STATE ENVIRONMENTAL ASSESSMENT

STATE HIGHWAY 121

FROM STATE HIGHWAY 5 TO CR 635 (FANNIN COUNTY LINE)

CSJ: 0549-03-018, 0549-03-021

COLLIN COUNTY, TEXAS

CITY OF MELISSA

CITY OF ANNA

TEXAS DEPARTMENT OF TRANSPORTATION

September 2011

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1.0 INTRODUCTION

This Environmental Assessment (EA) is prepared in accordance with Title 23 of the Code of Federal Regulations (23 CFR) §771.105, 23 CFR §771.119, and 40 CFR §1502, and provides sufficient information to allow the Texas Department of Transportation (TxDOT) to determine whether an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI) is appropriate. This EA has been prepared utilizing the Federal Highway Administration (FHWA) Technical Advisory T6640.8A and the TxDOT Environmental Manual as guidance.

The proposed improvements include widening the roadway from a two-lane rural highway to a four-lane divided highway. The proposed project length is 14.3 miles. The limits of the proposed project on State Highway (SH) 121 are from SH 5 in Melissa, Texas in northeast Collin County to County Road (CR) 635 (Fannin County line). The highway passes through two incorporated cities, Melissa and Anna. The following maps are attached:

- Proposed Project Vicinity Map (**Figure 1**)
- USGS Quadrangle Map (**Figure 2**)
- Aerial and Photo Location Map (**Figure 3**)
- Typical Sections (**Figure 4**)
- Sensitive Receiver Map (**Figure 5**)
- Indirect Impacts Area of Influence (AOI) (**Figure 6**)
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The design schematic encompassing the proposed improvement is available for inspection in the Collin County TxDOT Area Office, located at 2205 S. State Highway 5, McKinney, Texas 75069 and at the TxDOT Dallas District located at 4777 East Highway 80, Mesquite, TX 75150.

The existing roadway limits in Melissa, Texas consists of a 2-lane divided rural section with 12-foot (ft) wide travel lanes, 10-ft wide outside shoulders, 8-ft wide inside shoulders and a variable width median. A 14-ft wide center median exists north of SH 5 to Liberty Way, with two 12-ft lanes and 10-ft outside shoulders. From Liberty Way to 3,000 ft north of FM 2933 the median is 12-ft wide with 6-ft wide outside shoulders. From the intersection of SH 121 and County Rd 418/FM 2933 to the end of the proposed project, there are 10-ft wide outside shoulders and no median. The total width of pavement goes from 58 ft to 48 ft to 44 ft wide (see **Figure 4**). The usual right-of-way (ROW) is 120-ft wide but widens up to 270 ft wide to accommodate intersections. The posted speed limit along SH 121 is 45 miles per hour (mph) within the Melissa city limits and 60 mph outside Melissa city limits.

2.0 PROPOSED ACTION

2.1 Proposed Project

The proposed project would involve the widening of the existing two-lane roadway to a four-lane divided highway. The proposed roadway would include 12-ft and 14-ft wide travel lanes and a 40-ft wide grass median. From SH 5 to 3,300 ft north of CR 420, the section would be an urban curb-and-gutter section with no shoulders. From 3,300 ft north of CR 1220 (future Outer Loop location) to CR 635 (Fannin County line), the proposed project would be a rural, four-lane divided highway, containing 12-ft wide travel lanes, 10-ft wide outside shoulders, 4-ft wide inside shoulders, a 40-ft wide grass median, and grass-lined ditches. The proposed project includes 6 bridges. Each of the existing bridges will be replaced and 6 new bridges will be built parallel to the existing bridge locations due to the divided highway. One of these bridges crosses over Dallas Area Rapid Transit (DART) ROW. The design speed would be 45 mph within the urban section and 60 mph within the rural section. The total proposed project length is 14.3 miles.

Within the urban section of the proposed roadway, a 6-ft wide reserved, graded area (berm) outside of the roadway (see **Figure 4, Typical Sections**) is designed to accommodate future sidewalk construction. Bridges constructed in the urban section would include 12-ft and 14-ft wide travel lanes and 6-ft sidewalks. The one 14-ft wide lane would accommodate bicycles. The northbound and southbound travel lanes would be separated by 44 ft. The northbound lanes will be constructed in approximately the same location as the existing bridge. Sidewalk ramps, compliant with the Americans with Disabilities Act (ADA), would be constructed as part of this proposed project. The culvert structures and bridge structures would be removed and reconstructed throughout the project.

Within the rural area a rural type design is proposed. There are no curb and gutters in this project area and it is not within an urban area. There is no existing bicycle or pedestrian accommodations. The existing and proposed project has open grass lined ditches. Therefore, pedestrian facilities are not provided. Throughout the project length, 4 -12 foot shoulders are being provided that could be utilized as bicycle facilities (see **Figure 4, Typical Sections**).

2.2 Need and Purpose

The proposed project is needed due to limited mobility, traffic congestion, population growth, and safety concerns associated with the functional deficiencies with narrow bridges and with the narrow roadway and limited shoulder width to accommodate vehicles during emergencies. Cross drainage and driveway culverts are not safety end treated and bridge railings do not meet current design standards. The purpose of the proposed project is to improve mobility, decrease traffic congestion, accommodate population growth, and enhance safety for the traveling public by providing additional travel lanes.

The North Central Texas Council of Governments (NCTCOG) projects that Collin County would have 1,166,645 residents in the year 2030, representing a 130 percent population increase from the 2000 population of 492,276. The populations of the cities of Melissa and Anna and unincorporated areas of Collin County have grown dramatically in recent decades due largely to suburban development of the metropolitan area. SH 121 functions as a major northeast-southwest link between northeast Collin County and other metropolitan Cities including McKinney, Frisco, Grapevine, and Irving. Population growth and urbanization are expected continue along the SH 121 route, resulting in increased future traffic demands.

According to the TxDOT Transportation Planning and Programming Division traffic analysis for the study area, traffic demand is expected to increase by approximately 56 percent by 2030 due to increased urbanization in the area (see **Table 2**). Implementation of the proposed project is expected to substantially improve the current and future level of service (LOS). The concept of LOS uses qualitative measures to describe operational conditions within a traffic stream, and the perceptions of motorists and passengers. A LOS definition generally characterizes these conditions in terms of such factors as speed, safety, travel time, freedom to maneuver, comfort and convenience, and traffic interruptions. There are six LOS categories and each facility is assigned a LOS based on its traffic conditions. LOS are given letter designations, from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. The upper threshold for LOS E is considered the facility's maximum flow rate, or capacity. Traffic volumes above that threshold operate at a LOS F, with a breakdown in vehicular flow. Within the limits of the SH 121 proposed project, from SH 5 to CR 635 (Fannin County line), the LOS is D under the No-Build scenario. The proposed Build condition for year 2012 would have a LOS of B. The LOS for year 2030 is F under the No-Build scenario. The proposed Build condition for year 2030 would have a LOS of C.

2.3 Logical Termini and Independent Utility

2.3.1 Logical Termini

Additional travel lanes are proposed only between rational endpoints. A rational endpoint is typically a state or federal system roadway, although local thoroughfares may be substituted when a state or federal roadway is not appropriate. The construction limits for the proposed project are from SH 5 in Melissa, Texas to CR 635 (Fannin County line). SH 5 and CR 635 represent the logical termini for this project.

2.3.2 Independent Utility

The proposed project does not require additional transportation improvements to complete. The proposed project would be able to function on its own without further construction of an adjoining segment.

2.4 Alternatives

Two alternatives, which include the No-Build Alternative, were analyzed during the development of this environmental document. These alternatives are described below.

2.4.1 No-Build

Under the No-Build Alternative, the existing roadway would not be widened. The existing facility currently operates near its maximum capacity of traffic flow. The poor traffic conditions result from the heavy traffic volume on SH 121. The No-Build Alternative of the roadway in 2012 would be LOS D. These conditions are expected to worsen with time, as Collin County experiences continued residential and commercial growth. The No-Build Alternative would not remedy the existing traffic problems, and would allow for continued deterioration of traffic flow conditions.

Normal routine maintenance would continue. Typical maintenance that would occur includes the following:

- Seal coats and overlays (asphalt layer followed with rock aggregate)
- Minor rehabilitation (reworking the top of the roadway surface followed by an overlay
- Pavement edge repair

- Other activities, such as signing, striping, and patchwork

The No-Build Alternative would not meet the need and purpose for the proposed project.

2.4.2 Build

The Build Alternative would widen the existing roadway to a four-lane divided facility. The existing culvert structures and bridge structures would be removed and reconstructed throughout the project. The urban section would be a four-lane divided roadway with curb and gutter. The rural section would be a four-lane divided roadway with grass lined drainage ditches. The Build Alternative would meet the need and purpose of the proposed project by increasing mobility, decreasing congestion, and increasing safety. The Build Alternative is the preferred alternative. The proposed typical sections are illustrated in **Figure 4**.

2.5 Project Funding and Planning

This proposed CSJ: 0549-03-018 from SH 5 to east of FM 455 project is included in the fiscal year 2011-2014 Transportation Improvement Program (TIP) – 2011 Amendment. The proposed project is 100% State funded with Regional Toll Revenue (RTR) funds. TxDOT estimates indicate the project would let in November 2012 with an estimated construction completion date of November 2015. The total project cost is estimated to be approximately $44,573,825 as of February 2011. The appropriate MTP and Transportation Improvement Program (TIP) pages are located in **Appendix D**.

The proposed CSJ: 0549-03-021 from east of FM 455 to CR 635 (Fannin County Line) project is not currently funded for construction. Preliminary Engineering is 100% State funded with RTR funds. The total project cost is estimated to be approximately $45,680,010.

2.5.1 Local Government Support

A schematic encompassing the proposed improvements was provided to the city council of the City of Melissa and Collin County personnel for their review and comments. Approximately 15 meetings were held with the City of Melissa, City of Anna, and Collin County transportation officials, stakeholders and elected officials to discuss the proposed project. All elected and transportation officials support the proposed project and were integral in the design process.

2.6 Existing and Proposed ROW/Utility Adjustments

There is no control of access and none is proposed. The existing ROW width varies from approximately 120 ft wide to approximately 270 ft wide at a DART bridge. The typical proposed ROW width is 120 ft wide along the corridor. At the SH 5 proposed grade separated intersections the ROW is approximately 480 ft wide.

The urban section of the proposed road fits within the existing 120-ft ROW except at intersections, bridges, and a few other exceptions. In the rural section ROW would be taken from both sides of the roadway, but the majority of the widening to accommodate the new lanes would be to the north to CR 582. From CR 582 to the end of the proposed project, the widening would shift to the south side. The largest ROW acquisitions are at the major cross streets that are currently at grade and are proposed to be grade separated. The proposed project would require approximately 158 acres of new ROW. This acreage is abutting the existing ROW. The proposed ROW acquisition would occur on the northeast and southwest and both sides of the roadway throughout the proposed project.

Utilities located within the existing ROW include subterranean telephone cable, aerial transmission lines and subterranean water pipes. The adjustment and relocation of any utilities would be managed so that no substantial interruptions would take place while adjustments are being made. Plans for relocating any utilities would be provided by the appropriate utility provider and would occur according to standard TxDOT procedures.

There would be three commercial displacements and seven residential displacements associated with the Build Alternative. The TxDOT ROW Acquisition and Relocation Assistance Program would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended, in the Uniform Relocation Assistance Act of 1987. Relocation resources are available without discrimination to all residential and business facilities being relocated. Additional information is located in **Section 4.1.3**.

3.0 SURROUNDING AREA

3.1 Land Use

The surrounding terrain is level to gently rolling and contains predominantly rural areas. Approximately 80 percent of the land use within the proposed project is agricultural, either row crop or rangeland. Approximately 15 percent of the land use is residential, commercial or industrial. A small portion, approximately 5 percent, of the land use is vacant, not in agriculture. Approximately 158 acres would be transferred to transportation ROW.

Land use is changing from rural agricultural to suburban residential, retail, commercial, and industrial. This decreases mobility because traffic increases. The proposed project is anticipated to affect current or future land uses in the study area, and is consistent with local planning efforts.

3.2 Natural Setting

The topography in the vicinity of the proposed project area is generally level to gently rolling. The proposed project is located in the northeast portion of Collin County. The proposed project is located in the watershed of the East Fork Trinity River (Hydrologic Unit Code 12030106).

3.3 Public Facilities and Services

The proposed improvements would provide increased accessibility for this portion of Collin County to the various religious, educational, medical, and recreational facilities in the area. Emergency public services would have a more efficient facility to use in the performance of their various duties because of less congested roads. There are three churches near the proposed project area as listed in **Table 1** below. These facilities would remain accessible during construction of the proposed facility and at least one lane in each direction would remain open for the duration of the construction phase.

Table 1 Public Facilities and Services

Facility Type	Facility Name	Location	Distance from proposed ROW (mile)
Fire department	Melissa Fire Dept.	2210 FM 545, Melissa, TX 75454	.20 mi
Fire department	Westminster Fire and Rescue	311 E Houston, Anna, TX 75409	.90 mi

Police department	Melissa Police Dept.	901 SH 121, Melissa, TX 75454	.80 mi
Church	First Baptist Church	2600 SH 121, Melissa, TX 75454	.10 mi
Church	Grace Bible Fellowship Church	6177 FM 2933, Melissa, TX 75454	.60 mi
Church	Cross Roads Presbyterian Church	15642 SH 160, Blue Ridge, TX 75424	.10 mi

Source: *Google Earth (2009); f reconnaissance June 18, 2009*

3.4 Traffic

Table 2 depicts the existing and projected average daily traffic (ADT) for the SH 121 facility (TxDOT Transportation Planning and Programming (TPP), 2007) for the year of construction (2012), year 2032, and year 2042.

Table 2 Traffic Volumes

Location	2012 Projected Traffic Count (vpd)*	2032 Projected Traffic Count (vpd)	2042 Projected Traffic Count (vpd)
SH 5 to Berry Road	16,300	25,400	29,800
Berry Road to FM 545	13,400	20,900	24,600
FM 545 to CR 418	13,800	21,500	25,300
CR 418 to FM 455	13,400	20,800	24,500
FM 455 to FM 2862	12,700	19,800	23,300
FM 2862 to SH 160	7,100	11,000	12,900
SH 160 to East Line Road	8,200	12,800	15,100

**Vehicles per day (vpd)*
Source*: TxDOT TPP (2007)*

The proposed project would improve traffic conditions by increasing mobility, decreasing congestion and improving safety.

4.0 SPECIFIC AREAS OF ENVIRONMENTAL CONCERN

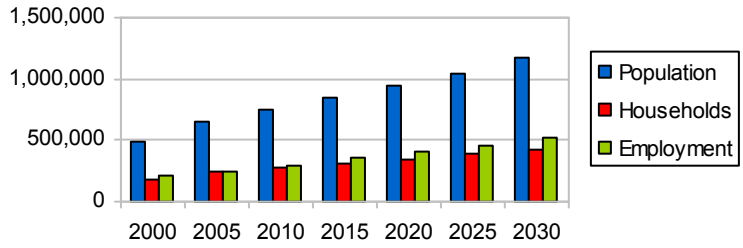
4.1 Socioeconomics

The proposed project is located in Collin County in the Cities of Melissa, Anna and Blue Ridge. The City of Melissa has grown from 557 residents in 1990 to 4,400 residents in 2009, a 690 percent increase in 19 years. The City of Anna has grown from 904 residents in 1990 to 8,100 residents in 2009, a 796 percent increase in 19 years. The City of Blue Ridge, located to the southwest of the proposed project, has grown from 521 residents in 1990 to 970 residents in 2008, an 86 percent increase in 18 years. This growth trend is expected to continue into the future. The NCTCOG projects that the City of Melissa population is projected to be 5,375 in the year 2030, representing a 22 percent increase from 2009. Similarly, Collin County's population was 764,500 in 2009, with a 1,166,645 population projected for 2030, representing a 53 percent increase.

