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
(DESIGN & CONSTRUCTION)6

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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**).

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).

SH 121 is currently under construction as a six-lane controlled access facility with three-lane frontage roads. Although the mainlanes of SH 121 are proposed for tolling, 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.

CHAPTER 1: NEED AND PURPOSE FOR THE PROJECT

For the previously State approved non-toll SH 121 facility, the original need for SH 121 roadway improvements is responsive to considerable on-going growth of commercial and residential development along and near the SH 121 corridor that has and will continue to produce a major travel demand on this transportation system. The original purpose of SH 121 is to improve system linkage and mobility in the area.

The proposed implementation of tolling on SH 121 would support the original need for and purpose of the SH 121 facility by generating revenue for the operation and maintenance of SH 121 as well as funding additional near neighbor/near timeframe policy projects.

Under the Regional Transportation Council (RTC) of the North Central Texas Council of Governments (NCTCOG) near neighbor/near timeframe policy, when a previously planned tax supported highway is designated as a toll facility, the gas tax funds would be reallocated to projects that serve the same transportation system users, and the newly identified projects will be completed in comparable timeframes. The accelerated construction of additional transportation projects would also further 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 toll implementation and near neighbor/near timeframe projects in further detail.

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.

Project History

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** describes additional SH 121 corridor projects.

Construction Update

Portions of the SH 121 mainlanes are estimated to open in June 2006. **Table 1-1** outlines the most recent construction status of this project. The following projects were state funded.

Table 1-1*: Construction Update

CSJ Number	Limits	Current Status	Estimated Percent Work Complete (%)
3547-03-003	**Mainlanes -** 0.23 mile west of Business SH 121 to Denton/Dallas County Line	**Under Construction** Estimated Cost: $18.5 million	95%
3547-02-004	**Mainlanes** - Denton/Dallas County Line to Dallas/Denton County Line	**Under Construction** Estimated Cost: $15.7 million	95%
3547-01-005	**Mainlanes** - Dallas/Denton County Line to MacArthur Blvd.	**Under Construction** Estimated Cost: $8.97 million	95%
3547-03-002	**Frontage Roads** - 0.23 mile west of Business SH 121 to Denton/Dallas County Line	Complete	100%
3547-02-003	**Frontage Roads** - Denton/Dallas County Line to Denton Tap Road	Complete	100%
3547-02-001	**Frontage Roads** - Denton Tap Road to Dallas/Denton County Line	Complete	100%
3547-01-001	**Frontage Roads** - 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.

Toll Funding Initiatives

On August 12, 2004, the RTC of the NCTCOG approved the *Texas Metropolitan Mobility Plan* which includes this project as a toll facility and identifies the need for toll equity, which also state funds to be combined with other funding sources to finance toll facilities. The *Texas Metropolitan Mobility Plan* includes a framework for the allocation of future excess toll revenue in the North Central Texas region called the *Toll Revenue Sharing Policy*. This policy outlines the circumstances under which excess toll revenue would become available and distributed in the region. In the foreseeable future, the proposed SH 121 toll facility could substantially benefit communities in the project area by generating revenue for additional transportation projects that could also improve system linkage and mobility in the area. Copies

of the subsequent NCTCOG resolutions approving the *Texas Metropolitan Mobility Plan* are included in **Appendix B**.

In cases such as SH 121 where a previously planned tax supported highway is programmed to a toll facility, the funds that are released are committed to projects along that same corridor using the 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 will be reallocated to projects that serve the same transportation system users, and the newly identified projects will be completed in comparable timeframes. A detailed discussion of SH 121 near neighbor/near timeframe projects is in **Chapter 2**.

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

Public Involvement for the Proposed Toll Facility

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
Performing Arts Center
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 hearings were held in the cities of Coppell and The Colony to inform the public of the proposed toll facility and to solicit public comments regarding the environmental documents and conceptual toll plan. These hearings were held at the following locations:

January 17, 2006
Coppell Middle School-North Cafeteria
120 Natches Trace
Coppell, Texas 75019

January 24, 2006
The Colony High School
Performing Arts Center
4301 Blair Oaks
The Colony, Texas 75056

Approximately 87 citizens and four elected officials attended the hearings. Drawings of the conceptual toll plan were available for public review during the open house periods from 6:00 p.m. to 7:00 p.m. The conceptual toll plan depicted the layout of the proposed facility, toll gantry locations, signage, and proposed noise barriers. The open houses were followed by formal presentations discussing the local, federal, and state relationships concerning the project, technical design, environmental issues, project schedule, and the ROW acquisition procedures and relocation assistance program. After a 20-minute recess, the hearings were open to public comments. A total of 22 people made verbal comments. A total of 19 written comments were also received during the public comment period. Issues of concern included noise barriers, air quality, potential impacts on low income residents, alternative non-toll routes, potential impacts to local economic development, and privatized toll funding. Public meeting and public hearing summaries are available for review at the TxDOT Dallas District located at 4777 E. U.S. 80, Mesquite, Texas 75150.

B.2 Related Studies and Relevant Documents

As previously noted, the RTC approved the limits of this SH 121 project as a toll facility. **Appendix A: Figure 1B** and **Table 1-2** depict the environmental history for the SH 121 corridor from 0.23 mile west of Business SH 121 to U.S. 75.

