	77,095	\$54,771	4,629	6.0
CT 141.23, BG 1	2,209	\$150,249	28	1.2
CT 217.10, BG 2	6,285	\$68,025	237	3.7
CT 141.17, BG 2	0	\$0	0	0.0
CT 141.18, BG 1	2,639	\$124,679	22	0.8
CT 141.22 BG 1	3,243	\$101,045	0	0.0
CT 217.10, BG 1	9,002	\$49,637	437	4.8
<b>Total Study Area</b>	<b>14,884</b>	<b>N/A</b>	<b>459</b>	<b>3.0</b>

\*Population for whom poverty status has been determined.

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

As shown in **Table 9**, the poverty level in the study area census block groups ranged from 0.0 percent to 4.8 percent, resulting in a study area poverty level of 3.0 percent. The comparison census block groups' poverty levels ranged from 1.2 percent to 3.7 percent. It is not anticipated that there would be any disproportionate impacts to low income populations.

Executive Order 12898 requires that federal agencies identify and address any disproportionately high and adverse human health and environmental impacts of their programs on minority and low-income populations. Disproportionately high and adverse effects on minority or low-income populations generally means an adverse effect that is predominantly borne by a minority population or low-income population or would be suffered by the minority population and/or low-income population, and is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the non-minority population and/or non-low-income population.<sup>6</sup> For purposes of the analysis in this EA, disproportionate adverse impacts to minority or low-income populations is likely to occur when the minority and/or low-income population percentage within a given census block group being adversely impacted is either 50 percent of the total population of that census block group or is more than double the percentage of the population that is minority and/or low-income within the same city. **Table 10** contains the racial and ethnic population for the project area.

<sup>6</sup> U.S. Department of Transportation, Federal Highway Administration. *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations: 6640.23*. December 2, 1998.

**Table 10**  
**Racial and Ethnic Composition of the Population**

Area/ Census Block Group	Total Population	Population of One Race / Not Hispanic or Latino					Hispanic or Latino of Any Race	Total Minority Population
		White	Black or African American	American Indian/ Alaska Native	Asian	Pacific Islander		
City of Coppell	35,955	30,011 83.4%	906 2.5%	124 0.3%	3,444 9.5%	25 0.06%	2,487 6.9%	6,986 19.4%
City of Lewisville	77,514	59,729 77.0%	5,768 7.4%	586 0.7%	3,043 3.9%	12 0.01%	13,699 17.6%	23,108 29.8%
CT 141.23, BG 1	2,209	1,749 79.1%	0 0.0%	20 0.9%	354 16.0%	0 0.0%	140 6.3%	514 23.2%
CT 217.10, BG 2	6,318	4,831 76.4%	523 8.2%	25 0.3%	514 8.1%	0 0.0%	722 11.4%	1,784 28.2%
CT 141.17, BG 2	0	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
CT 141.18, BG 1	2,639	2,259 85.6%	24 0.9%	0 0.0%	289 10.9%	0 0.0%	163 6.1%	476 18.0%
CT 141.22 BG 1	3,243	2,565 79.0%	54 1.6%	5 0.1%	373 11.5%	0 0.0%	178 5.4%	610 18.8%
CT 217.10, BG 1	9,048	7,179 79.3%	788 8.7%	77 0.8%	555 6.1%	0 0.0%	881 9.7%	2,301 25.4%
<b>Total Study Area</b>	<b>14,930</b>	<b>12,003 80.3%</b>	<b>866 5.8%</b>	<b>82 0.5%</b>	<b>1,217 8.1%</b>	<b>0 0.0%</b>	<b>1,222 8.1%</b>	<b>3,387 22.6%</b>

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

None of the census block groups have a 50% or greater minority population. The minority population percentage in the study area census block groups ranged from 0.0 percent to 25.4 percent, resulting in a study area minority population of 22.6 percent. Disproportionate impacts to minority groups are not expected as improvements to the transportation facility would benefit adjacent neighborhoods by improving the capacity of this section of SH 121 to meet growing transportation demands in this area.

### *Economic Impacts*

In addition to time savings, enhanced safety, and reduced vehicle operating costs attributed to highway investment, construction and related activities financed through the Federal-aid program are important sources of employment for persons in many industries throughout the economy. A number of employment estimation models have been developed over the years. A new and improved employment estimation model called JOBMOD was recently developed for the FHWA by the Boston University Center for Transportation Studies and the Battelle Memorial Institute. The model is based on a statistical analysis of labor and material requirements information for the different types of completed Federal-aid highway projects

included in the *Statement of Materials and Labor Used by Contractors on Highway Construction Involving Federal Funds (Form-47)* database.<sup>7</sup> The FHWA *Fiscal Management Information System* was a source of financial and improvement type details for completed projects. While the employment and material density coefficients for highway improvement types used in JOBMOD are average values derived from a large number of Federal-aid projects, and thus subject to a wide variety of conditions, the model provides a general magnitude of the anticipated impacts expected to result during the construction phase of the project.

JOBMOD presents results for three rounds of spending. The proposed project is expected to cost an estimated \$26,500,000 to construct. The first round includes all those jobs that are created either directly by the firms actually constructing the project or by the firms that provide direct inputs to the construction project. Based on the estimated construction cost, first round employment would be approximately 392 person-years, resulting in approximately \$11,458,710 of first round employment income.