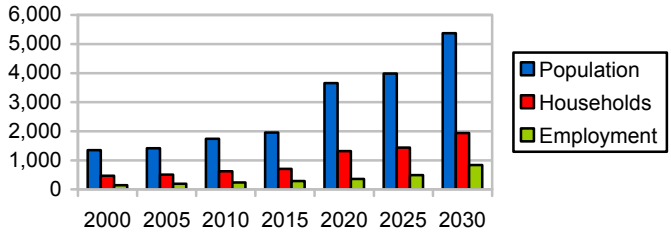
Table 3 depicts the past, present, and projected population within the proposed project vicinity.

Table 3 Regional and Community Growth

Collin County[1]							
Year	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**
Population	492,276*	652,498	749,343	844,515	938,681	1,046,919	1,166,645
Households	184,211*	241,931	276,980	311,901	346,593	386,321	431,137
Employment	204,057	246,912	292,533	352,732	403,178	456,658	517,264



City of Melissa[1]							
Year	2000	2005	2010	2015	2020	2025	2030
Population	1,349*	1,419	1,740	1,958	3,654	3,987	5,375
Households	472*	511	626	707	1,316	1,440	1,942
Employment	147	196	240	291	364	495	840



City of Anna[1]				
Year	1990	2000	2008	2009
Population	904	1,225	7,800	8,100
Households	--	396	--	--

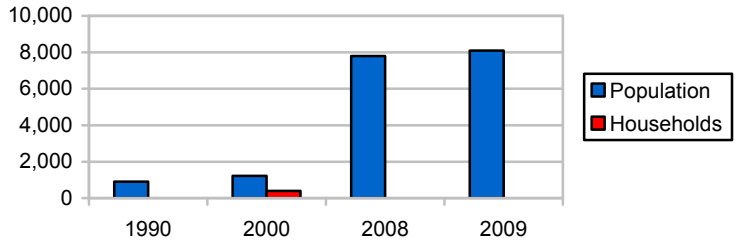
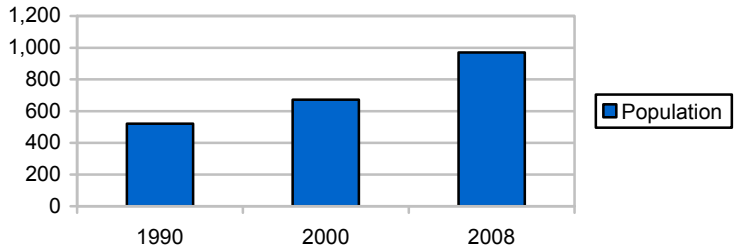


Table 3 Regional and Community Growth

City of Blue Ridge[2]

Year	1990	2000	2008
Population	521	672	970



Source: North Central Texas 2030 Forecast, www.nctcog.org or http://www.nctcog.org/ris/demographics/forecast.asp.
[1]Information from NCTCOG (http://www.nctcog.org/ris/demographics/)
[2]Information from U.S. Census Bureau (http://www.census.gov/)
--Information not available.
* NCTCOG estimate adjusted from 2000 Census count. Does not include group quarters.
Collin County is expected to have a 153 percent increase of new jobs from 2000 to 2030. The Traffic Survey Zones (TSZ) are zones developed by the NCTCOG. The zones have forecasted data available, such as population, employment and households. The proposed project area falls within TSZs 085005, 085006, and 085004. These TSZs are shown in **Figure 1**.

Table 4 depicts the growth in households, population, and employment within the proposed project vicinity.

Table 4 Growth in Household, Population and Employment

TSZ	Households			Population			Employment		
	2000	2030	% Increase	2000	2030	% Increase	2000	2030	% Increase
085005	1,830	8,202	348%	5,301	22,055	316%	1,252	5,465	337%
085006	3,022	11,890	293%	8,499	31,975	276%	2,329	10,348	344%
085004	704	2,951	319%	1,949	7,652	293%	445	3,880	772%

The proposed improvements would support future development within and adjacent to the proposed project area. The No-Build Alternative would not adequately address issues associated with increased mobility and traffic congestion and would not support future development.

A short-term benefit that would be derived from the proposed improvements would be employment for some area residents during construction. The proposed project would stimulate development along the corridor. Due to the anticipated development likely to occur, the proposed project would increase the tax base of both the neighboring cities as well as Collin County.

4.1.1 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 or groups over time.

The area around SH 121 between the project limits is becoming increasingly developed with residential neighborhoods of various sizes. Neighborhoods located along SH 121 include Creekside, Eastwood Addition, Trails of Melissa, The Liberty Project and Wolf Creek Road each community within the City of Melissa. There are no neighborhoods located along SH 121 within the Cities of Anna and Blue Ridge.

- Creekside - This neighborhood is located south of SH 121 west of the Union Pacific Railroad and west of Fitzhugh Branch. The development covers approximately 32 acres and includes approximately 25 single-family residences 1 to 10 acre lots. The development is complete. To accommodate the footprint of the proposed design, the Build Alternative would acquire narrow strips of right-of-way from two single-family residents. The right-of-way acquisition would not displace any residences.

- Eastwood Addition - This neighborhood is located south of SH 121 adjacent to CR 339 on the west side and to Clemmons Creek on the east side. The development covers approximately 150 acres and includes approximately 400 single-family residences 1 to 10 acre lots. The development is complete. The Eastwood Addition is not located adjacent to SH 121 and no right-of-way would be acquired from any of the existing or planned lots located within the neighborhood.

- Trails of Melissa - This neighborhood is located adjacent to the south side of SH 121 adjacent to Whispering Trails on the west side and to Clemmons Creek on the east side. The development covers approximately 50 acres and includes approximately 300 single-family residences 1 to 2 acre lots. The development is approximately 20 percent complete. To accommodate the footprint of the proposed design, the Build Alternative would acquire narrow strips of right-of-way from two platted properties within the Trails of Melissa Home Owners Association. The right-of-way acquisition would not displace any residences.

- The Liberty Project – This neighborhood is located adjacent to the north side of SH 121 east of FM 545 and west of CR 418 (FM 2933). The development covers approximately 105 acres and includes approximately 1,300 single-family residences on 0.1 to 0.5-acre lots. The development is 40 percent complete. The Liberty Project includes a private park located adjacent to SH 121. To accommodate the footprint of the proposed design, the Build Alternative would not require right-of-way from The Liberty Project addition. Therefore, the project would not displace any residences within the Liberty Project addition.

- Wolf Creek Road - This neighborhood is located north of SH 121 adjacent to Wolf Creek Road on the west side and to CR 418 on the east side. The development covers approximately 40 acres and includes approximately 200 single-family residences 0.1 to 0.5 acre lots. The development is approximately 30 percent complete. The Wolf Creek Road addition is not located adjacent to SH 121 and no right-of-way would be acquired from any of the existing or planned lots located within the neighborhood.

Access for side streets and businesses, as well as driveways to developed properties that currently use the SH 121 would not be affected by the proposed design. During re-construction of the SH 121, driveways to businesses and residential areas would be maintained.

One church is located adjacent to the south side of SH 121 east of FM 545. To accommodate the footprint of the proposed design, the Build Alternative would not require right-of-way from the First Baptist Church. It is anticipated that there would be no changes to the existing church.

Five residential homes in the City of Anna, two residential homes in the City of Blue Ridge, one commercial business in the City of Melissa and two commercial businesses in the City of Anna would be displaced to accommodate the footprint of the proposed design. Residential and commercial/retail property is available for these residences and businesses to relocate within the community. Additional information is located in **Sections 2.6 and 4.1.3**.

The Melissa Independent School District, Anna Independent School District and Blue Ridge Independent School District are within the project area. It is anticipated that there would be no changes to the existing School District's jurisdictional boundaries which are based on the existence of the existing facility.

The widening of SH 121 would construct a four-lane urban roadway with additional turn lanes at major intersections. The proposed project would also construct a four-lane rural highway. All sections would contain reserve space for future sidewalks. The increase in width would not impede or prohibit residents from crossing SH 121. Because this is an urban roadway with a posted speed limit ranging from 45 mph to 60 mph, there would be limited pedestrian traffic crossing the expanded roadway. As a result, the proposed project is anticipated to have a beneficial effect on regional and community growth.

The proposed project would improve traffic flow and alleviate congestion in the area. Expansion of the existing facility would improve the LOS, mobility, and access in the area.

A public meeting was held on May 15, 2007 at Melissa First Baptist Church in Melissa, Texas. One hundred thirty-three (133) private citizens attended the meeting. Attendees expressed support of the proposed project. A copy of the public involvement package is attached (**Appendix F**).

Pedestrian access would be maintained or improved and a reconstructed roadway surface should better serve the adjacent neighborhoods. Efforts would be made to minimize the inconvenience to vehicles using the roadway during the construction phase.

SH121 was originally constructed in the 1950s and the communities have developed and grown based on the existence of the facility. Currently, SH 121 serves as a boundary between neighborhoods and communities. The project would not bisect any communities not already bisected by SH 121.

Neither the No Build Alternative nor Build Alternative would disrupt or isolate the communities and neighborhoods. Implementation of the Build Alternative would not alter travel patterns in a way that would affect Collin County or the Cities of Melissa, Anna, and Blue Ridge. The Build Alternative would improve capacity, mobility, traffic flow and circulation, and safety along SH 121 in the study area.

4.1.2 Limited English Proficiency (LEP)

Executive Order 13166 "Improving Access to Services for Persons with Limited English Proficiency" requires all recipients of federal funds to provide meaningful access to persons who are limited in their English proficiency (LEP). The United States (U.S.) Department of Justice defines LEP individuals as those "who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English" (67 FR 41459). Data about LEP populations was gathered in the U.S. Census 2000. For data analysis purposes, the Census divides the states of the United States into counties, divides counties into tracts and divides tracts into block groups.

Potential language barriers associated with ethnic and minority populations were analyzed to determine whether there are persons with LEP near the project area. According to the U.S. Census Bureau 2000, different languages are spoken throughout the Block Groups.

U.S. Census Bureau information was reviewed to identify *Populations 5 years and over by language spoken at home and ability to speak English.* U.S. Census Bureau information did not address these statistics for the Block, but did for the Block Groups (**Table 5**). Therefore, the information includes the project area and the larger area immediately outside the limits of this project. The project area's population Block Group identify the number of individuals (age 5 years and older) and the language spoken at home by their ability to speak English. Of the 2,691 individuals (age 5 years and older) in CT 301, BG 1, 58 (approximately 2.2%) spoke another language and spoke English less than "very well". Of the 2,713 individuals (age 5 years and older) in CT 302, BG 1, 236 (approximately 8.7%) spoke another language and spoke English less than "very well". Of the 1,253 individuals (age 5 years and older) in CT 302, BG 3, 41 (approximately 3.3%) spoke another language and spoke English less than "very well". Of the 1,843 individuals (age 5 years and older) in CT 302, BG 4, 51 (approximately 2.8%) spoke another language and spoke English less than "very well".

Table 5 Limited English Proficiency Data

Language	CT 301, BG 1	CT 302, BG 1	CT 302, BG 3	CT 302, BG 4
Total Population Ages 5 and Over	2,691	2,713	1,253	1,843
Speaks Only English	2,518	2,257	1,107	1,680
Speaks Spanish	136	426	140	107
Speak English "very well"	88	199	103	74
Speak English "well"	25	48	21	21
Speak English "not well"	14	69	14	5
Speak English "not at all"	9	110	2	7
Speaks other Indo-European languages	31	17	2	28
Speak English "very well"	21	15	2	26
Speak English "well"	7	0	0	2
Speak English "not well"	3	2	0	0
Speak English "not at all"	0	0	0	0

Table 5 Limited English Proficiency Data

Language	CT 301, BG 1	CT 302, BG 1	CT 302, BG 3	CT 302, BG 4
Speaks Asian and Pacific Island languages	**0**	**13**	**4**	**17**
Speak English "very well"	0	6	0	12
Speak English "well"	0	0	4	2
Speak English "not well"	0	5	0	3
Speak English "not at all"	0	2	0	0
Speaks Other languages	**6**	**0**	**0**	**11**
Speak English "very well"	6	0	0	0
Speak English "well"	0	0	0	0
Speak English "not well"	0	0	0	11
Speak English "not at all"	0	0	0	0
Source: U.S. Census Data 2000, SF 3 - P19				

The block group data for Census Tract 301, Block Group 1, Census Tract 302, Block Group 3 and Census Tract 302, Block Group 4 indicates the presence of LEP language groups that do not exceed the Department of Justices' Safe Harbor threshold of 5% of 1,000 persons. However, the block group data for Census Tract 302, Block Group 1, indicates the presence of LEP language groups that exceed the Department of Justices' Safe Harbor threshold of 5% of 1,000 persons.

Results of a field reconnaissance (windshield survey) indicates that English was the language used for building signage and other forms of posted information and advertisements at the proposed project location. Public involvement activities would be advertised in English and Spanish and translators would be available upon request. Therefore, the requirements of Executive Order 13166 are satisfied.

4.1.3 Environmental Justice

Executive Order 12898 (February 1994) entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" requires each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionally high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations. The FHWA has identified three fundamental principles of environmental justice:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations;
2. To ensure full and fair participation by all potentially affected communities in the transportation decision-making process;
3. To prevent the denial of, reduction in or significant delay in the receipt of benefits by minority populations and low-income populations."

Disproportionately high and adverse human health or environmental effects are defined by FHWA as adverse effects that:

1. Are predominately borne by a minority population and/or a low-income population or
2. Will be suffered by the minority population and/or low-income population and are appreciably more severe or greater in magnitude than the adverse effects that will be suffered by the nonminority population and/or non-low- income population.

A minority population is defined as a group of people and/or a community experiencing common conditions of exposure or impact that consists of persons classified by the United States (U.S.) Bureau of the Census as African American; Hispanic; Asian or Pacific Islander; American Indian, Eskimo, or Aleut; or other non-white persons. According to the U.S. Department of Health and Human Services Poverty Guidelines, a low-income population is defined as one with a median income for a family of four equal to or below the national poverty level of $22,350 in the year 2011 (2011 Department of Health and Human Services Poverty Guidelines).

Table 6 shows the demographic profile for the proposed project area from the 2000 US Census. The proposed project is within CT 301, BG 1 and CT 302, BGs 1, 3, and 4.