Table 1-2*
SH 121 Environmental History

Project Number*	Limits	Approval Date	Status
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	*Environmental Assessment* 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.
4	SH 121/IH 35E Interchange: East of MacArthur Blvd. to East of IH 35E	*Environmental Assessment* 04/13/1990 (FHWA FONSI) *EA Re-Evaluation* 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	*Environmental Assessment* 11/22/1991 (FHWA FONSI) *Notice of Continuous Activity* 05/25/1999 (FHWA Approval) *EA Re-Evaluation* 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.

- **Indirect and Cumulative Impacts:** Indirect impacts were identified as those impacts that differ from those directly associated with the construction and operation of the proposed toll facility itself and are often caused by induced development that may indirectly result from the improvement to the transportation facility. The

indirect impacts discussed include increased traffic through adjacent neighborhoods, increased congestion along frontage roads, and impacts to bus stops and route times. Two major themes of cumulative impacts were discovered during analysis: land use impacts and socio-economic trends involving low-income and minority populations.

B.4 Issues Eliminated from Further Study

The widening of SH 121 is currently under construction. The following issues were eliminated from further study since the proposed tolling of the facility would not change the footprint of the roadway. Additional ROW is not required and there are no design changes.

Cultural Resources

The previous State FEIS included cultural resources surveys of the area of potential effects (APE). It was concluded that no properties 50 years of age or older were identified within the APE, which is defined as the ROW, both for this EA and for the previous coordination in 1996. The proposed tolling of SH 121 does not warrant additional coordination with the Texas Historical Commission (THC) as the toll gantries being introduced are not considered a major design change that will cause a significant visual impact. 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 for the proposed tolling of SH 121; 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

The project lies within the 100-year floodplain of Denton Creek. The proposed project is located on the (FEMA) Flood Insurance Rate Map (FIRM) Map Number 48121C0545F

(**Appendix A: Figure 2)**. The hydraulic design of the current roadway improvements is in accordance with current TxDOT and FHWA policy standards. The proposed tolling of SH 121 would not increase the base flood elevation to a level that would violate applicable floodplain regulations and ordinances.

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 would be no hazardous material impacts from the implementation of tolling on SH 121.

Waters of the U.S., Including Wetlands

The State FEIS originally stated that no impacts to waters of the U.S., including wetlands in the project area. Tolling SH 121 would not impact waters of the U.S. or wetlands. Coordination with the U.S. Army Corps of Engineers (USACE) is not required.

The SH 121 improvements that are currently under construction comply with the Clean Water Act Section 401 Water Quality Certification requirements with one best management practice from each of the three Tier I categories. For example, these 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 tolling would not impact any public facilities or services, because no access changes are associated with the proposed tolling of SH 121.

Relocations and Displacements

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

Section 4(f) Properties

There are no Section 4(f) properties impacted by the proposed tolling of SH 121. 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.

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.

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.

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 and Denton Counties are 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

This section of SH 121 does not cross any lakes, rivers or streams. A navigational clearance under Section 9 (administered by the U.S. Coast Guard [USCG]) of the 1946 Bridge Act 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.

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. The current construction of SH 121 did not warrant coordination with TCEQ for total maximum daily loads. The proposed tolling of SH 121 would not warrant coordination with TCEQ 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 because of 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 the current construction of SH 121 is disturbing more than one (1) acre, TxDOT is complying with the TCEQ - Texas Pollutant Discharge Elimination System General Permit for Construction

Activity. Also, the construction is disturbing more than five (5) acres; therefore, a Notice of Intent has been filed to comply with TCEQ stating that TxDOT would 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 would be minimized by avoiding work by construction equipment directly in the stream channels and/or adjacent areas. No long-term water quality impacts are expected as a result of the proposed project. The proposed tolling would not required additional coordination with the TCEQ.

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.

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.

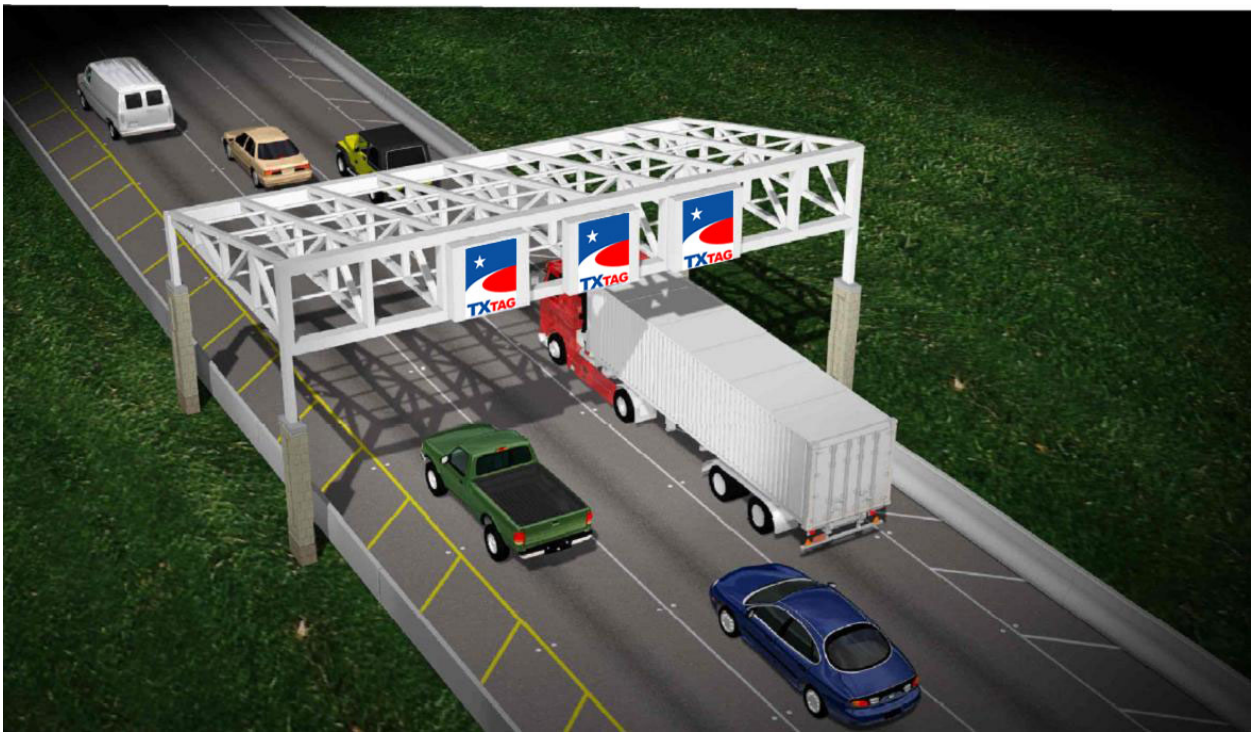
C. Detailed Description of Project Alternatives