Second round employment impacts include jobs in firms that provide inputs to the industries that directly provide materials and equipment used in highway construction. An example of a second round employment impact is a firm that provides sheet steel (second round) to the firm that makes the guard rail (first round). Second round employment generated by the proposed SH 121 project could be expected to add additional 151 person-years of employment, resulting in approximately \$4,688,215 of second round employment income.

Third round employment includes all jobs generated by consumer expenditures resulting from the wages paid for first and second round employment. It is equivalent to the standard input-output definition of “induced” employment, and reflects producers’ response to an increase in demand for all types of goods and services. Third round employment would add approximately 432 person-years of employment during the SH 121 construction period, resulting in approximately \$10,841,950 of third round employment income. The dollar value of goods and services produced across all sectors of the economy as a result of the expenditure of \$26,500,000 to construct the improvements to the proposed project would be an estimated \$128,260,000.

Improvements to an existing roadway often result in adverse economic impacts as well. Firms that depend on passing traffic for their business, such as service stations, fast food

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<sup>7</sup> *Users manual – JOBMOD Estimation Model*. Presented to the U.S. Department of Transportation Federal Highway Administration Office of Transportation Studies and the Battelle Memorial Institute March 28, 2002.

restaurants, and convenience stores, are particularly susceptible to the impacts of highway construction activities. Restricted access to business sites during the construction process is often a major concern. The construction related restrictions include closed driveways, temporarily reduced capacity of driveways or the roadway, intermittent blockage of roadways, and the uncertainty of customers about how to reach the business site during construction. Construction phasing would allow for new lanes to be constructed while traffic continues to utilize the current facility. As additional main lanes are constructed traffic can be shifted and would provide for the current number of lanes to continue throughout construction. Access to businesses can continue to be provided with temporary driveways across areas under construction with minimal interruptions. Controlling the turning movements, however, would result in safer access for customers of adjacent businesses.

#### **D. Visual and Lighting**

The toll gantries are an additional visual element associated with the proposed toll facility. The gantries would include various components of video enforcement equipment such as cameras, appropriate lighting and an interface with the electronic toll transponders. Although additional lighting would be incorporated as part of the violation enforcement system, these additional lighting components would add minimal lighting in comparison to the lighting structures currently planned for the roadway currently under construction. The gantry lighting design, although not complete at this time, has the potential to be designed to eliminate glare and ambient lighting for future adjacent residential development.

#### **E. Summary Comparison of Potential Effects**

**Table 11** summarizes and compares the potential effects of the toll and non-toll alternatives on relevant issues.

**TABLE 11**  
**Summary and Comparison of Effects of Alternatives on Relevant Issues**

<b>Issue</b>	<b>Non-Toll Build</b>	<b>Toll Build</b>
Noise	No change from the previously approved State FEIS and current construction status.	Minimal permanent impacts resulting from the project would be mitigated with the proposed noise walls.

Issue	Non-Toll Build	Toll Build
Air Quality	No change from the previously approved State FEIS and current construction status.	The analysis indicates that project concentrations of CO would be below the NAAQS and would be equal to or below the Non-Toll Build alternative.
Socio-Economic Issues	No change from the previously approved State FEIS and current construction status.	It is unlikely that the tolling of the SH 121 mainlanes currently under construction would result in adverse socio-economic impacts to those roadway users or residents of the study area.
Visual and Lighting	No change from the previously approved State FEIS and current construction status.	The toll gantries would support additional lighting incorporated into the video enforcement system. However, this lighting is not anticipated to impact adjacent property owners since the lighting is directed downward on the passing cars.

## CHAPTER 4: RECOMMENDATION OF THE PREFERRED ALTERNATIVE

### A. Identification and Rationale for the Preferred Alternative

#### A.1 Preferred Alternative

The Toll alternative satisfies the stated needs for the transportation improvement project and would satisfactorily meet the project objectives.

#### A.2 Support Rationale

The Toll alternative would meet the primary objectives of the proposed toll facility to utilize new funding tools to further expedite the construction of the transportation network in this region by:

- Providing toll revenue as an additional funding source to pay for the capital cost, as well as operation and maintenance of the proposed corridor;
- Creating a revenue source to fund future capacity improvements along the SH 121 corridor;
- Allocating future excess toll revenue so that it would be reinvested in future (near timeframe) transportation projects in the local area (near neighbor);



- Accelerating future project construction schedules and help alleviate congestion; and
- Enhancing economic development and the local tax-base growth.

The Toll alternative complies with all federal, state, and local environmental laws. SH 121 is currently under construction and the proposed implementation of an electronic toll collection facility does not require additional regulatory permits or coordination. A public hearing would be conducted to gauge local support/opposition and to ensure that all relevant issues have been addressed in the EA.

## **B. Mitigation and Monitoring Commitments**

Noise walls would be feasible and reasonable at three locations and are proposed to be incorporated into the proposed project.

## **C. Recommendation for Alternative Selection and a FONSI**

Based on the information in this EA and in the project's administrative record, TxDOT recommends implementation of the Toll alternative. The engineering, social, economic, and environmental investigations conducted thus far on the proposed project indicate that it would result in no adverse impacts to the quality of the human or natural environment.

TxDOT requests that FHWA find that implementing the Toll alternative would not be a major Federal action significantly affecting the quality of the human environment and thus issue a Finding of No Significant Impact for this project.