Table 6 U.S. Census Bureau Demographic Profile

			Not Hispanic or Latino					
Census Geography	**Total Population**	**Hispanic or Latino**	**White**	**Black or African-American**	**American Indian and Alaska Native**	**Asian**	**Native Hawaiian or Other Pacific Islander**	**Other and Multiple**
CT 301, BG 1	**2,879**	**188 (6.5%)**	**2,620 (91.0%)**	**14 (0.5%)**	**18 (0.6%)**	**6 (0.2%)**	**0 (0.0%)**	**32 (1.1%)**
CT 301, BG 1, Block 1002	12	0 (0.0%)	12 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1011	32	2 (6.3%)	30 (93.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1043	15	0 (0.0%)	15 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1050	13	0 (0.0%)	13 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1051	5	0 (0.0%)	5 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 105	17	0 (0.0%)	17 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1064	32	0 (0.0%)	32 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1065	5	0 (0.0%)	5 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

Table 6 U.S. Census Bureau Demographic Profile

			Not Hispanic or Latino					
Census Geography	**Total Population**	**Hispanic or Latino**	**White**	**Black or African-American**	**American Indian and Alaska Native**	**Asian**	**Native Hawaiian or Other Pacific Islander**	**Other and Multiple**
CT 301, BG 1, Block 1066	13	0 (0.0%)	12 (92.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (7.7%)
CT 301, BG 1, Block 1078	5	1 (20.0%)	4 (80.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1083	8	0 (0.0%)	8 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1090	6	0 (0.0%)	6 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1093	3	0 (0.0%)	3 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1094	24	0 (0.0%)	24 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1097	13	0 (0.0%)	13 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1114	176	21 (11.9%)	154 (87.5%)	0 (0.0%)	0 (0.0%)	1 (0.6%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1133	47	14 (29.8%)	32 (68.1%)	1 (2.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1134	10	0 (0.0%)	10 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1143	13	0 (0.0%)	13 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1170	6	0 (0.0%)	6 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 301, BG 1, Block 1171	2	0 (0.0%)	2 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 1	**2,913**	**517 (17.7%)**	**2,256 (77.4%)**	**20 (0.7%)**	**27 (0.9%)**	**18 (0.6%)**	**0 (0.0%)**	**75 (2.6%)**
CT 302, BG 1 Block 1061	55	6 (10.9%)	44 (80.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (9.1%)
CT 302, BG 1 Block 1064	43	0 (0.0%)	35 (81.4%)	0 (0.0%)	4 (7.3%)	0 (0.0%)	0 (0.0%)	4 (7.3%)

Table 6 U.S. Census Bureau Demographic Profile

			Not Hispanic or Latino					
Census Geography	**Total Population**	**Hispanic or Latino**	**White**	**Black or African-American**	**American Indian and Alaska Native**	**Asian**	**Native Hawaiian or Other Pacific Islander**	**Other and Multiple**
CT 302, BG 1 Block 1109	7	0 (0.0%)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 1 Block 1141	10	0 (0.0%)	10 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 1 Block 1142	66	0 (0.0%)	59 (89.4%)	5 (7.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (3.0%)
CT 302, BG 3	**1,356**	**183 (13.5%)**	**1,136 (83.8%)**	**7 (0.5%)**	**6 (0.4%)**	**2 (0.1%)**	**0 (0.0%)**	**22 (1.6%)**
CT 302, BG 3 Block 3020	24	4 (16.7%)	15 (62.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (20.8%)
CT 302, BG 3 Block 3024	163	59 (36.2%)	102 (62.6%)	0 (0.0%)	2 (1.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 3 Block 3027	45	22 (48.9%)	22 (48.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (2.2%)
CT 302, BG 3 Block 3044	5	0 (0.0%)	5 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 3 Block 3045	7	0 (0.0%)	7 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4	**2,004**	**151 (4.5%)**	**1,798 (89.7%)**	**4 (0.2%)**	**10 (0.5%)**	**9 (0.4%)**	**0 (0.0%)**	**31 (1.5%)**
CT 302, BG 4, Block 4001	5	0 (0.0%)	5 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4, Block 4011	18	0 (0.0%)	18 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4, Block 4015	6	2 (33.3%)	4 (66.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4, Block 4019	9	0 (0.0%)	9 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4, Block 4021	6	0 (0.0%)	6 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4, Block 4022	8	0 (0.0%)	8 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4, Block 4023	8	0 (0.0%)	6 (75.0%)	0 (0.0%)	0 (0.0%)	2 (25.0%)	0 (0.0%)	0 (0.0%)

Table 6 U.S. Census Bureau Demographic Profile

			Not Hispanic or Latino					
Census Geography	**Total Population**	**Hispanic or Latino**	**White**	**Black or African-American**	**American Indian and Alaska Native**	**Asian**	**Native Hawaiian or Other Pacific Islander**	**Other and Multiple**
CT 302, BG 4, Block 4025	13	0 (0.0%)	13 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4, Block 4027	160	23 (14.4%)	137 (85.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4, Block 4049	45	1 (2.2%)	40 (88.9%)	0 (0.0%)	0 (0.0%)	3 (6.7%)	0 (0.0%)	1 (2.2%)
CT 302, BG 4, Block	3	0 (0.0%)	3 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4, Block 4051	4	0 (0.0%)	4 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4, Block 4053	70	6 (8.6%)	64 (91.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
CT 302, BG 4, Block 4095	18	1 (5.6%)	17 (94.4%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Source: U.S. Census Data 2000, SF 1 – P8								

Based on the Census data and field investigations, no minority communities appear to be present in the project area since no minority populations within the affected area exceed 50 percent.

The proposed project would widen existing SH 121 to accommodate existing and future growth and associated traffic in the eastern Collin County region. The proposed project would widen and increase the number of through traffic lanes and would improve mobility. In addition, the proposed project would improve connectivity and stimulate local economic development for the SH 121 proposed project area. Therefore, the proposed project would be a benefit to local residents and motorists using the facility.

The information provided in **Table 7** indicates that the median household income of BG 1 in CT 301 is $48,693. The median household income of BGs 1, 3, and 4 in CT 302 are $48,095, $60,455, and $53,482 respectively. This is above the current 2011 Department of Health and Human Services poverty threshold $22,350 for a family of four; therefore, the project does not occur in a low-income area.

The study area median family income is approximately 121 percent higher than the 2011 poverty guideline ($22,350) for a family of four in BG 1, CT 301; approximately 118 percent higher in BG 1, CT 302; approximately 174 percent higher in BG 3, CT 302; and approximately

143 percent higher in BG 4, CT 302. It is anticipated that there would be no disproportionate impacts to low income populations. Additionally, the proposed project would not separate or isolate any minority group or low-income populations. There would be no disproportionate adverse impacts on any minority and/or low-income populations associated with the proposed project.

Table 7 Economic Statistics

Proposed Project Area			Individuals Below Poverty Level		Median Household Income
Census Tract	Block Group	Total Population	Population	Percent	
301	1	2,877	164	5.7%	$48,693
302	1	2,903	169	5.8%	$48,095
302	3	1,350	71	5.3%	$60,455
302	4	1,995	144	7.2%	$53,482

Because the transportation objectives of the proposed project are clearly described and discussed with local communities in a public involvement process that encourages reciprocal communication about local views and needs; and because the community and citizen concerns have and would continue to be addressed; and further, because the proposed project would be a safe facility for both the user and the community; this proposed project has met the requirements of E.O. 12898.

The No-Build Alternative would leave the facility in its current condition. As stated in the description of the No-Build Alternative in Section V.C.1, the conditions on SH 121 would continue to degrade causing a decrease in mobility and an increase in traffic congestion, noise, air pollution, and fuel usage. These are determined to be adverse affects to the northern Collin County area and would affect minority and low-income populations.

4.1.4 Relocations and Displacements

Both the U.S. and Texas Constitutions provide that no private land may be taken for public purposes without adequate compensation. The TxDOT ROW Acquisition and Relocation Assistance Program would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended, in the Uniform Relocation Assistance Act of 1987. Relocation resources are available without discrimination to all residential and business facilities being relocated.

There would be two commercial displacements, five residential displacements and one barn displaced associated with the Build Alternative. Displacements are listed in **Table 8** and shown on **Figure 3**.

Table 8 Displaced Properties Associated with the Build Alternative

Property Type	Address
Barn (part of residence property)	4544 Sam Rayburn Hwy (SH 121), Anna, Texas, 75409
Residence	4575 Sam Rayburn Hwy (SH 121) , Anna, TX 75409
Commercial – Circle V Restaurant	12546 SH 121 N, Anna, TX 75409
Commercial – Lightfoot Livery	12604 SH 121, Anna, TX 75409
Residence	12809 SH 121, Anna, TX 75409

Table 8 Displaced Properties Associated with the Build Alternative

Property Type	Address
Residence	12979 SH 121, Anna, TX 75409
Residence	14702 Donaldson Drive, Anna, TX 75409
Residence	15522 N SH 121, Blue Ridge, TX 75424

Information for displaced residential and commercial properties was obtained from the Collin County Central Appraisal District. **Table 9** summarizes the value information for each property type.

Table 9 Available Property Value Information for Displaced Structures

Location	Property Value						
	$0-$49,999	$50,000-$99,999	$100,000-$149,999	$150,000-$199,999	$200,000-499,999	$500,000-Up	Unknown Value
Commercial							
City of Anna	0	0	0	1	0	0	1
Residential							
City of Anna	2*	0	2	1	0	0	0
City of Blue Ridge	0	1	0	0	0	0	0

**Data includes property in which the barn will be displaced. Value information accounts for the entire property. Information for the barn alone was not available. The residence will not be displaced.*

Source: Collin Central Appraisal District Property Search (2011)

TxDOT offers relocation assistance to all individuals, families, businesses, farmers, ranchers, and nonprofit organizations displaced as a result of a State highway or other transportation project. In order to assist those who are required to move, TxDOT provides, through its relocation assistance program, payments and services to aid in movement to a new location. This assistance applies to tenants as well as owners occupying the real property needed for an orderly, timely, and efficient move. This applies not only to residential occupants, but also to all parties where an occupant has to move to a new location or move his property to a new location. A relocation counselor would contact the affected property owners and tenants.

No displaced residence shall be required to move permanently from his or her residence until at least one comparable replacement dwelling is made available to the person. A replacement means a dwelling which is decent, safe, and sanitary; functionally equivalent to the displacement dwelling with particular attention to the number of rooms and living space; adequate in size to accommodate the occupants; in an area that is not subject to unreasonable adverse environmental conditions, is not generally less desirable than the location of the displaced person's dwelling with respect to public utilities and commercial and public facilities,

and is reasonably accessible to the development with normal site improvements, including customary landscaping currently available to the displaced person on the private market unless the person is receiving government housing assistance to occupy the displacement dwelling; and within the financial means of the displaced person. The replacement housing would meet minimum requirements established by the State of Texas and would conform to applicable housing and occupancy codes.

Table 10 summarizes the number of residential and commercial properties available in the Cities of Anna and Blue Ridge.

Table 10 Residential and Commercial Properties for Sale

Location	Listing Value						Total Listings
	$0-$49,999	$50,000-$99,999	$100,000-$149,999	$150,000-$199,999	$200,000-499,999	$500,000-Up	
Commercial							
City of Anna	0	2	0	0	0	1	3
Residential							
City of Anna	1	5	34	18	6	1	65
City of Blue Ridge	2	2	4	2	8	1	19

Source: *www.realtor.com; Loopnet.com; Sawbuck.com (May 2011)*

A search for commercial properties in the City of Anna resulted in Seven (7) vacant parcels and three (3) commercial structures for sale. Three (3) office/retail spaces are available for lease in the City of Anna range from $15 to $18 per square foot.

Eighty-four (84) residential structures are for sale within the Cities of Anna and Blue Ridge.

Table 6 shows the demographic profile for the proposed project area from the 2000 US Census. The proposed project is within CT 301, BG 1 and CT 302, BGs 1, 3, and 4. Based on the Census data and field investigations, no minority communities appear to be present in the project area since no minority populations within the affected area exceed 50 percent.

Table 7 indicates that the median household income of BG 1 in CT 301 is $48,693 and the median household income of BGs 1, 3, and 4 in CT 302 are $48,095, $60,455, and $53,482 respectively. The study area median family income is approximately 121 percent higher than the 2011 poverty guideline ($22,350) for a family of four in BG 1, CT 301; approximately 118 percent higher in BG 1, CT 302; approximately 174 percent higher in BG 3, CT 302; and approximately 143 percent higher in BG 4, CT 302.

It is anticipated that there would be no disproportionate impacts to low income populations for the commercial and residential displacements. Additionally, the proposed project would not separate or isolate any minority group or low-income populations. There would be no disproportionate adverse impacts on any minority and/or low-income populations associated with the proposed project.

If the No-Build Alternative were implemented, no relocation would occur and no new ROW would be acquired; however, no improvement to traffic mobility and no increase in safety to the traveling public would occur.

4.2 Detours

No detours would be required for the proposed project. The proposed project would require a traffic control plan which would include staged construction. The plan would be prepared during the construction plan preparation stage and implemented during the construction stage. Traffic control planning and design would include efforts to maintain existing traffic capacity during peak travel periods.

4.3 Section 4(f)

The proposed project would not impact any publicly owned parklands, wildlife or waterfowl refuges, recreational areas, or known historic sites. Therefore, a Section 4(f) statement is not required.

Under the No-Build Alternative, no additional ROW would be required. Thus, there would be no ROW acquired from a Section 4(f) property.

4.4 Cultural Resources

Cultural resources are structures, buildings, archeological sites, districts (a collection of related structures, buildings, and/or archeological sites), cemeteries, and objects. Both federal and state laws require consideration of cultural resources during project planning. At the federal level, the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA) of 1966, among others, apply to transportation projects such as this one. In addition, state laws such as the Antiquities Code of Texas apply to these projects. Compliance with these laws often requires consultation with the Texas Historical Commission (THC)/Texas State Historic Preservation Office (SHPO) and/or federally-recognized tribes to determine the project's effects on cultural resources. Review and coordination of this proposed project followed approved procedures for compliance with federal and state laws.

4.4.1 Historic Properties

The proposed project was previously coordinated under Section 106 regulation on September 3, 2010, resulting in a determination that no historic properties were present in the project APE. The proposed project is now 100% state funded. The September 2010 coordination covers the proposed state activity and a summary of the findings is below.

A review of the National Register of Historic Places (NRHP), the list of State Archeological Landmarks (SAL), and the list of Recorded Texas Historic Landmarks (RTHL) indicated that no historically significant resources have been previously documented within the area of potential effects (APE). It has been determined through consultation with the State Historic Preservation Officer (SHPO) that the APE for the proposed project is 150-ft from the existing and proposed ROW. A reconnaissance survey undertaken in September 2009 identified one hundred twenty-

two (122) historic-age resources on forty-six (46) parcels (built prior to 1967) located within the project APE. These resources include 60 agricultural buildings, 24 residences, 30 residential outbuildings, 4 transportation resources, 3 religious buildings, and 1 industrial resource.

TxDOT Historians have evaluated Resource #s 1-46 through application of the Criteria of Eligibility for listing in the National Register of Historic Places, and concur with the attached survey report that they are not eligible for inclusion in the NRHP, either individually or as a historic district. These resources do not have associations with significant historical figures or events to qualify for eligibility under Criteria A or B. They also represent common vernacular types that do not clearly reflect the distinctive characteristic of type, period, method of construction, work of a master, or high artistic value to qualify as eligible under Criterion C. Additionally, all of the properties evidence unsympathetic alterations that have compromised their integrity.

Resource #s 40, 41, 42 are concrete bridges constructed in 1962. In compliance with Section 110 of the National Historic Preservation Act and the Memorandum of Understanding between TxDOT and the Texas Historical Commission, TxDOT historians evaluated the bridges to establish their historical significance. In accordance with Section 110 of the National Historic Preservation Act the bridges were determined not eligible for the National Register during the 1999 survey of non-truss structures. The bridges do not possess sufficient design or engineering significance to meet National Register eligibility under Criterion C: Engineering at the state level of significance.

Because the bridges may have local significance TxDOT consulted with the County Historical Commission (CHC) concerning the historic significance of the bridges. Since the Collin County Historical Commission did not respond within the agreed 30-day time period, TxDOT has assumed that the CHC has concurred that the bridges have no known historical significance at the local level under National Register of Historic Places Criteria A or B. A copy of the letter, dated January 27, 2009 is included in the **Appendix G**.

Pursuant to Stipulation VI “Undertakings with Potential to Cause Effects,” Appendix 4 (2) of the Programmatic Agreement for Transportation Undertakings, (PATU) between the Federal Highway Administration (FHWA), the Texas State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation, and the Texas Department of Transportation (TxDOT) and the Memorandum of Understanding (MOU), TxDOT Historians determined that no historic properties are present within the proposed project’s APE and individual project coordination with SHPO is not required.

4.4.2 Archeological Resources

Evaluation of project effects on archeological resources could not be completed because right-of-entry was denied to some properties, preventing archeologists from conducting the necessary field work. A background study found that only some areas warranted survey. Consultation with federally-recognized tribes with a demonstrated historical interest in the area will be initiated by ENV. Work conducted up to this point has identified no archeological resources that would be afforded further consideration under cultural resource laws and that the project would adversely affect. No public controversy exists regarding the project’s potential impacts on archeological sites or cemeteries. Once access to the areas requiring field investigations has been obtained, TxDOT will complete all required investigations and consultation. In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area will cease, and TxDOT archeological staff will be contacted to initiate post-review discovery procedures.

4.5 Vegetation and Wildlife Habitat

According to the Texas Parks and Wildlife Department (TPWD) Vegetation Types of Texas publication (1984), the proposed project area is designated as Crops and Other Native or Introduced Grasses. The vegetation within the proposed project area is consistent with the classifications of Crops and Introduced Native or Introduced Grasses. The Crops vegetation type is a statewide vegetation category that includes cultivated cover crops and row crops utilized for food and/or fiber for humans or domesticated animals. The Introduced Native or Introduced Grasses vegetation type includes mixed native or introduced grasses and forbs on grassland sites or mixed herbaceous communities resulting from the clearing of woody vegetation. This type is associated with the clearing of forests in northeast and east-central Texas and may portray early stages of Type 41, Young Forest. This type also occurs in the South Texas Plains where brush has been cleared. Such areas are particularly subject to change due to regrowth brush.