C.1 Toll Alternative

Toll Implementation

The concept of an electronic toll collection system is proposed for SH 121. As currently conceived, tolls would be collected using a completely electronic system; the system would not be able to accept cash. With an electronic toll collection concept, tolls would be collected through toll gantries positioned at certain mainlane and ramp locations. **Figure 2-1** is an artist rendering of a typical mainlane toll gantry. Proposed mainlane and ramp gantry locations for this project are depicted in **Figure 2-2** and **Appendix C: Conceptual Toll Plan**.

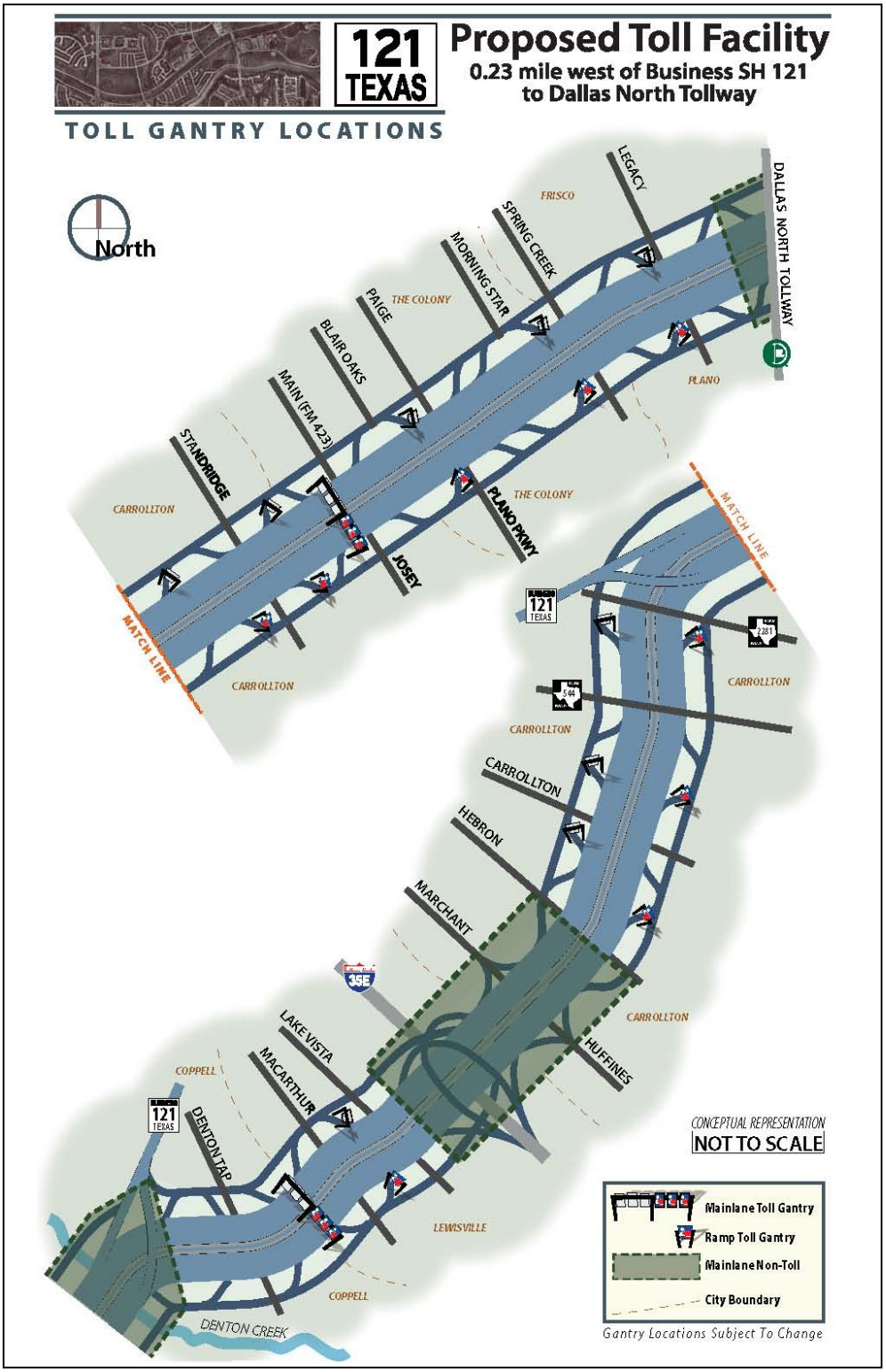
FIGURE 2-1: MAINLANE TOLL GANTRY



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. The estimated cost of implementing the tolling components is $30 million as calculated on a per mile basis by the Texas Turnpike Authority (TTA). **Figure 2-2** provides the proposed toll gantry locations along SH 121.

FIGURE 2-2

PROPOSED SH 121 TOLL GANTRY LOCATIONS

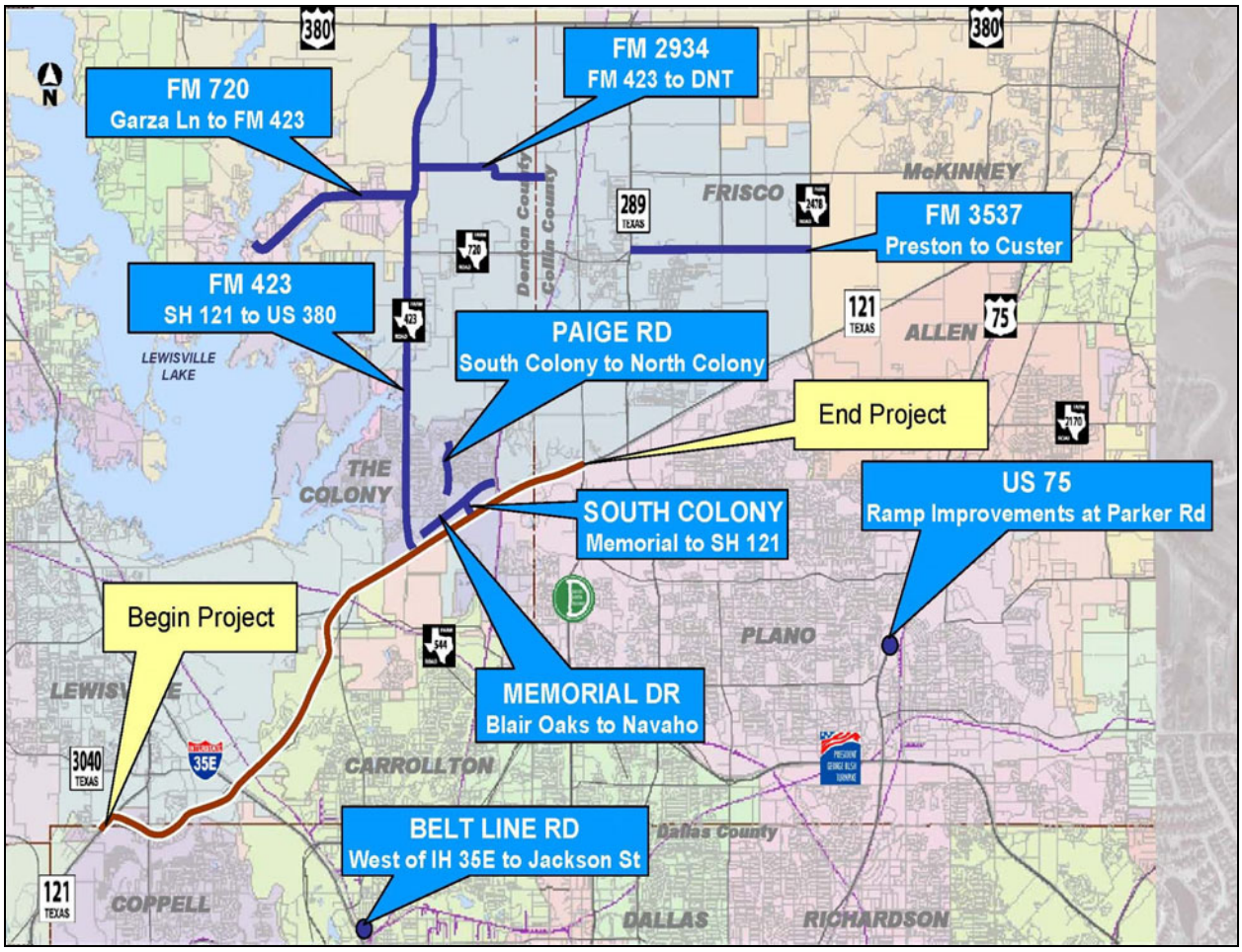


Near Neighbor/Near Timeframe Projects

Under the RTC's near neighbor/near timeframe 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. 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**).