The proposed project is found on the Anna, Blue Ridge and Pilot Grove, Texas USGS quadrangle maps (see **Figure 2**). After reviewing habitat requirements and conducting a field reconnaissance, it was determined that there are no substantial natural plant communities or native prairie remnants that would be affected by the proposed project.

Vegetation along the proposed project area is consistent with Crops and Introduced Native or Introduced Grasses vegetation types. Because the proposed project requires new ROW, a description of the surrounding vegetation as per TxDOT and TPWD MOA follows:

Within the proposed project ROW, the dominant tree species are sugarberry (*Celtis laevigata*), American elm (*Ulmus americana*), pecan (*Carya illinoensis*), eastern red cedar (*Juniperus virginiana*), and cedar elm (*Ulmus crassifolia*). The non-dominant tree species include American sycamore (*Platanus occidentalis*), black willow (*Salix nigra*), honey locust (*Gleditsia triacanthos*), eastern cottonwood (*Populus deltoides*) and bois d'arc (*Maclura pomifera*).

4.5.1 Upland Vegetation within Existing and Proposed ROW

The upland herbaceous vegetation within the existing TxDOT maintained ROW consists almost entirely of grasses. The vegetation within the existing ROW include native and introduced herbaceous vegetation such as Johnson grass (*Sorghum halepense*), bermuda grass (*Cynodon dactylon*), silver bluestem (*Andropogon saccharoides*), switchgrass (*Panicum virgatum*), and common oats (*Avena sativa*). Impacts to maintained upland herbaceous vegetation within the existing ROW would be approximately 160.4 acres.

The land types that would be acquired for the proposed ROW are considered agricultural (pasture and cropland), residential, municipal, and commercial. These land types, and the vegetation within the proposed ROW, consist of native and introduced upland herbaceous vegetation such as Johnson grass, bermuda grass, silver bluestem, switchgrass, and common oats. Impacts to upland herbaceous vegetation within the proposed ROW would be approximately 119.5 acres, of which, approximately 100.0 acres are considered agricultural (pasture and crop land) consisting almost entirely of native and introduced grasses, with some cultivated areas.

4.5.2 Riparian Vegetation within Existing and Proposed ROW

The riparian vegetation within the existing and proposed ROW consists of Johnson grass, bermuda grass, western ragweed (*Ambrosia psilostachya*), curly dock (*Rumex crispus*), aster (*Aster* spp.), black willow, and eastern red cedar. Large diameter tree species within the riparian

vegetation type include black willow, American elm, sugarberry, pecan, and cottonwood (*Populus deltoids*). The average diameter at breast height (dbh) is 12-inches and the average height is 20-ft. The canopy cover is approximately 10 percent. Impacts to riparian vegetation would be approximately 3.9 acres in the existing ROW and 7.8 acres within the proposed ROW, for a total impact of 11.7 acres.

4.5.3 Wooded Vegetation within Existing and Proposed ROW

The wooded vegetation within the existing and proposed ROW consists of different population densities between fence line, densely wooded, and maintained, or less dense areas. The average trees per acre varies from approximately 436 trees per acre for fence line wooded vegetation, 1,742 trees per acre for densely wooded vegetation, and 680 trees per acre for maintained, or less dense areas of wooded vegetation. The wooded vegetation consists of eastern red cedar, sugarberry, cedar elm, American elm, honey locust, and pecan. Impacts to maintained, or less dense and fence line wooded vegetation would be approximately 7.2 acres in the existing ROW and 21.3 acres in the proposed ROW. Impacts to densely wooded vegetation would be approximately 0.4 acres in the existing ROW and 8.3 acres in the proposed ROW. Impacts to vegetation within the existing and proposed ROW are summarized in **Table 11**.

Table 11 Impacts to Vegetation

Vegetation Type	Area of Impacts
Existing ROW	
Upland Herbaceous	160.4 acres
Upland Wooded	7.2 acres
Riparian	3.9 acres
Upland Wooded (dense)	0.4 acre
Proposed ROW	
Upland Herbaceous	19.5 acres
Upland Herbaceous (agricultural)	100 acres
Upland Wooded	21.3 acres
Riparian	7.8 acres
Upland Wooded (dense)	8.3 acres
Total	328.8 acres

Of the 328.8 acres of impacts to vegetation associated with the proposed project, approximately 40 acres of trees would be impacted. Trees would only be removed as necessary during construction.

Minor limb trimming may be required to promote safety during construction. Every effort would be made to preserve trees where they neither compromise safety nor substantially interfere with the proposed project's construction. Because the bridge approaches on either side of the bridge would be realigned and reconstructed to conform to the new bridge location, the existing roadway approaches would be removed and replaced with grass.

There are no native prairie remnants within or immediately adjacent to the proposed project area.

4.5.4 TxDOT and Texas Parks and Wildlife Department Memorandum of Understanding/Memorandum of Agreement (MOA)

In accordance with Provision (4)(A)(i) of the TxDOT-TPWD "Memorandum of Agreement for the Finalization of the 1998 Memorandum of Understanding Concerning Habitat Descriptions and Mitigation" (MOU), "Unusual Vegetation Features" include:

- Un-maintained vegetation;
- Trees or shrubs along a fence line (ROW) adjacent to a field (fencerow vegetation);
- Riparian vegetation (particularly where fields/cropland extends up to or abuts the vegetation associated with the riparian corridor);
- Trees that are unusually larger than other trees in the area; and
- Unusual stands or islands (isolated) of vegetation.

In addition to the above, "Special Habitat Features" include:

- Bottomland hardwoods;
- Caves;
- Cliffs and bluffs;
- Native prairies (particularly those with climax species of native grasses and forbs);
- Ponds (temporary and permanent, natural and man-made);
- Seeps or springs;
- Snags (dead trees) or groups of snags;
- Water bodies (creeks, streams, rivers, lakes, etc.); and
- Existing bridges with known or easily observed bird or bat colonies.

Based on the above descriptions, unusual vegetation features either within the existing or proposed ROW (i.e., generally adding 15 feet of width to each side of the existing road) include vegetation that is fencerow or riparian. The riparian habitat located within the proposed project corridor would be given consideration for non-regulatory mitigation where riparian areas were found to exist adjacent to the identified creeks and channels. Impacts to these areas would be limited. Impacts to riparian areas are approximately 11.5 acres. Because avoidance and minimization efforts were employed during the proposed project's development the District would not offer compensatory mitigation for unavoidable impacts to these non-regulatory areas.

If the No-Build Alternative were implemented, the existing facility and the clear zones would continue to be mowed and maintained at the current maintenance intervals. The habitat in the unmaintained sections of the existing ROW would change with normal biological succession. The No-Build Alternative would not result in any conversion of land to transportation use.

4.5.5 Migratory Bird Treaty Act (MBTA)

The Migratory Bird Treaty Act of 1918 states that it is unlawful to kill, capture, collect, possess, buy, sell, trade, or transport any migratory bird, nest, young, feather, or egg in part or in whole, without a federal permit issued in accordance within the Act's policies and regulations. Between October 1 and February 15, the contractor would remove all old migratory bird nests from any structures that would be affected by the proposed project, and complete any bridge work and/or vegetation clearing. In addition, the contractor would be prepared to prevent migratory birds from building Nests between February 15 and October 1, per the Environmental Permits, Issues, and Commitments (EPIC) plans. In the event that migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided.

4.5.6 Executive Order 13112 on Invasive Species

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

4.5.7 Fish and Wildlife Coordination Act (FWCA)

Because the proposed project is not within a county that has tidally influenced water, the proposed project is not applicable for consideration of essential fish habitat and does not require coordination under the Fish and Wildlife Coordination Act.

4.5.8 Texas Parks and Wildlife Department Coordination

The MOU with TPWD delineates a process by which TxDOT coordinates proposed transportation activities with TPWD for comment. The MOU also requires environmental documents for highway projects that meet certain parameters be provided to TPWD for review and comment.

Project specific triggers that initiate coordination with TPWD include the following:

- the project requires more than 1.0 acre of new ROW within floodplains or creek drainages in rural or undeveloped urban areas;
- the project affects mature woody vegetation or dense mature brush, including any significant remnant native vegetation (e.g., undisturbed native prairie or bottomland hardwood, etc.);
- the project is within the range and in suitable habitat of any state or federally listed threatened or endangered species;

Because this project would affect these items above, coordination is required with TPWD. Coordination with TPWD was initiated on December 31, 2010. TPWD responded with comments and recommendations on February 11, 2011. TxDOT responded to the TPWD comments in writing on April 11, 2011. Correspondence between TxDOT and TPWD is attached (See **Appendix H**). Therefore, requirements as per the Texas Parks and Wildlife Code (Sec. 12.0011) are completed.

4.6 Threatened and Endangered Species

4.6.1 Natural Diversity Database (NDD) Information

The TPWD's Texas Natural Diversity Database (NDD) was reviewed in April 2011 (March 14, 2011 version). This review met all the requirements of the TxDOT-TPWD Memorandum of Agreement (MOA) for utilizing and maintaining NDD information. The search radius extended 1.5 miles from the proposed project area. Two known elements of occurrence of state or federally listed species were recorded within 1.5 miles of the proposed project area. **Table 12**

provides elements of occurrence within 1.5 miles of the proposed project. The Texas NDD is a potential presence database that cannot be interpreted as presence/absence data. There are no managed areas within 1.5 miles of the proposed project.

Table 12 Elements of Occurrence within 10 Miles of the Proposed Project

Element of Occurrence ID No.	Common Name	Scientific Name	Federal/State Status	Approximate Distance from Proposed Project
3578	American elm-Chinkapin oak-Hackberry Series	*Ulmus Americana-Quercus muehlenbergii- Celtis laevigata*	Rare, but not formally listed as threatened or endangered at federal or state level	0.2 mile
2718	Little bluestem-indian grass series	*Schizachyrium scoparium-Sorghastrum nutans*	Rare, but not formally listed as threatened or endangered at federal or state level	0.6 mile

4.6.2 Species of Concern

The TPWD Collin County list identified several threatened and endangered species and species of concern that may occur within Collin County. The status and anticipated effects to each of these species is summarized in **Table 13** which lists federally and state listed threatened and endangered species and species of concern which may occur within Collin County. Species appearing on this list do not share the same probability of occurrence. Some species are migrants, wintering residents only, historic or considered extirpated. A review of state and federal lists of threatened and endangered species for Collin County was performed. After reviewing habitat requirements and conducting a site visit, it was determined that there are suitable habitats within the project area for the state listed Henslow's Sparrow, Western Burrowing Owl, A crayfish, Plains spotted skunk, Fawnsfoot, the Texas Garter Snake and the Timber/Canebrake Rattlesnake. No species were detected in the project area during the June 18, 2009 field reconnaissance or within the proposed project area for any state or federally listed threatened or endangered species.

A Fawnsfoot habitat survey was completed on January 21, 2011 within the waters of Brinlee Branch. No mollusks were found.

Table 13 Federal, State Listed Threatened/Endangered Species, and Texas Parks and Wildlife Department's Species of Concern – Collin County

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present	Species Effect	Species Impact
BIRDS						
American Peregrine Falcon *Falco peregrinus anatum*	—	T	Year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers	No	- -	No impact

Table 13 Federal, State Listed Threatened/Endangered Species, and Texas Parks and Wildlife Department's Species of Concern – Collin County

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present	Species Effect	Species Impact
			at leading landscape edges such as lake shores, coastlines, and barrier islands.			
Arctic Peregrine Falcon *Falco peregrinus tundrius*	—		Migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.	No	- -	No impact
Bald Eagle *Haliaeetus leucoceophalus*	DM	T	Found primarily near rivers and large lakes; nests in tall trees or on cliffs near water; communally roosts, especially in winter; hunts live prey, scavenges, and pirates food from other birds.	No	No Effect	No impact
Henslow's Sparrow *Ammodramus henslowii*	—		Wintering individuals (not flocks) found in weedy fields or cut-over areas where lots of bunch grasses occur along with vines and brambles; a key component is bare ground for running/walking.	Yes	- -	Suitable habitat could be impacted; however, this habitat is abundant adjacent to the proposed project area.
Interior Least Tern *Sterna antillarum athalassos*	E*	E	Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony.	No	No Effect	No impact
Peregrine Falcon *Falco peregrinus*	—	T	Both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (*F. p. anatum*) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, *F.p. tundrius* is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.	No	- -	No impact
Piping Plover *Charadrius melodus*	—	T	Wintering migrant along the Texas Gulf Coast; beaches and bayside mud or salt flats.	No	No Effect	No impact
Sprague's Pipit *Anthus spragueii*	—		Only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges.	No	- -	No impact

Table 13 Federal, State Listed Threatened/Endangered Species, and Texas Parks and Wildlife Department's Species of Concern – Collin County

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present	Species Effect	Species Impact
Western Burrowing Owl *Athene cunicularia hypugaea*	—		Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows.	Yes	- -	Suitable habitat could be impacted; however, this habitat is abundant adjacent to the proposed project area.
White-faced Ibis *Plegadis chihi*	—	T	Prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	No	- -	No impact
Whooping Crane *Grus americana*	E	E	Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.	No	No Effect	No impact
Wood Stork *Mycteria americana*	—	T	Forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.	No	- -	No impact
CRUSTACEANS						
A crayfish *Procambarus steigmani*	—		Burrower in long-grass prairie; all animals were collected with traps, thus there is no knowledge of depths of burrows; herbivore; crepuscular, nocturnal.	Yes	- -	Suitable habitat could be impacted; however, this habitat is abundant adjacent to the proposed project area.
MAMMALS						
Plains spotted skunk *Spilogale putorius interrupta*	—		Catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tallgrass prairie.	Yes	- -	Suitable habitat could be impacted; however, this habitat is abundant adjacent to the proposed project area.
Red wolf *Canis rufus*	E*	E	Extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies.	No	No Effect	No impact

Table 13 Federal, State Listed Threatened/Endangered Species, and Texas Parks and Wildlife Department's Species of Concern – Collin County

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present	Species Effect	Species Impact
MOLLUSKS						
Fawnsfoot *Truncilla donaciformis*	—		Small and large rivers especially on sand, mud, rocky mud, and sand and gravel, also silt and cobble bottoms in still to swiftly flowing waters; Red (historic), Cypress (historic), Sabine (historic), Neches, Trinity, and San Jacinto River basins.	Yes	- -	A Fawnsfoot habitat survey was completed on January 21, 2011 within the waters of Brinlee Branch. No mollusks were found, therefore, the project would not impact this species.
Little spectaclecase *Villosa lienosa*	—		Creeks, rivers, and reservoirs, sandy substrates in slight to moderate current, usually along the banks in slower currents; east Texas, Cypress through San Jacinto River basins.	No	- -	No impact
Louisiana pigtoe *Pleurobema riddellii*	—	T	Streams and moderate-size rivers, usually flowing water on substrates of mud, sand, and gravel; not generally known from impoundments; Sabine, Neches, and Trinity (historic) River basins.	Yes	- -	The creeks experience fluctuating water levels, long term dewatering, therefore, the project would not impact this species.
Texas heelsplitter *Potamilus amphichaenus*	—	T	Quiet waters in mud or sand and also in reservoirs. Sabine, Neches, and Trinity River basins.	Yes	- -	The creeks experience fluctuating water levels, long term dewatering, therefore, the project would not impact this species.
Wabash pigtoe *Fusconaia flava*	—		Creeks to large rivers on mud, sand, and gravel from all habitats except deep shifting sands; found in moderate to swift current velocities; east Texas River basins, Red through San Jacinto River basins; elsewhere occurs in reservoirs and lakes with no flow.	Yes	- -	The creeks experience fluctuating water levels, long term dewatering, therefore, the project would not impact this species.
REPTILES						
Alligator snapping turtle *Macrochelys temminckii*	—	T	perennial water bodies; deep water of rivers, canals, lakes, and oxbows; also swamps, bayous, and ponds near deep running water; sometimes enters brackish coastal waters; usually in water with mud bottom and abundant aquatic vegetation; may migrate several miles along rivers; active March-October; breeds April-October.	No	- -	No impact

Table 13 Federal, State Listed Threatened/Endangered Species, and Texas Parks and Wildlife Department's Species of Concern – Collin County

Species	Federal Status	State Status	Description of Suitable Habitat	Habitat Present	Species Effect	Species Impact
Texas garter snake *Thamnophis sirtalis annectens*	—		Wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August.	Yes	- -	Suitable habitat could be impacted; however, this habitat is abundant adjacent to the proposed project area.
Texas horned lizard *Phrynosoma cornutum*	—	T	Open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September.	No	- -	No impact
Timber/Canebrake rattlesnake *Crotalus horridus*	—	T	Swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto.	Yes	- -	Suitable habitat could be impacted; however, this habitat is abundant adjacent to the proposed project area.

E – Endangered
T – Threatened
DM – Delisted taxon, recovered, being monitored first five years
"—" – No designation occurring within identified county
"blank" – Rare, but with no regulatory listing status
"- -" – No determination of effect or impact required because species lacks federal and/or state listing status
"*" – TPWD T&E species list indicates species could be present in identified county; however, USFWS T&E species list does not indicate a listing status for the species in the county.

Sources: *U.S. Fish & Wildlife Service (March 31, 2011), Texas Parks & Wildlife Department, Wildlife Division, Diversity and Habitat Assessment Programs, County Lists of Texas Special Species (Collin, February 28, 2011), and Field Visit (June 2009).*

4.7 Waters of the U.S. and Wetlands

4.7.1 Lakes, Rivers and Streams

The proposed project crosses Fitzhugh Branch, Clemons Creek, Stiff Creek, a tributary to Brinlee Branch, Sister Grove Creek, Pilot Grove Creek, Desert Creek and nine unnamed tributaries thereof. These waterway are not navigable waterways; therefore, a navigational clearance under the General Bridge Act of 1946, Section 9 of the Rivers and Harbors Act of 1899 (administered by the U.S. Coast Guard [USCG]), and Section 10 of the Rivers and Harbors Act of 1899 (administered by the U.S. Army Corps of Engineers [USACE]) is not applicable. Coordination with the USCG (for Section 9 and the Bridge Act) and the USACE (for Section 10) would not be required.

Desert Creek flows into Pilot Grove Creek. Pilot Grove Creek rises in southeastern Grayson County two miles west of Whitewright. The East Branch of Pilot Grove Creek rises one mile west of Whitewright and joins the main branch two miles north of the town of Pilot Grove. The West Branch rises near the town Tom Bean and runs southeast for 6 miles to its mouth on the main branch a mile west of Pilot Grove. The stream runs south for 34 miles through Grayson and Collin counties before emptying into Lake Lavon in central Collin County a mile east of Culleoka. Stiff Creek and Brinlee Branch flow into Sister Grove Creek, which rises from the

confluence of east and west prongs 2.5 miles east of Van Alstyne in extreme southeastern Grayson County. It enters Collin County three miles southeast of Van Alstyne and flows southeast before emptying into Lake Lavon in central Collin County. Fitzhugh Creek flows into Clemons Creek. Clemons Creek flows into the East Fork Trinity River above Lake Lavon.

Pilot Grove Creek, Segment 0821A; Sister Grove Creek, Segment 0821B; and the East Fork Trinity River above Lake Lavon, Segment 0821D flow into Lake Lavon, Segment 0821. Segment 0821 (impaired for public water supply use) is listed in the Texas Commission on Environmental Quality (TCEQ) Water Quality Inventory and is not listed on the 2008 Clean Water Act (CWA) Segment 303(d) list.

4.7.2 Section 404 of the Clean Water Act: Waters of the U.S.

An analysis of USGS topographic maps, FEMA maps, and field reconnaissance reveals potentially jurisdictional waters of the U.S. that would be impacted by the proposed project. The proposed project would cross 16 jurisdictional waters of the U.S as described in **Table 14**. The culvert structures and bridge structures would be removed and reconstructed throughout the project. Two locations contain hydrophytic vegetation and wetland hydrology present at a tributary to Sister Grove and a tributary to Clemons Creek. These locations lacked the hydric soil indicators necessary to classify the area as a wetland. The wetland and stream data point locations are depicted on **Figure 3**. Stream data forms are located in **Appendix A**. Wetland data forms are located in **Appendix C**.

Table 14 Stream Crossing Impacts

Number	Crossing	Type	Roadway Width (ft)	OHWM (ft)		Area (sq ft)	Area (acres)
				In ROW	Out ROW		
1	Fitzhugh Branch	Intermittent	88	6	4	528	0.012
2	Tributary to Clemons Creek	Intermittent	88	15	6	1,320	0.030
3	Tributary to Clemons Creek	Intermittent	88	4	8	880	0.020
4	Clemons Creek	Perennial	88	20	15	Bridge	Bridge
5	Stiff Creek	Intermittent	88	8	6	704	0.016
6	Tributary to Brinlee Branch	Ephemeral	88	6	2	528	0.012
7	Tributary to Sister Grove Creek	Perennial	88	10	8	Bridge	Bridge
8	Tributary to Sister Grove Creek	Intermittent	88	4	4	352	0.008
9	Tributary to Sister Grove Creek	Intermittent	88	25	6	2,200	0.051
10	Sister Grove Creek	Intermittent	88	60	35	Bridge	Bridge
11	Tributary to Sister Grove Creek	Ephemeral	88	3	3	264	0.006
12	Tributary to Pilot Grove Creek	Intermittent	88	15	15	1,320	0.030
13	Tributary to Pilot Grove Creek	Intermittent	88	10	10	880	0.020
14	Pilot Grove Creek	Perennial	88	40	30	Bridge	Bridge
15	Tributary to Pilot Grove Creek	Intermittent	88	12	7	528	0.012
16	Desert Creek	Intermittent	88	35	5	Bridge	Bridge
Total						24,024	0.218

Notification to the USACE of impacts to jurisdictional waters of the U.S. is required if a proposed project meets certain requirements. NWP 14 states that for projects in non-tidal waters, the discharge cannot cause the loss of greater than 0.5 acre of waters of the U.S.

The placement of temporary or permanent dredge or fill material into jurisdictional waters of the U.S. for this proposed project would be authorized under NWP 14, *Linear Transportation Crossings* without a pre-construction notification (PCN) (see **Table 15**).

Table 15 Waters of the U.S.

Name of Water Body	Stream Form Number	Structure		Fill			NWP	PCN (Y/N)
		Existing	Proposed	Waters (acres and linear feet)	Wetlands or other aquatic sites (acres)	Temporary Waters (acres and linear feet)		
Fitzhugh Branch	1	Culvert	Culvert	Less than 0.01 ac 88 ft	N/A	Less than 0.01 ac 88 ft	14	N
Tributary to Clemons Creek	2	Culvert	Culvert	0.03 ac 1,320 ft	N/A	Less than 0.01 ac 1,320 ft	14	N
Tributary to Clemons Creek	3	Culvert	Culvert	0.02 ac 880 ft	N/A	Less than 0.01 ac 880 ft	14	N
Clemons Creek	4	Bridge	Bridge	N/A	N/A	Less than 0.01 ac 50 ft	14	N
Stiff Creek	5	Culvert	Culvert	0.02 ac 704 ft	N/A	Less than 0.01 ac 704 ft	14	N
Tributary to Brinlee Branch	6	Culvert	Culvert	0.01 ac 528 ft	N/A	Less than 0.01 ac 528 ft	14	N
Tributary to Sister Grove Creek	7	Bridge	Bridge	N/A	N/A	Less than 0.01 ac 50 ft	14	N
Tributary to Sister Grove Creek	8	Culvert	Culvert	Less than 0.01 ac 352 ft	N/A	Less than 0.01 ac 352 ft	14	N
Tributary to Sister Grove Creek	9	Culvert	Culvert	0.05 ac 2,200 ft	N/A	Less than 0.01 ac 2,200 ft	14	N
Sister Grove Creek	10	Bridge	Bridge	N/A	N/A	Less than 0.01 ac 50 ft	14	N
Tributary to Sister Grove Creek	11	Culvert	Culvert	Less than 0.01 ac 264 ft	N/A	Less than 0.01 ac 264 ft	14	N
Tributary to Pilot Grove Creek	12	Culvert	Culvert	0.03 ac 1,320 ft	N/A	Less than 0.01 ac 1,320 ft	14	N
Tributary to Pilot Grove Creek	13	Culvert	Culvert	0.02 ac 880 ft	N/A	Less than 0.01 ac 880 ft	14	N
Pilot Grove Creek	14	Bridge	Bridge	N/A	N/A	Less than 0.01 ac 50 ft	14	N

Table 15 Waters of the U.S.

Name of Water Body	Stream Form Number	Structure		Fill			NWP	PCN (Y/N)
		Existing	Proposed	Waters (acres and linear feet)	Wetlands or other aquatic sites (acres)	Temporary Waters (acres and linear feet)		
Tributary to Pilot Grove Creek	15	Culvert	Culvert	0.01 ac 528 ft	N/A	Less than 0.01 ac 528 ft	14	N
Desert Creek	16	Bridge	Bridge	Bridge	N/A	Less than 0.01 ac 50 ft	14	N

The activities at the described stream crossings have been identified as single and complete projects as defined in the NWPs and would therefore be permitted independently.

A PCN for NWP 14 at each of the stream crossings would not be required because impacts at each crossing potential impacts would be less than 0.1 acre and no wetlands would be impacted. There is no potential to affect federal listed species or designated critical habitat, or any historic properties listed or eligible for listing on the NRHP.

Appropriate measures would be taken to maintain normal downstream flows and minimize flooding. Temporary fills would consist of materials and be placed in a manner that would not be eroded by expected high flows. Temporary fills would be removed in their entirety and the affected area returned to pre-construction elevations, and revegetated as appropriate. The activity would comply with all general and regional conditions applicable to NWP 14.

4.8 Water Quality

4.8.1 Section 401 of the Clean Water Act: Water Quality Certification

The 401 Certification requirements for NWP 14 would be met by implementing approved best management practices (BMPs) from the TCEQ's 401 Water Quality Certification Conditions for NWPs. Category I would be addressed by applying temporary reseeding (TxDOT-approved seeding specifications) and mulch to disturbed areas. Category II would be addressed by installing silt fences combined with rock berms. Category III Post-Construction TSS Control devices would consist of grass swales.

4.8.2 Executive Order 11990: Wetlands

Executive Order 11990 on wetlands does not apply because no wetlands would be impacted.

4.8.3 Section 402 of the Clean Water Act: Texas Pollutant Discharge Elimination System (TPDES), Construction General Permit (CGP)

This proposed project would disturb more than five acres. TxDOT would comply with TCEQ's Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP). A Storm Water Pollution Prevention Plan (SW3P) would be implemented, and a construction site notice would be posted on the construction site. A Notice of Intent (NOI) would be required.

To minimize impacts to water quality during construction, the proposed project would utilize temporary erosion and sedimentation control practices (i.e., silt fence, rock berm, and drainage

swales) from TxDOT's manual *Standard Specifications for the Construction of Highways, Streets, and Bridges*. The erosion control would be temporary vegetation and mulch. The sedimentation control would be silt fence and rock berms.

Where appropriate, these temporary erosion and sedimentation control structures would be in place prior to the initiation of construction and would be maintained throughout the duration of the construction. Clearing of vegetation would be limited and/or phased in order to maintain a natural water quality buffer and minimize the amount of erodible earth exposed at any one time.

General Condition 21 (Water Quality) of the NWP Program requires applicants using NWP 14 to comply with Section 401 of the Clean Water Act. Compliance with Section 401 requires the use of BMPs to manage water quality on construction areas. The SW3P would include at least one BMP from the 401 Water Quality Certification Conditions for NWPs as published by the TCEQ, April 26, 2007. These BMPs would address each of the following categories:

- Category I Erosion Control,
- Category II Sedimentation Control, and
- Category III Post Construction Total Suspended Solids (TSS).

Category I would be addressed by applying temporary reseeding (TxDOT-approved seeding specifications) and mulch to disturbed areas. Category II would be addressed by installing silt fences combined with rock berms. Category III Post-Construction TSS Control devices would consist of grass swales. Erosion control devices would be implemented and maintained until construction is complete. Sedimentation control devices would be maintained and remain in place until completion of the project.

4.8.4 Section 402 of the Clean Water Act: TPDES, Municipal Separate Storm Sewer System (MS4)

This proposed project is located within the boundaries of the City of Melissa Municipal Separate Storm Sewer System (MS4), and would comply with the applicable MS4 requirements.

4.8.5 Section 303(d) of the Clean Water Act

The proposed project crosses many streams; from south to north, the named streams are: Fitzhugh Branch, Clemons Creek, Stiff Creek, tributary to Brinlee Branch, Sister Grove Creek, Pilot Grove Creek, Desert Creek, and nine unnamed tributaries. Runoff from this proposed project would discharge directly into Pilot Grove Creek, Segment 0821A and Sister Grove Creek, Segment 0821B, which flow into Lake Lavon, Segment 0821. Segment 0821 (impaired for public water supply use) is listed in the TCEQ Water Quality Inventory and is not listed on the CWA Segment 303(d) list. The proposed project is more than five miles upstream of a threatened or impaired water segment.

4.9 Floodplain Impacts

According to the FEMA Flood Insurance Rate Map (FIRM) *(Flood Hazard Boundary Map Community Panel Nos. 48085C0175G, 48085C0200G, 48085C0100G,* revised January 19, 1996), the proposed project would cross Zone A. Zone A is the approximate 100-year flood plain boundary; however, no base flood elevation or flood hazard factors have been determined. The proposed project is outside of the Trinity River Corridor Development Regulatory Zone and a Corridor Development Certificate would not be required.

The hydraulic design practices for this proposed project would be in accordance with current TxDOT design policy and standards. The highway facility would permit conveyance of the design-year flood levels, inundation of the roadway being acceptable, without causing substantial damage to the highway, stream or other property. Collin County is a participant in the National Flood Insurance Program (NFIP). The City of Anna is a participant in the NFIP and the City of Melissa is not a participant in the NFIP. The proposed project would not increase the base flood elevation to a level that would violate the applicable floodplain regulations or ordinances, therefore, no coordination with the FEMA or the local floodplain administrator would be required.

4.10 Soils/Farmland

4.10.1 Soils

The Natural Resources Conservation Service (NRCS) *Soil Survey of Collin County, Texas* (June *1969*) indicates that the soil types within the proposed project area are as listed in **Table 16**.

Table 16 Soil Types within Proposed Project Area

Soil Type	Symbol	Description	Percent of Total (%)	Prime Farmland
Altoga silty clay	AlD2	5-8% slopes, upland and stream terraces	1	No
Austin silty clay	AuB	1-3% slopes, convex knolls and ridges	2	Yes
Burleson clay	BcB	1-3% slopes, stream terraces	1	Yes
Eddy gravelly clay loam	EdD2	3-8% slopes, convex ridges and knobs and in areas of natural drains	2	No
Frio clay loam	Ff	0-1% slopes, frequently flooded, floodplains along major streams	2	No
Houston Black clay	HoB	1-3% slopes, most extensive soil in the county, uplands and stream terraces	77	Yes
Hunt clay	HuB	1-3% slopes, uplands	1	Yes
Lewisville silty clay	LeC2	3-5% slopes, stream terraces and areas that slope to streams	4	No
Trinity clay	To	0-1% slopes, occasionally flooded, floodplains along major streams	4	Yes

Source: *U.S. Dept of Agriculture Collin County Soil Survey (1969)*

4.10.2 Farmland Protection Policy Act (FPPA)

A majority of additional required ROW is rural in nature. Prime farmland soils within the proposed project include Austin silty clay (AuB), Burleson clay (BcB), Houston Black clay (HoB), Hunt clay (HuB), and Trinity clay (To). Approximately 380 acres of prime and/or important farmland soils are located within the proposed project area.