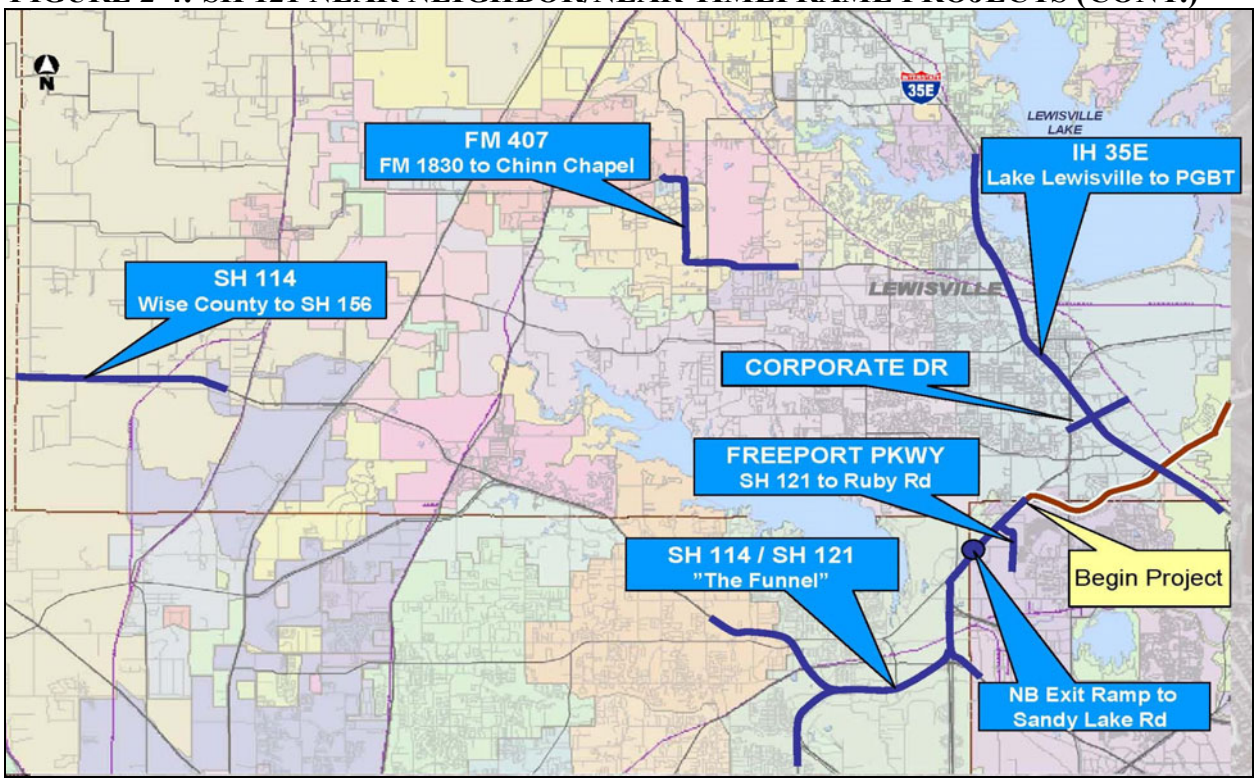
By partnering together, state and local officials can leverage additional state transportation funds, freeing existing allocations for critical, but otherwise unbudgeted, safety, capacity and air quality projects. This shift allows new projects that were originally budgeted through gasoline tax revenue, such as SH 121, to be built or opened as toll facilities to generate revenue. This revenue would then be used to build additional transportation facilities with accelerated construction schedules. By leveraging the tax supported 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. The following figures (**Figure 2-3, Figure 2-4)** depict near neighbor/near timeframe projects proposed to be funded by tolling SH 121. None of these projects are proposed to be tolled.

FIGURE 2-3: SH 121 NEAR NEIGHBOR/NEAR TIMEFRAME PROJECTS



- FM 720: From 0.2 mile west of Garza Lane to 0.1 mile west of FM 423
- FM 423: From SH 121 to US 380
- FM 2934: From FM 423 to the DNT
- FM 3537: From SH 289 (Preston Road) to FM 2478 (Custer Road)
- Paige Road: From South Colony Boulevard to North Colony Boulevard
- Memorial Drive: From Blair Oaks to Navaho
- South Colony Boulevard: From Memorial Drive to SH 121
- Us 75 Ramp Improvements at Parker Road
- Belt Line Road: From Jackson Road to 1,000 feet west of IH 35E

FIGURE 2-4: SH 121 NEAR NEIGHBOR/NEAR TIMEFRAME PROJECTS (CONT.)



- SH 114: From 0.3 mile east of Wise/Denton County Line to 2,100 ft. west of FM 156
- FM 407: From FM 1830 to Chinn Chapel Road
- IH 35E from Lewisville Lake to President George Bush Turnpike
- Corporate Drive
- Freeport Parkway: From SH 121 to Ruby Road
- Northbound Exit Ramp to Sandy Lake Road
- SH 114/SH 121 "The Funnel": From BU 114 to BU 121

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 funds would not be reallocated.

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.

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

NOTE: primary consideration is given to exterior areas (Category A, B or C) 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 3-1** 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 3-1
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 Apartments	E	52	50	52	2	Y
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 at Silver Creek Town Homes	B	67	68	70	2	Y

As indicated in **Table 3-1**, the proposed project would result in traffic noise impacts 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 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 barriers: this is the most commonly used noise abatement measure. Noise barriers were evaluated for each of the impacted receiver locations.

Based on the toll traffic numbers and development adjacent to SH 121 after the previously approved noise analysis was performed, noise barriers would be feasible and reasonable. As listed in **Table 3-2**, noise barriers would be feasible and reasonable for the following impacted receivers and, therefore, are proposed for incorporation into the project. Any subsequent project design changes beyond the scope of tolling 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.

TABLE 3-2
NOISE BARRIER PROPOSAL (preliminary)

Barrier	Representative Receivers	Total # Benefited	Length (feet)	Height (feet)	Total Cost	$/Benefited Receiver
1	R1 Coppell Greens Subdivision	25	3,000	5 ft. Main Lane Noise Barrier	$270,000	$10,800
2	R2, R3 Magnolia Park Subdivision	19	2,200	8 ft. NB Main Lane Noise Barrier	$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 Barrier	$576,000	$19,862
4	R4 & R11 Enclaves of Silver Creek & Villas of Vista Ridge	17	1750	8 ft. SB Main Lane Noise Barrier	$252,000	$14,823

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.

LAND USE	IMPACT CONTOUR	DISTANCE from RIGHT of WAY
Residential	66 dBA	400 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

Conformity Under Clean Air Act

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 proposed North Central Texas project is in Denton and Collin Counties, which is part of EPA's designated eight-hour, nine county non-attainment area for the pollutant ozone, the transportation conformity rule applies. The proposed SH 121 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, and the 2004-2006 Transportation Improvement Program (TIP). The MTP and the 2004-2006 TIP were found to conform by the US DOT (FHWA/FTA) to the Clean Air Act, as amended on June 16, 2005. Additionally, the project comes from an operational congestion management system that meets all requirements of 23 CFR Highways, Parts 450 and 500. The proposed action is included in the 2006-2008 Statewide Transportation Improvement Program (STIP).

Analytical Approach

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_3). 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 3-3**.

TABLE 3-3
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 NAAQS for CO is 35 ppm for one hour and 9 ppm for eight hours. Analysis includes a one hour background concentration of 3.7 ppm and an eight hour background concentration of 2.3 ppm.

Mobile Source Air Toxics (MSAT)

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

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

The EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources. 66 FR 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the Clean Air Act.

In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in VMT, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent. As a result, EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(l) that will address these issues and could make adjustments to the full 21 and the primary six MSATs.

The analysis of air toxics is an emerging field. The U.S. Department of Transportation (DOT) and EPA are currently working to develop and evaluate the technical tools necessary to perform air toxics analysis, including improvements to emissions models and air quality dispersion models. The MOBILE6.2 emissions factor model can generate MSAT emissions factors; however limitations with the existing modeling tools preclude performing the same level of analysis that is typically performed for other pollutants, such as carbon monoxide. FHWA's

ongoing work in air toxics includes a research program to determine and quantify the contribution of mobile sources to air toxic emissions and the assessment of scientific literature on health impacts associated with motor vehicle toxic emissions.

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

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 3-4.**

TABLE 3-4
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 roadway expansion project would be justified.

C. Socio-Economic Impacts

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 [1] 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 *Census 2000*, 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 3-5**. 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 3-5: 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
Study Area	**14,930**	**3,434**	**23.0**	**11,138**	**74.6**	**358**	**2.3**

Source: U.S. Census Bureau, *Census 2000.*
*Census Tract (CT), Block Group (BG)

[1] Collin County, Dallas County, Denton County, Ellis County, Henderson County, Hunt County, Kaufman County, and Rockwall County.

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

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.[2] 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.[3] 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 3-5**, 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 16.2 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.

[2] North Central Texas Council of Governments. *North Central Texas 2030 Demographic Forecast.* DFWinfo.com.
[3] 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. The implementation of the proposed tolling facility would not affect, 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 3-6** 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 and hearings. 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 3-6
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
Total Study Area	**13,532**	**211**	**1.5**

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).[4]

Low income is defined as a household income at or below the Department of Health and Human Services poverty guidelines.[5] 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 2006, the weighted average threshold for a four person family is $20,000.

A comparison of median household income and poverty status is shown in **Table 3-7**. 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.

[4] 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.
[5] *Ibid.*

Table 3-7
Median Household Income and Poverty Status: 1999

Area/Census Block Group	Population*	Median Household Income	Persons Below Poverty Level	
			Number	Percent
City of Coppell	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
Total Study Area	**14,884**	**N/A**	**459**	**3.0**

***Population for whom poverty status has been determined.**
Source: U.S. Census Bureau. *Census 2000.* http://factfinder.census.gov.

As shown in **Table 3-7**, 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.

Non-toll facilities would be available to low-income populations via frontage roads and arterial roadways (i.e. Business SH 121, Hebron Parkway, Memorial Drive Expansion project). The use of frontage roads may result in a difference in time travel due to a lower posted speed limit and signalization. Travel time data would not be available until further traffic and revenue studies are completed.

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.[6] 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

[6] 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.

percentage of the population that is minority and/or low-income within the same city. **Table 3-8** contains the racial and ethnic population for the project area.

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.

Table 3-8
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%
Total Study Area	**14,930**	**12,003 80.3%**	**866 5.8%**	**82 0.5%**	**1,217 8.1%**	**0 0.0%**	**1,222 8.1%**	**3,387 22.6%**

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

No displacements would be required because of toll implementation. 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. While individual minority and/or low-income persons may be adversely affected by the proposed project, implementation of the proposed project would not result in disproportionately high and adverse impacts to minority or low-income populations.

Toll Pricing and Non-toll Alternatives

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 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.

Conclusion

Based on the data gathered and analysis presented in this section, there does not appear to be disproportionate or adverse impacts to any minority and/or low-income populations as a result of the implementation of the proposed project. No economic justice communities have been identified within the study area based on the income and minority population analysis previously presented in this discussion. Although some minimal effects of tolling SH 121 may occur for roadway users within the corridor, it is unlikely that the tolling SH 121 would result in adverse socio-economic impacts to low income or minority residents of the study area.

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 minimize glare and ambient lighting for future adjacent residential development.

E. Indirect and Cumulative Impacts

The Council on Environmental Quality (CEQ) defines indirect 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 project 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.