In accordance with the Farmland Protection Policy Act (FPPA), the additional ROW has been scored using the U.S. Department of Agriculture's Farmland Conversion Impact Rating Form (Form AD-1006). The resulting score was below that required to cause coordination with the NRCS (**Appendix E**).

4.11 Noise

4.11.1 Traffic Noise Analysis

The noise analysis for the proposed project was accomplished in accordance with TxDOT's (FHWA approved) 2011 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), detailed in **Table 17**, for various land use activity areas that are used as one of two means to determine when a traffic noise impact will occur.

Table 17 FHWA Noise Abatement Criteria

Activity Category	FHWA dBA Leq	TxDOT dBA Leq	Description of Land Use Activity Areas
A	57 (exterior)	56 (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)	66 (exterior)	Residential
C	67 (exterior)	66 (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools , television studios, trails, and trail crossings

Table 17 FHWA Noise Abatement Criteria

Activity Category	FHWA dBA Leq	TxDOT dBA Leq	Description of Land Use Activity Areas
D	52 (interior)	51 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios
E	72 (exterior)	71 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	--	Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	--	Undeveloped lands that are not permitted.

NOTE: primary consideration is given to exterior areas (Category A, B, C, or E) where frequent human activity occurs. However, interior areas (Category D) 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 as described below:

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 (see **Table 18** and **Figure 3**) 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 18 Traffic Noise Levels (dBA Leq)

Receiver	NAC Category	NAC Level	Existing 2012	Predicted 2032	Change (+/-)	Noise Impact
R1 – Residential	B	67	63	66	+3	Y
R2 – Residential	B	67	62	64	+2	N
R3 – Residential	B	67	62	63	+1	N
R4 – Residential	B	67	59	59	0	N
R5 – Residential	B	67	60	60	0	N
R6 – Residential	B	67	63	67	+4	Y
R7 – Residential	B	67	62	67	+5	Y
R8 – Residential	B	67	60	65	+5	N
R9 – Residential	B	67	64	71	+7	Y
R10 – Residential	B	67	63	69	+6	Y
R11 – Residential	B	67	65	72	+7	Y
R12 – Residential	B	67	63	66	+3	Y
R13 – Place of Worship	D	52	42	48	+6	N
R14 - Day Care	E	52	35	42	+7	N
R15 – Residential	B	67	62	66	+4	Y
R16 – Residential	B	67	61	64	+3	N
R17 – Residential	B	67	62	65	+3	N
R18 – Residential	B	67	64	67	+3	Y
R19 – Residential	B	67	62	67	+5	Y
R20 – Residential	B	67	63	66	+3	Y
R21 – Residential	B	67	64	59	-5	N
R22 – Residential	B	67	61	60	-1	N
R23 – Residential	B	67	64	62	-2	N
R24 – Residential	B	67	63	62	-1	N
R25 – Residential	B	67	58	62	+4	N

As indicated in **Table 18**, 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 proposed 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 5 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 5 dBA.

Traffic management: control devices could be used to reduce the speed of the traffic; however, the minor benefit of 1 dBA per 5 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 barriers were evaluated for each of the impacted receiver locations with the following results:

R1, R6, R7, R9, R10, R11, R15, R18, R19, R20: these receivers are separate, individual residences. Noise walls that would achieve the minimum reduction of 5 dBA while achieving a 7 dbA noise reduction design goal would exceed the reasonable, cost-effectiveness criterion of $25,000.

R12: this receiver represents a total of 5 residences. At this receiver, an existing barrier is in place in the form of a 6-ft masonry wall. Noise walls that would achieve the minimum reduction of 5 dBA at each of these receivers would exceed the reasonable, cost-effectiveness criterion of $25,000.

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

To avoid noise impacts that may result from future development of properties adjacent to the proposed project, local officials responsible for land use control programs should ensure, to the maximum extent possible, no new activities are planned or constructed along or within the following predicted (2032) noise impact contours, as indicated in **Table 19**.

Table 19 SH 121 Traffic Noise Contours

Land Use	Impact Contour	Distance from ROW
NAC Category B & C	66 dBA	40 feet
NAC Category E	71 dBA	15 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 proposed project.

4.12 Air Quality

The proposed North Central Texas (NCT) project is located in Collin County, which is part of the Environmental Protection Agency's (EPA) designated nine-county serious nonattainment area for the eight-hour standard for the pollutant ozone and a small part of western Collin County is in non-attainment for lead; therefore, the transportation conformity rule applies. The proposed project is consistent with the area's financially constrained long-range Mobility 2035 (Metropolitan Transportation Plan [MTP]), and the 2011-2014 Transportation Improvement Program (TIP) – 2011 Amendment. The U.S. Department of Transportation (FHWA/FTA) found the MTP and the TIP to conform to the State Implementation Plan on July 14, 2011. All projects in the DFW Metropolitan Area TIP that are proposed for federal or state funds were initiated in a manner consistent with the federal guidelines in Section 450 of Title 23 CFR and Section 613.200, Subpart B of Title 49 CFR. Energy, environment, air quality, cost and mobility considerations are addressed in the programming of the TIP. The appropriate MTP and TIP pages are located in **Appendix D**.

4.12.1 Traffic Air Quality Analysis

Traffic data for the design year 2032 is 34,400 vpd. A prior TxDOT modeling study demonstrated that it is unlikely that a carbon monoxide standard would ever be exceeded as a result of any project with an average daily traffic (ADT) below 140,000 vpd. The ADT projections for the project do not exceed 140,000 vpd; therefore a Traffic Air Quality Analysis was not required.

4.12.2 Congestion Management Process (CMP)

The CMP is a systematic process for managing congestion that provides information on transportation system performance and on alternative strategies for alleviating congestion and enhancing the mobility of persons and goods to levels that meet state and local needs. The proposed project was developed from NCTCOG's operational CMP which meets all requirements of 23 CFR 500.109 incorporating the transportation planning requirements of Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). On March 10, 2011, the NCTCOG's Regional Transportation Council (RTC) approved the MTP, which contains elements of the CMP.

Operational improvements and travel demand reduction strategies are commitments made by the region at two levels: program level and project level implementation. Program level commitments are inventoried in the regional CMP; they are included in the financially constrained MTP, and future resources are reserved for their implementation.

The CMP element of the plan carries an inventory of all project commitments (including those resulting from major investment studies) detailing type of strategy, implementing responsibilities, schedules, and expected costs. At the project programming stage, travel demand reduction strategies and commitments would be added to the regional 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 facility implementation and project specific elements. Individual CMP projects in the area are listed in **Table 20.**

Table 20 Congestion Management Process Projects

Project Code	Street/Name	City	County	Implementing Agency	Project Type	Year of Implement ation	Total Project Cost
20084	US 75 from Outer Loop (CR 366) to Grayson Co Line	Various	Collin	TXDOT-Dallas	Other	2030	$6,250,000
20032	FM 455 From US 75 NB Frontage RD to SH 5	Melissa	Collin	TXDOT-Dallas	Addition of Lanes	2009	$10,465,554
20085	SH 5 From SH 121 to FM 455	Melissa/ Anna	Collin	TXDOT-Dallas	Other	2009	$2,500,000
20088	Outer Loop From Denton County Line to Rockwall County Line	Collin County	Collin	NCTCOG	Other	2009	$6,250,000
20089	Outer Loop from US 75 to SH 121	Anna	Collin	Collin County	New Roadway	2009	$15,000,000
52559	FM 455 from SH 5 to West of Wild Rose Ln	Melissa	Collin	TXDOT-Dallas	Addition of Lanes	2030	$19,659,162
20095	US 75 from Wilson Creek to US 380	McKinney	Collin	TXDOT-Dallas	ITS	2009	$2,270,000
20031	US 75 from Wilson Creek to US 380	McKinney	Collin	TXDOT-Dallas	Addition of Lanes	2010	$53,784,738

Source: *NCTCOG*

In an effort to relieve traffic congestion and the need for single occupant vehicle (SOV) lanes in the region, TxDOT and NCTCOG will continue to promote appropriate congestion management strategies through the Congestion Mitigation and Air Quality program, the CMP, and the MTP. The congestion reduction strategies considered for the proposed project would help alleviate congestion in the SOV study boundary, but would not eliminate it. The CMP analysis for added SOV capacity projects in the TMA is on file and available for review at NCTCOG.

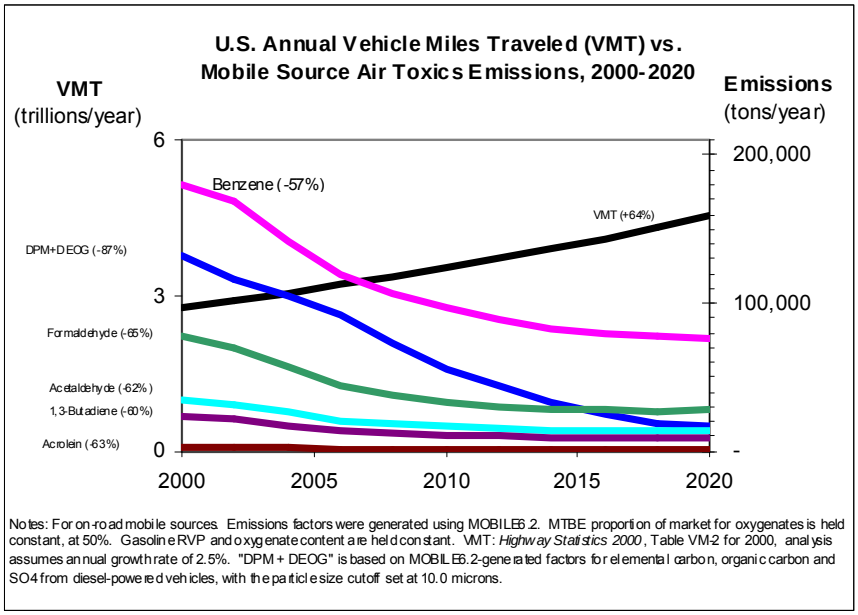
4.12.3 Mobile Source Air Toxics (MSATs)

In addition to the criteria air pollutants for which there are NAAQS, the 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).

MSATs are a subset of the 188 air toxics defined by the CAA. 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 CAA and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on *Controlling Emissions of Hazardous Air Pollutants from Mobile Sources* (66 FR 17229, March 29, 2001). This rule was

issued under the authority in Section 202 of the CAA. 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, the FHWA projects that even with a 64 percent increase in vehicle miles traveled (VMT), these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 to 65 %, and will reduce on-highway diesel PM emissions by 87%, as shown in the following graph:



In an ongoing review of MSATs, the EPA finalized additional rules under authority of CAA Section 202(l) to further reduce MSAT emissions that are not reflected in the above graph. The EPA issued Final Rules on Control of Hazardous Air Pollutants from Mobile Sources (72 FR 8427, February 26, 2007) under Title 40 CFR Parts 59, 80, 85 and 86. The rule changes were effective April 27, 2007. As a result of this review, EPA adopted the following new requirements to significantly lower emissions of benzene and the other MSATs by: (1) lowering the benzene content in gasoline; (2) reducing non-methane hydrocarbon (NMHC) exhaust emissions from passenger vehicles operated at cold temperatures (under 75 degrees Fahrenheit); and (3) reducing evaporative emissions that permeate through portable fuel containers.

Beginning in 2011, petroleum refiners must meet an annual average gasoline benzene content standard of 0.62 percent by volume, for both reformulated and conventional gasolines, nationwide. The national benzene content of gasoline in 2007 is about 1.0 percent by volume. EPA standards to reduce NMHC exhaust emissions from new gasoline-fueled vehicles will become effective in phases. Standards for light-duty vehicles and trucks (equal to or less than 6000 pounds [lbs]) become effective during the period of 2010 to 2013, and standards for heavy light-duty trucks (6,000 to 8,000 lbs) and medium-duty passenger vehicles (up to 10,000 lbs) become effective during the period of 2012 to 2015. Evaporative requirements for portable gas containers become effective with containers manufactured in 2009. Evaporative emissions must be limited to 0.3 grams of hydrocarbons per gallon per day.

EPA has also adopted more stringent evaporative emission standards (equivalent to current California standards) for new passenger vehicles. The new standards become effective in 2009 for light vehicles and in 2010 for heavy vehicles. In addition to the reductions from the 2001 rule, the new rules will significantly reduce annual national MSAT emissions. For example, EPA estimates that emissions in the year 2030, when compared to emissions in the base year prior to the rule, will show a reduction of 330,000 tons of MSATs (including 61,000 tons of benzene), reductions of more than 1,000,000 tons of volatile organic compounds, and reductions of more than 19,000 tons of PM2.5.

4.12.3.1 Project Specific MSAT Information

Numerous technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this proposed project (see "Unavailable Information for Project Specific MSAT Impact Analysis" for more information). In Chapter 3 of its Regulatory Impact Analysis (RIA) for the 2007 MSAT rules, EPA states that there are a number of additional significant uncertainties associated with the air quality, exposure and risk modeling. The modeling also has certain key limitations such as the results are most accurate for large geographic areas, exposure modeling does not fully reflect variation among individuals, and non-inhalation exposure pathways and indoor sources are not taken into account. Chapter 3 of the RIA is found at: http://www.epa.gov/otaq/regs/toxics/fr-ria-sections.htm

However, it is possible to qualitatively assess the "relative" levels of future MSAT emissions under the project. Although a qualitative assessment cannot identify and measure health impacts from MSATs, it can give a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, found at: www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm

For each alternative in this EA, the amount of MSATs emitted would be proportional to the vehicle miles traveled (VMT) assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the Build Alternative is slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOBILE6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases would offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

Because the estimated VMT under each of the Alternatives is nearly the same it is expected there would be no appreciable difference in overall MSAT emissions among the alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Even greater reductions are expected by 2030 from EPA's 2007 MSAT rule. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures.

However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

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

4.12.3.2 Sensitive Receptor Analysis

There may be localized areas where ambient concentrations of MSATs are slightly higher in any build scenario than in the No-Build scenario. Dispersion studies have shown that the "roadway" air toxics start to drop off at about 100 meters (328 ft). By 500 meters (1,640 ft), most studies have found it very difficult to distinguish the roadway related from background air toxic levels in any given area. An assessment of some potential sensitive receptors within both 100 and 500 meters was conducted. Sensitive receptors include those facilities most likely to contain large concentrations of the more sensitive population (hospitals, schools, licensed daycare facilities, and elder care facilities). Sensitive receptors are defined as schools both public and private, licensed day care facilities, hospitals, and elder care facilities. One sensitive receptor was identified within the SH 121 study area, (see **Tables 21** and **22** and **Figure 5**). The identified sensitive receptor is within 100 meters (328 feet) of the study area, as shown in **Table 22**.

Table 21 Sensitive Receptors in the Study Area

Location	Address	Distance to Centerline meters (feet)
Mudpies and Lullabies	6576 Hwy 121, Melissa, TX 75454	49 (160)

Source: Google Earth (2009), Texas Department of Family and Protective Services (2009), field reconnaissance conducted (June 2009)

Table 22 Sensitive Receptors by Distance

Scenario	Number of Receptors within:	
	100 meters (328 feet)	100 meters (328 feet) and 500 meters (1,640 feet)
Build	1	0

Source: *Google Earth (2009), Texas Department of Family and Protective Services (2009), field reconnaissance conducted (June 2009)*

4.12.3.3 Unavailable Information for Project Specific MSAT Impact Analysis

This EA includes a qualitative analysis of the likely MSAT emission impacts of this proposed project. However, available technical tools and lack of health-based MSAT standards do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives in this proposed project. Due to these limitations, the following discussion is included in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information:

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

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

   These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations. However, MOBILE6.2 is currently the only available tool for use by FHWA/TxDOT and, therefore, is used for comparison of alternatives in larger scale projects.

2. Dispersion. The tools to predict how MSATs disperse are also limited. The EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.

3. Exposure Levels and Health Effects. Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs ear roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

4.12.3.4 Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs.

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

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

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

- **Benzene** is characterized as a known human carcinogen.
- The potential carcinogenicity of **acrolein** cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.