In order to conduct the cumulative impact analysis, it was essential to build on information derived from the direct and indirect impacts analyses. Unlike direct impacts, quantifying cumulative impacts may be difficult, since a large part of the analysis requires an eye to the future and what may happen in a project area. The methodology for the proposed project's cumulative impact analysis was approached by first identifying resources to consider in the analysis. **Table 3-9** summarizes the resources considered during direct, indirect, and cumulative analysis.

TABLE 3-9
SUMMARY OF INDIRECT & CUMULATIVE IMPACT ANALYSIS

Potential Impact	Category of Impact		
	Direct	Indirect	Cumulative
Increase in noise levels	X		
Degradation of regional air quality	X		
Visual and lighting impacts – increase in glare and/or ambient lighting	X		
Increased traffic through adjacent neighborhoods		X	
Congestion along frontage roads		X	
Public transit – impacts to bus stops and route times		X	
Increased/continued land development in surrounding area		X	X
Socio-economic conditions – impacts to minority and low-income groups			X
Addition of infrastructure improvements			X
Funding of near neighbor/near timeframe project		X	
Future additional capacity associated with near neighbor/near timeframe projects			X

Each of the resources identified in **Table 3-9** were analyzed in such a way that each resource represented a unique geographic affiliation, ranging from immediate adjacency to regional study areas. The historical context and current health of each resource was also considered during the evaluation of impact selection.

Indirect impacts were identified as those impacts that differ from those directly associated with the construction and operation of the proposed toll facility itself and are often caused by induced development that may indirectly result from the improvement to the transportation facility. The indirect impacts discussed in detail below include increased traffic through adjacent neighborhoods, increased congestion along frontage roads, and impacts to bus stops and route times.

The proposed project's cumulative impacts were narrowed down by carrying forward the direct and indirect impacts that may contribute to a cumulative impact. Two major themes discovered during analysis of cumulative impacts were: land use impacts and socio-economic trends involving low-income and minority populations.

The following sections describe both the indirect and cumulative impacts derived from the analysis. Because of the uncertainties associated with the future forecasting of land development, travel patterns, and socio-economic trends, quantitative assessment of the effects of these impacts cannot be made at the project level. Resources such as zoning maps, future land use maps, *Census 2000* data, public transit plans, and the MOU outlining the SH 121 Funding Strategy allowed for the establishment of quantitative assumptions which were utilized to develop the findings discussed in the following sections. Given the predictive nature of indirect and cumulative impacts, it must be stated that qualitative assumptions were predominantly relied upon during analysis. Various qualitative assumptions used during analysis included anticipated travel patterns, increase of non-toll traffic distribution along frontage roads, recognized limitations to access for the economically disadvantaged, and willingness to drive along the non-tolled alternative routes.

Indirect Impacts

Tolling SH 121 may create some indirect social and economic impacts that result indirectly from the proposed improvements to the existing roadway. This corridor was previously planned, is currently under construction and any anticipated land use changes would occur regardless of the proposed tolling. However, it is anticipated that development opportunities would continue to increase within the study area if the proposed tolling facility is implemented. Undeveloped areas within and surrounding the project area would likely be developed primarily for residential and commercial use, particularly those areas serviced through future implementation of the near neighbor/near timeframe projects (See **Figures 2-3 and 2-4**). The projects listed in Figures 2-3 and 2-4 would be indirect impacts of tolling SH 121 because they would receive at least some of the revenue generated by the SH 121 toll facility. These areas include the cities of Coppell, Lewisville, The Colony, Grapevine, Carrollton, Frisco and Plano.

A likely indirect impact involves an increase of traffic through neighborhoods as a result of motorists trying to avoid the toll. The project is not expected to divert traffic through neighborhoods, as existing adjacent residential developments do not front arterial roadways that would provide links from the SH 121 facility to alternative routes. The majority of adjacent

residential roadway systems tend to impede through-traffic due to their inherent design. Another factor to consider is the orientation of the SH 121 facility itself. The existing SH 121 facility is situated in a diagonal direction, generally southwest to northeast. While other major alternative routes exist for this facility, the use of immediately adjacent residential street routes is not an efficient means for travelers to avoid the tolled mainlanes of SH 121 (See **Appendix A: Figure 1B**).

The potential for increased congestion along frontage roads over time as the traffic demand for the non-toll option increases is also an indirect impact. The implementation of the proposed toll facility is anticipated to increase non-toll traffic demand along the frontage roads. This increase in demand along frontage roads may adversely affect travel time and access to adjacent businesses; however, impacts to public transit stops and route times is not anticipated because the area is not currently serviced by local public transit authorities such as DART (Dallas Area Rapid Transit) or the DCTA (Denton County Transportation Authority).

Cumulative Impacts

As identified in **Table 3-9**, two themes of cumulative impacts emerged from the indirect and cumulative analysis: land use impacts and socio-economic trends involving low-income and minority populations.

Cumulative impacts from roadway projects are usually associated with areas of land that may change from their previous land use. The extent that tolling SH 121 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, zoning regulations, 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.