- **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.

- **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- **Diesel exhaust** (DE) is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases. Diesel exhaust also represents chronic respiratory effects, possibly the primary non-cancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

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

Some recent studies have reported that proximity to roadways is related to adverse health outcomes - particularly respiratory problems[1]. Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this proposed project.

In the preamble to the 2007 MSAT rule, EPA summarized recent studies with the following statement: "Significant scientific uncertainties remain in our understanding of the relationship between adverse health effects and near-road exposure, including the exposures of greatest concern, the importance of chronic versus acute exposures, the role of fuel type (e.g., diesel or gasoline) and composition (e.g., % aromatics), relevant traffic patterns, the role of co-stressors including noise and socioeconomic status, and the role of differential susceptibility within the 'exposed' populations" (Citation: Volume 73 Federal Register Page 8441 (February 26, 2007) Control of Hazardous Air Pollutants from Mobile Sources).

4.12.3.5 Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of Impacts Based Upon Theoretical Approaches or Research Methods Generally Accepted in the Scientific Community

While available tools do allow us to reasonably predict relative emissions changes between alternatives for this proposed project, the amount of MSAT emissions from the proposed project and MSAT concentrations or exposures created by the proposed project cannot be predicted with enough accuracy to be useful in estimating health impacts. As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects. Therefore, the relevance of the unavailable or incomplete information is that it is not

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

possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

In this document, a qualitative assessment has been provided relative to the MSAT emissions and has acknowledged that the proposed project may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

4.12.4 Construction Emissions

During the construction phase of this project there can be temporary increases in air pollutant emissions from construction activities, equipment, and related vehicles. The primary construction related emissions are particulate matter (fugitive dust) from site preparation and construction and non-road MSAT from construction equipment and vehicles. The primary MSAT emission related to construction is diesel particulate matter from diesel powered construction equipment and vehicles.

These emissions are temporary in nature (only occurring during actual construction) and it is not reasonably possible to estimate impacts from these emissions due to limitations of the existing models. However, the potential impacts of particulate matter emissions will be minimized by using fugitive dust control measures such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate. The MSAT emissions will be minimized by measures to encourage use of EPA required cleaner diesel fuels, limits on idling, increasing use of cleaner burning diesel engines, and other emission limitation techniques, as appropriate.

However, considering the temporary and transient nature of construction related emissions as well as the mitigation actions to be utilized, it is not anticipated that emissions from construction of this project will have any significant impact on air quality in the area.

4.13 Hazardous Materials

4.13.1 Site Survey

TxDOT uses the initial site assessment (ISA) to evaluate property that may be affected by contamination. The purpose of an ISA is to gather as much information about the possible presence of contamination within the proposed project limits. The components of the ISA as outlined in TxDOT's Hazardous Materials in Project Development Manual, Section 2, Site Assessments and Investigations, include reviewing project design, ROW requirements, existing and previous land use and reviewing regulatory agency databases and files. A visual survey of the proposed project, conducted on June 18, 2009, revealed no evidence of contamination. A regulatory data record search of Federal, State, and local databases for possible hazardous materials sites and/or impacted areas was completed on January 10, 2007 to help determine the potential presence of recorded or suspected environmental contamination within the proposed project area. This search was performed using American Society for Testing and Materials (ASTM) standard search radii.

The following is a list of the federal and state standard ASTM databases that were reviewed: EPA National Priorities List, EPA Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) List, CERCLIS No Further Remedial Action Planned, EPA Resource Conservation and Recovery Information System (RCRIS) or RCRA Notifiers List,

RCRA Corrective Action Sites List, RCRIS Treatment, Storage and Disposal list, EPA Emergency Response Notification System, TCEQ State Superfund Registry, TCEQ Registered Underground Petroleum Storage Tank List, TCEQ LUST List, TCEQ Solid Waste Municipal Landfill Facility List, TCEQ Closed Landfill Inventory, and TCEQ VCP. Other supplemental ASTM databases reviewed that had sites within the proposed project area included EPA Facility Index System, TCEQ Registered Aboveground Storage Tank list and TCEQ Industrial and Hazardous Waste Site list.

There were nine hazardous materials sites detected within the proposed project vicinity. Four of the sites are listed as leaking underground storage tanks (LUST). One LUST is adjacent to the proposed project and three are within 0.8 mi of the proposed project. Three State Spills sites are reported more than 0.5 mile from the proposed project and one Emergency Response Notification System (ERNS) site is located more than 0.25 mile from the proposed project. One site listed in the Voluntary Cleanup Program (VCP), a dry cleaning operation, is also located more than 0.25 mile from the proposed project. The TCEQ LUST List was checked for an updated status on tanks located near the proposed project on June 19, 2009. **Table 23** lists the sites which are a potential concern for contamination of soil and/or water. A copy of the regulatory data obtained and reviewed for this proposed project which includes a site map of the regulated facilities is located at the TxDOT Dallas District office.

Table 23 Hazardous Waste/Substance Sites

Property Name	Property Location	Type of Contamination	Status	Location	Gradient	Priority of Concern
Former gas station (Next to Circle V)	12574 SH 121, Anna, TX	Not listed (ROW is required)	N/A	Adjacent	Up	High

Source: *Database search (2007) and TCEQ LPST Data List Query (2009)*

An analysis of the data obtained from the regulatory database search and site investigation indicate that there are four areas of concern. Three of these potential HazMat areas, Kim's Korner (Texaco) at 2148 SH 21 Melissa, TX, PDQ Diamond Shamrock at 2312 SH 121, Melissa, TX and Melissa Beverage at 2210 SH 121, Melissa, TX are located in areas of the proposed project where no new ROW would be required and therefore no potential impacts are anticipated. One potential site where ROW would be required is listed in **Table 23** as high risk level. This is a former gas station (next to Circle V Restaurant) at 12574 SH 121, Anna, TX. The former gas station in Anna is a location where additional ROW (20 ft) is proposed; however, impacts to the pumps are not anticipated. Additional investigation may be required at this location prior to ROW acquisition.

As the plans, specifications and estimate are developed, TxDOT would continue to evaluate the potential for these facilities to affect the proposed project construction. This may require the performance of subsurface investigations, as determined necessary. If impacted soils and groundwater are encountered, then TxDOT would develop appropriate soils and/or groundwater management plans for activities within the proposed project area. The management plans would be initiated in accordance with all applicable federal, state and local regulations. Should hazardous materials be discovered as the result of the implementation of this proposed project, they would be removed. The removal and disposal process would comply with applicable Federal, State, and local laws.

4.13.2 Petroleum Storage Tanks (PSTs)

Within the proposed project limits, there are 16 petroleum storage tanks (RPST) facilities. District ROW would be notified of the PST regulatory status and exact location.

4.13.3 Leaking Petroleum Storage Tanks (LPSTs)

Since excavation of greater than 3 ft and storm sewers or utility adjustments would be required as part of the proposed project, the leaking petroleum storage tank (LPST) and RPST files for facilities adjacent to the proposed project limits were reviewed:

- LPST No. 115450 is the PDQ Diamond Shamrock located at 2312 SH 121 in Melissa, Texas. The leak was reported on September 4, 2001. As of January 2009, the status and priority of the site indicates that groundwater is impacted and quarterly monitoring is in progress. The TCEQ reports that additional monitoring is warranted to confirm the effectiveness of the groundwater treatment program.

- LPST No. 110024 is Melissa Beverage and is located at 2210 SH 121 in Melissa, Texas. The site was reported on October 30, 1995. As of December, 1998, the facility is listed as 6A (Final Concurrence Issued, Case Closed).

- LPST No. 110199 is Kim's Korner at 2148 SH 121 in Melissa, Texas. The site was reported on December 27, 1995. As of May, 2004, the facility is listed as 6A (Final Concurrence Issued, Case Closed).

- LPST No. 111712 is Switzer 310 Beverage Store located at SH 121 and SH 5 in Melissa, Texas. The site was reported on September 25, 1996. As of August 1997, the facility is listed as 6A (Final Concurrence Issued, Case Closed).

No new ROW is proposed for acquisition from the Kim's Korner, Melissa Beverage and PDQ Diamond Shamrock locations.

Proposed ROW takes including corner cuts to better facilitate right hand turns off SH 121 would occur at the Switzer 310 Beverage Store locations. Additional investigation may be required at the one location listed in **Table 23** prior to ROW acquisition.

4.13.4 Pipelines

During the preliminary investigations, pipelines were found to bisect the proposed project. The Crosstex North Texas Pipeline, L. P. operates a natural gas transmission pipeline that crosses SH 121 approximately 2 miles southwest of the Fannin County line. Negotiations during design phase would be conducted with the owners to avoid any potential impacts to the pipelines.

4.13.5 Landfills

During the preliminary investigation, no landfills were identified within the proposed project area. However, a landfill does exist just south of the ROW area. The North Texas Municipal Water District (NTMWD) 121 Regional Disposal Facility (121 RDF) is located at 3802 Highway 121 North in Melissa, Texas adjacent to the proposed project. The NTMWD 121 RDF opened in August of 2004 and is a component of the NCTCOG solid waste master plan. The 121 RDF is permitted as a Type 1 solid waste facility, where only municipal waste collected from communities, commercial, institutional, recreational, construction and demolition disposal will be accepted. No hazardous waste is ever accepted at any of the NTMWD's facilities.

4.14 Visual Impacts

Visual impacts affect communities from two perspectives: the view from the road and the view of the road. The view from the road is from the user's perspective and leaves a lasting impression of the community, area or region on the visitor as well as residents. The view of the road by the resident contributes to the feeling of community value and pride. The proposed improvements include widening the roadway from a two-lane rural highway to a four-lane divided roadway. TxDOT would design and promote construction practices that minimize adverse visual effects.

The proposed project would not drastically change views and the visual quality of the corridor. There would not be substantial changes in roadway topography or vertical grade changes. The acquisition of additional ROW would not result in homes being located noticeably closer to the existing roadway.

4.15 Wild and Scenic Rivers

There are no wild and scenic rivers within the proposed 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.

4.16 Construction Impacts

A traffic control plan would be included in the engineering plans for this proposed project. These plans would not involve the closure of any streets. Existing access to adjacent properties would be maintained. Due to the location of this proposed project, impact to existing traffic is anticipated to be minimal during the construction phase. Three businesses would be displaced by the proposed project.

Due to operations normally associated with road construction, there is a possibility that noise levels would be above normal in the areas adjacent to the ROW. Construction is normally limited to daylight hours when occasional loud noises are more tolerable. Due to the relatively short-term exposure periods imposed on any one receptor, extended disruption of normal activities is not considered likely. Provisions would be included in the plans and specifications that require the contractor to make every possible effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance or muffler systems.

During the construction phase of this project there can be temporary increases in air pollutant emissions from construction activities, equipment, and related vehicles. The primary construction related emissions are particulate matter (fugitive dust) from site preparation and construction and non-road MSAT from construction equipment and vehicles. The primary MSAT emission related to construction is diesel particulate matter from diesel powered construction equipment and vehicles.

These emissions are temporary in nature (only occurring during actual construction) and it is not reasonably possible to estimate impacts from these emissions due to limitations of the existing models. However, the potential impacts of particulate matter emissions will be minimized by using fugitive dust control measures such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate. The MSAT emissions will be minimized by measures to encourage use of EPA required cleaner diesel fuels, limits on idling, increasing use of cleaner burning diesel engines, and other emission limitation techniques, as appropriate.

However, considering the temporary and transient nature of construction related emissions as well as the mitigation actions to be utilized, it is not anticipated that emissions from construction of this proposed project would have any significant impact on air quality in the area.

4.17 Items of a Special Nature

4.17.1 Airway-Highway Clearance

The proposed project corridor is not within 20,000 ft of an airport. Aircraft clearance issues are not associated with the proposed project.

5.0 INDIRECT IMPACTS

This section describes the indirect impact assessment prepared for the proposed project. The assessment was conducted in accordance with FHWA and CEQ regulations and FHWA guidance documents. TxDOT's updated "*Guidance on Preparing Indirect and Cumulative Impact Analyses*," September 2010 was used as a reference guide.

The CEQ defines indirect effects as "effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 CFR § 1508.8). Guidance on indirect effects described in the Transportation Research Board's (TRB) National Cooperative Highway Research Program (NCHRP) Report 25-25, Task 22: *Forecasting Indirect Land Use Effects of Transportation Projects* (TRB, 2007) and NCHRP Report 466: *Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects* (TRB, 2002) was referenced.

Examples of potential indirect effects include: Development and land use changes due to improved access; Increases in storm water runoff due to changes in land use and increased development; Increased sedimentation of wetlands and streams and decreased water quality due to future development of adjacent land; Loss of wildlife habitat; Impact to cultural resource sites; Increased use of recreational areas due to more convenient access provided by the new facility; stimulation of the local economy from the circulation of construction spending; improved access to employment opportunities, markets, goods, or services such as health and education; an increased work force related to construction; and development stemming from the Build Alternative.

Table 24 depicts the screened potential indirect effects identified to be studied in indirect effect analysis separated by the potential type of indirect effect anticipated.

Table 24 Three General Categories of Indirect Effects

Resource	Encroachment/Alteration		Access Alteration	Project-Influenced Development Effects
	Ecological	Socioeconomic		
Waters of the U.S.	Degradation of habitat, Disruption of natural hydrology	N/A	N/A	Additional degradation of habitat, Additional disruption of natural hydrology
Water Quality	Pollution effects	N/A	N/A	Additional pollution effects

Table 24 Three General Categories of Indirect Effects

Resource	Encroachment/Alteration		Access Alteration	Project-Influenced Development Effects
	Ecological	Socioeconomic		
Floodplains	Degradation of habitat, Disruption of natural hydrology	N/A	N/A	Additional degradation of habitat, Additional disruption of natural hydrology
Wildlife habitat	Habitat fragmentation, Degradation of habitat	N/A	N/A	Additional habitat fragmentation, Additional degradation of habitat
Farmlands	Increased impervious cover	Changes in land use	Reduced access to farmland	Additional changes in land use, Additional reduced access to farmland; Additional increase in impervious cover
Vegetation	Reduction in diversity, Reduction in vegetation	Change in perceived quality of the natural environment	N/A	Additional reduction in diversity, Additional reduction in vegetation, Additional change in perceived quality of the natural environment
Socioeconomics	N/A	Changes in local economy, Changes in travel patterns, Changes in neighborhood stability	Changes in access to services	Additional changes in local economy, Additional changes in travel patterns, Additional changes in neighborhood stability, Additional changes in access to services
Public Facilities and Services	N/A	Increased use of public facilities and services	Changes in access to services	Additional changes in access to services; Additional increased use of public facilities and services
Relocations and Displacements	N/A	Increased relocations and displacements	N/A	Additional increased relocations and displacements
Air Quality	Development-induced reduction in air quality	N/A	N/A	Additional development-induced reduction in air quality
Land Use	Increased impervious cover	Change in perceived quality of the natural environment	N/A	Additional increased impervious cover; Additional change in perceived quality of the natural environment
Employment	N/A	Increased opportunities for employment	Changes in access to employment centers	Additional changes in access to employment centers, additional increased opportunities for employment

Table 24 Three General Categories of Indirect Effects

Resource	Encroachment/Alteration		Access Alteration	Project-Influenced Development Effects
	Ecological	Socioeconomic		
Mobility	N/A	Changes in travel patterns	Changes in access to services	Additional changes in travel patterns, Additional changes in access to services
Population density and residential development	N/A	Changes in neighborhood stability	Changes in access to potential development	Additional changes in neighborhood stability, Additional changes in access to potential development
Aesthetics	N/A	Change in perceived quality of the natural environment	N/A	Additional change in perceived quality of the natural environment
Tax base	N/A	Changes in local economy	N/A	Additional changes in local economy
Commercial development	N/A	Increased opportunities for development	Changes in access to potential development	Additional increased opportunities for development, Additional changes in access to potential development

5.1 Step 1: Scoping

The purpose of **Step 1** is to establish the context for the indirect effects analysis. Information that has been collected in this document includes:

- Banks Information Solutions, Inc. Environmental First Search Report
- 2008 Draft Clean Water Act (CWA) Segment 303(d) list
- NCTCOG demographic projection data
- NRCS Soil Survey of Collin County, Texas
- NWP 14, *Linear Transportation Crossings*
- STIP
- TARL file search
- TPDES General Permit No. TXRI50000
- TPWD Vegetation Types of Texas
- US Census data
- USFWS and TPWD threatened and endangered species lists

A review of these documents was conducted to determine the general direction of study and level of effort required to complete the analysis, and the location and extent of the study area. The indirect effects AOI is often a combination of various boundaries to include political or geographic boundaries, watershed or habitat boundaries, and the project's commuteshed. For this study watersheds, vegetation types, census geographies, population growth, roadway networks, land use development patterns, and political jurisdictions were considered (**Figure 6**).