Existing zoning and future land use plans produced by municipalities in proximity to the SH 121 corridor reveal commercial/industrial (mixed intensities), residential (both single and multi-family), and general business development as the main drivers of land development adjacent to the SH 121 facility. While the rate of population immigration and physical development in this area of North Texas has been quite high during the last decade compared to state and national trends, municipalities such as Frisco and Lewisville still maintain the potential to continue development as long as vacant parcels are available for conversion to residential, commercial, or industrial land uses. Cities such as Frisco and Lewisville have collectively

decided to allow for future development of vacant land along the SH 121 corridor through the establishment of zoning regulations and future land use plans.[7]

The construction or improvements of the near neighbor/near timeframe projects would also influence the continued development of the areas they are intended to service, such as the cities of Grapevine, The Colony, Plano, and Carrollton. The MOU outlines the agreement regarding the SH 121 funding strategy and provides sufficient details of the proposed state highway system improvements. As discussed in **Chapter 2**, the near neighbor/near timeframe projects would be funded by the reallocation of the traditional funding of SH 121. The improvements made to the systems illustrated in **Figures 2-3** and **2-4** are also expected to maintain or increase development opportunities in the areas for which they provide access. Documented examples (MOU) of the toll-free near neighbor/near timeframe projects that have foreseeable potential to stimulate land development include:

- **FM 423: from SH 121 to U.S. 380**. TxDOT/NCTCOG agreed to make every effort possible to accelerate FM 423 letting to permit it to be open to traffic near FM 720 completion and coordinate with the northern FM 423 segment. The City of The Colony would benefit from the construction of FM 423.
- **FM 2934: from FM 423 to the Dallas North Tollway**. TxDOT agrees to fund 100% of the construction costs for widening the existing two-lane facility to a six-lane divided facility. The City of Frisco would benefit from the widening of FM 2934.
- **FM 407: from FM 1830 to Chinn Chapel Road**. TxDOT/NCTCOG agreed to fund 90% of ROW and 100% of construction of this project to let FM 407 by 2006. Residents of Denton County would benefit from this proposed project.
- **Corporate Drive**. NCTCOG agrees to fund $8 million towards this local project. The City of Lewisville would benefit from this project and has agreed to fund the local match.

Over the last few years, the idea of user-fee based roadways has been growing in popularity and acceptance. Historically, TxDOT has financed highway projects on a "pay-as-you-go" basis, using motor fuel taxes and other revenue deposited in the State highway fund. However, population increases and traffic demand have outpaced the efficiency of this traditional finance mechanism.[8] As funding mechanisms evolve, the trend towards utilization of

[7] City of Frisco, Texas. *Future Land Use Plan*, January 2006. http://www.ci.frisco.tx.us/
City of Lewisville, Texas. *Official Zoning Map*, 2006. http://www.cityoflewisville.com/
[8] North Central Texas Council of Governments. *Mobility 2025: Amended 2005*. http://www.nctcog.org/

tolling facilities in this region may through time create "user impacts" as access to highway systems becomes an issue to the economically disadvantaged.

Cumulative impacts of tolling on low-income and minority populations is difficult to predict; however, tolling of the SH 121 mainlanes would be unlikely to result in disproportionate or adverse effects on minority and/or low-income populations as no environmental justice communities have been identified immediately within the study area. The populations located within the study area represent some of the higher median household incomes and lower poverty rates in the state of Texas, if not the nation. The SH 121 frontage roads would be non-tolled and would provide an alternative route for those who do not want to utilize the tolled mainlanes.

Existing tolling systems that factor into the cumulative impacts of the proposed tolling project include the DNT and the President George Bush Turnpike (PGBT). Linkage to these tolling systems would be available to users of SH 121 as well as the non-tolled alternatives associated with those existing toll facilities. Other foreseeable tolling projects in the area include the northward expansion of DNT from Gaylord Parkway to U.S. 380, construction of the Lake Lewisville Bridge, and managed lane improvements along the IH 635 corridor. The construction of Southwest Parkway, currently under consideration which would expand SH 121 from IH 30 to FM 1187, includes portions of tolled roadway. The RTC is also considering the tolling of SH 121 throughout Collin County. However, those who choose to avoid these toll systems would have the standing option to utilize either non-tolled frontage roads or alternative arterial roadways.

Some beneficial cumulative impacts may include the addition of infrastructure improvements constructed to support the increased development and commerce associated with SH 121 and economic growth in the immediate area. The future added capacity associated with the toll-free near neighbor/near timeframe projects would provide mobility and relieve traffic congestion for all motorists using the systems funded by the proposed tolling of SH 121. The near neighbor/near timeframe projects would comply with all applicable federal, state, and local requirements. If applicable, NEPA documentation would be prepared for the near neighbor projects.

F. Summary Comparison of Potential Effects

Table 3-10 summarizes and compares the potential effects of the toll and non-toll alternatives on relevant issues.

TABLE 3-10
Summary and Comparison of Effects of Alternatives on Relevant Issues

Issue	Non-Toll Build	Toll Build
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.
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 SH 121 would result in disproportionate or adverse socio-economic impacts to those roadway users or residents of the study area. However, potential individual user impacts in the form of limited access to the area's toll facilities do exist for economically disadvantaged individuals. The frontage roads remain as a non-tolled alternative to all motorists.
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.
Indirect and Cumulative Impacts	No change from the previously approved State FEIS and current construction status.	Evaluated indirect impacts include: increase of traffic through adjacent neighborhoods as a result of motorists trying to avoid the toll, potential for increased congestion along frontage roads, and impacts to public transit stops and routes along the SH 121 corridor. Two main themes discussed during cumulative analysis are land use impacts and socio-economic trends involving low-income and minority populations.

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. Two public meetings and two Public Hearings were conducted to inform the public about the proposed tolling of SH 121, gauge local support/opposition, and ensure that all relevant issues have been addressed in the EA.

B. Mitigation and Monitoring Commitments

Noise barriers 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.