When these factors were overlaid onto each other, it was determined that the most appropriate AOI is defined by a combination of these considerations with a strong deference to the boundaries of the extraterritorial jurisdiction (ETJ) of the Cities of Melissa, Anna, and Blue Ridge (**Figure 7**). The extraterritorial jurisdiction or ETJ is the legal ability of a government to exercise

authority beyond its normal boundaries. The respective ETJs show anticipated areas of growth while also representing the jurisdictional authority to actively manage land use development therein. The geographic boundaries considered the existing and adjacent census tracts of a reasonable population density.

In considering the boundary, the commuteshed was determined to be areas east of SH 5 and north of Farm-to-Market (FM) 545. Even though the City of Blue Ridge is located southeast of the proposed project, it was included in the AOI due to its location along FM 545. It is assumed that commuters from the City of Blue Ridge would travel along FM 545 west to SH 121 to reach the Dallas/Fort Worth (DFW) metroplex. The City of McKinney is located near the proposed project boundary, but alternate highways and routes are available from the City of McKinney to the DFW metroplex.

The community of Westminster is located at the intersection of FM 3133 and FM 2862, east of the City of Anna, approximately one mile northeast of SH 121; however it is not included in the AOI. Westminster is an unincorporated community with a population of 390 (2000 census). The residents of Westminster voted to abolish their town charter in 2005 and the community is therefore officially unincorporated Collin County. In 1989, Westminster voters abolished the school district and closed its school. Most of the students in Westminster currently attend school in the City of Anna. Westminster would not likely be added to another city's ETJ in the foreseeable future. However, if such an event were to occur Westminster would probably be annexed by the neighboring City of Anna.

The City of Blue Ridge is located southeast of SH 121 and has a population of 672 (2000 census). The City of Blue Ridge is included in the AOI for this study based on population, having a viable ISD, and inclusion in traffic survey zone 085005 which is in the commuteshed for this study. The City of McKinney is located along SH 121 southwest of the proposed project study area, however because the commuteshed for the proposed project flows southwest towards the City of Dallas, the City of McKinney was not included in the AOI. It is assumed that people within the City of McKinney do not utilize SH 121 as part of their commuteshed.

The temporal boundaries for the indirect effects analysis are from present to 2035 based on readily available population growth and projected estimates of Collin County and the municipalities of Anna, Melissa, and Blue Ridge. This time frame was also established to correlate with various planning documents that look to the year 2035 (*Mobility 2035*).

5.2 Step 2: Identify the Study Area's Goals and Trends

The second step assembles information on the general trends (referred to as "directions" in NCHRP Report 466) and goals (local plans and policies generally spell out in the goals for the area within the study area). These trends and goals are independent of the proposed transportation project and concern social, economic, ecological, and growth-related issues.

5.2.1 Goals

A. Identify local entities

The study area goals are identified by first identifying the local government entities that develop goals for the area. These entities include the City of Melissa, City of Anna, City of Blue Ridge, and Collin County. Of these entities, the City of Melissa has the most readily available data on their respective goals for the area as outlined on **Table 26.**

B. Plans, Policies, and Local Ordinances

The following plans and policies that apply to the indirect effects AOI were developed to promote, guide, and monitor various development activities ranging from regional transportation infrastructure to commercial development aesthetics:

Mobility 2035: The Metropolitan Transportation Plan

This plan defines transportation systems and services in the DFW metropolitan area. It serves as a guide for the expenditure of State and Federal funds through the year 2035. The plan addresses regional transportation needs that are identified through forecasting current and future travel demand, developing and evaluating system alternatives, and selecting those options which best meet the mobility needs of the region. The proposed facility is included in this plan.

City of Anna, Land Use Plan (2006)

This plan was adopted November 20, 2006 and serves as a long-range planning tool and Thoroughfare Plan for City staff and citizens to guide the growth and physical development of the community. The Build Alternative is consistent with the Land Use Plan.

City of Melissa, Comprehensive Plan 2006

This plan was adopted July 11, 2006 and serves as a long-range planning tool that is intended to be used by City staff, decision-makers, and citizens to guide the growth and physical development of the community. A public participation process was undertaken to allow citizens an opportunity to provide their input into this comprehensive planning process. The Public Workshop for this planning process was held on December 15, 2005 and approximately 65 interested citizens participated. The plan allows the citizens to create a shared vision of what they want the community to become and establishes ways in which the community can effectively realize this vision. The growth experienced by the City of Melissa between the year 1990 and 2000 placed the community on the list of the top ten growth cities in the region, which is established by NCTCOG. Collin County is becoming increasingly urbanized as people continue to move to areas north of Dallas. The Comprehensive Plan addresses the need to accommodate population growth and new land development through the expansion of the transportation system. The Build Alternative is consistent with the Comprehensive Plan.

Roadway Impact Fee Study From 2009-2019, Melissa, TX

This study was prepared for the City of Melissa in May 2009 by Bucher, Willis & Ratliff Corporation (BWR). According to Chapter 395 of the Texas Local Government Code, impact fees can be assessed on a wide range of items including water supply, treatment, and distribution facilities; wastewater collection and treatment facilities; storm water, drainage, and flood control facilities; and roadway facilities. The Roadway Impact Fee Study focuses on roadway facilities, which are defined as “arterial or collector streets or roads that have been designated on an officially adopted roadway plan of the political subdivision, together with necessary appurtenances. Chapter 395 states that political subdivision should prepare a capital improvements plan and calculate the roadway impact fees. The study prepared by BWR documents land use assumptions and the capital improvements plan adopted by the City of Melissa.

The City of Blue Ridge does not have planning documents available for inclusion in this study. Other than the Land Use Plan (2006), the City of Anna had no further planning documents available.

C. Stated Goals

Phone, email, and conference communications, in June 2009, with the City of Anna, City of Melissa, City of Blue Ridge, and Collin County planners and officials have taken place to discuss goals, trends, and growth patterns. The local governments of the City of Anna, City of Melissa, and City of Blue Ridge support the proposed project and desire the completion of improvements along SH 121. The comprehensive plan of the City of Melissa and the land use plan of the City of Anna as well as communications with planners from the Cities of Melissa and Anna have identified the SH 121 expansion project as a component of projected growth goals.

In October and November of 2009, an email survey followed up with phone calls was conducted with the Cities of Melissa, Anna and Blue Ridge and their respective ISD's in order to gather appropriate planning information for the ICI study. The results of the email and telephone survey were negligible and did not add substantially to the data collected in the previously listed plans and policies. A summary of the stated goals for the community of Melissa is located in **Table 25**.

Table 25 Stated Goals of the City of Melissa

ECONOMIC AND LAND DEVELOPMENT GOALS
City of Melissa Comprehensive Plan
Preserve historic features and downtown
Desire for retail and commercial land uses
Expand fire and police services (concerned about paying fire and police personnel adequately)
Keep the small-town feel, the agricultural/rural lifestyle
Citizens have expressed the desire for (based on the input received at the Public Workshop):
Things for people to do – culture and entertainment for adults, community center or activities for youth
Some housing diversity – not typical multiple-family, but townhomes
Pedestrian-oriented development
Managed growth
Continued quality education
Quality development (aesthetically pleasing, long-lasting)
Preservation of the City's history
Large lot residential development
PRESERVATION OF OPEN SPACES GOALS
City of Melissa Comprehensive Plan
Development of parks – open spaces, trails for walking/biking (recreation in general)
Preservation of nature – trees, natural areas
Citizens have expressed the desire for (based on the input received at the Public Workshop):
Parks, trails – integrated with development
Preservation of open space
EFFECTIVE ROADWAY NETWORK AND TRANSIT SYSTEM GOALS
City of Melissa Comprehensive Plan
Control and manage traffic along roads and highways
Citizens have expressed the desire for (based on the input received at the Public Workshop):
Mass transit option (i.e., DART)
The transportation system should:
Provide mobility and accessibility at appropriate levels according to the type of roadway.
Focus on multi-modal transportation options, including pedestrian/bicycle access and transit.
Expand as needed to meet the needs of the City's growing population and additional development.
Be economically feasible for the citizenry and the City.
Be correlated with regional considerations, such as new/expanded highway systems and transit availability.

Sources: *City of Melissa Comprehensive Plan (2006)*

D. Relative Importance of Goals

Table 26 shows the priority goals identified in the *City of Melissa Comprehensive Plan*.

Table 26 Priority Goals Identified in the City of Melissa Comprehensive Plan

Implementation Action*	Timeframe	Endorsed by Public Input
Top Priorities		
Update Zoning Regulations related to retail development.	Immediate	Yes
Work with the development community to provide a variety of housing types, individualized housing products, and unique residential areas.	On-Going	Yes
Establish the planned public uses within the Town Center as soon as possible, to the highest level of quality possible.	Immediate	Yes
Update Subdivision Regulations to require pedestrian and bicycle connectivity.	Immediate	Yes
Investigate roadway, water, and wastewater impact fees as a funding mechanism for infrastructure expansion to accommodate growth.	1-2 Years	Yes
Develop a capital improvement plan (CIP) for trails, and complete the trail length through the Town Center.	1-2 Years	Yes
Update Subdivision Regulations to incorporate park dedication requirements.	Immediate	Yes
Plan for a new library facility (in the Town Center area) within the next five years, and construct the new facility within 10 years.	1-2 Years	Yes
Complete the recommended ornamental park in the Town Center as a “seed” project for the City Center.	1-2 Years	Yes
Longer Term Priorities		
Update Zoning Regulations related to traditional multiple-family development.	2-5 Years	Yes
Update Zoning Regulations related to Old Town and the City’s existing Historic District.	2-5 Years	Yes
Update Subdivision Regulations to require shared access driveways for and cross access in between new nonresidential developments along arterial and collector roadways.	2-5 Years	Yes
Incorporate streetscape improvements along State Highway 5.	2-5 Years	Yes
Update Subdivision Regulations to incorporate specific requirements for trail construction.	2-5 Years	Yes
Create a City Center Association.	2-5 Years	Yes
ON-GOING PRIORITIES		
Carefully consider any requested “upzoning” of property due to State law constraints on future rezoning.	On-Going	Not addressed
Work with the development community to provide density in proximity to the transit station location and related TOD area.	On-Going	Yes
Secure rights-of-way as development occurs.	On-Going	Yes
Ensure that future public facilities are designed to project a positive image of Melissa.	On-Going	Yes
Continue discussions with Collin County Community College to encourage a local location.	On-Going	Not addressed

Source: *City of Melissa Comprehensive Plan - *In No Priority Order*

E. Assumptions

Assumptions from the *City of Melissa Comprehensive Plan*

The *City of Melissa Comprehensive Plan* describes an S-curve growth projection (Scenario B), which anticipates a higher rate of growth than Scenario A. Scenario B shows rapid growth occurring from 2010 to 2020, and slower, more consistent growth from 2025 to ultimate population capacity in 2045. For planning purposes, the relatively high growth rate represented by Scenario B is recommended by the *City of Melissa Comprehensive Plan*. The growth rate projected between now and 2015 assumes that all of the City of Melissa's currently planned and platted lots will be built-out by 2015, and assumes that a few more residential projects will be approved and completed by that time as well. The City of Melissa has issued a steadily increasing number of residential building permits in 2006, and this is only expected to increase. Based on the recommended population projection, Scenario B, and on the assumption that current ETJ land will eventually annexed into the City, the City of Melissa is anticipated to reach capacity in 2045.

Assumptions from the *Roadway Impact Fee Study from 2009-2019, Melissa, TX*

Land use assumptions for the *Roadway Impact Fee Study* established that Melissa's ultimate population would be 95,700 and that this population would be reached in the year 2045. The projected populations and growth rates from the Comprehensive Plan are summarized in **Table 27**.

Table 27 City of Melissa Projected Population and Growth Rates

Year	Projected Population	Approximate Growth Rate
2005	2,300	--
2010	11,410	38%
2015	26,590	18%
2020	64,450	19%
2025	75.650	3%
2030	81,240	1%
2035	88,830	2%
2040	94,670	1%
2045	95,700	<1%

Source: *Roadway Impact Fee Study from 2009-2019, Melissa, TX*

Actual growth has not kept pace with those projections. The official population of the City of Melissa at the end of 2008 was 4,752. Using this new population to serve as the base for growth, the growth rate from the Comprehensive Plan Scenario B was applied. Based on these growth rates, the future City of Melissa and surrounding Extra-Territorial Jurisdiction (ETJ) population for the year 2019 was determined. The revised projected population is summarized in **Table 28**.

Table 28 City of Melissa and ETJ Projected Population

Year	Population
2008	4,752
2009	6,548
2010	9,023
2011	10,684
2012	12,650
2013	14,977
2014	17,733
2015	20,996
2016	25,069
2017	29,932
2018	35,739
2019	42,673

Source: *Roadway Impact Fee Study from 2009-2019, Melissa, TX*

5.2.2 Trends

Existing land use in the area is described in **Section 3.1**. As previously discussed in the Socioeconomics section of this EA (**Section 4.1**), the north central Texas region has experienced rapid population and employment growth during the last three decades. As shown in **Table 27**, it is projected that Collin County and the City of Melissa would experience an increase in population and employment from the year 2010 to the year 2035. According to NCTCOG projections, the population of the City of Melissa will increase approximately 679 percent from the year 2010 to 2035. The population of Collin County will increase approximately 87 percent from the year 2010 to 2035. Projection data were not available for the City of Anna; however, from 1990 to 2000, the population of the City of Anna increased approximately 35 percent. From 1990 to 2000, the population of the City of Blue Ridge increased approximately 29 percent. Trends in the project area suggest a strong trend towards development of undeveloped land. The comprehensive plan of the City of Melissa as well as communications with city planners have identified the SH 121 expansion project as a component of that growth.

Because SH 121 is an established transportation corridor within the City of Melissa, City of Anna, and City of Blue Ridge, local planning has taken into account the ultimate build-out of the roadway. As previously discussed, vacant land is available in the indirect effects study area and new development is occurring. SH 121 is an existing roadway and development is anticipated to occur with or without the Build Alternative. However completion of the proposed project is expected to increase the rate of development along the SH 121 corridor over time.

Available information from NCTCOG, Collin County, and the City of Melissa indicate consistency between the proposed project and current and future land use plans. However, based on growth patterns seen in NCTCOG and LOS data, implementation of the proposed project would likely speed up the rate of development of adjacent areas.

A. Identified Trends from the City of Melissa Comprehensive Plan

According to the *City of Melissa Comprehensive Plan*, population within Collin County has grown approximately 116 percent between 1970 and 1980 and 348 percent between 1980 and 2005.

B. Other Indicators of Growth

School District Enrollment

The indirect effects study area is within the Anna, Melissa, and Blue Ridge Independent School Districts (ISDs). **Table 29** summarizes the four-year growth rate of these school districts.

As shown in **Table 29**, enrollment in enrollment in the Melissa ISD has increased approximately 56 percent over four years and Anna ISD has increased approximately 41 percent. Blue Ridge ISD had a 4 percent decrease of students from 2005 to 2009 over four years.

Table 29 School District Enrollment for Anna ISD, Melissa ISD, and Blue Ridge ISD

District Name	2005-2006 Enrollment	2006-2007 Enrollment	2007-2008 Enrollment	2008-2009 Enrollment	Four-Year Growth	Approximate Four-Year Percent Growth
Anna ISD	1,526	1,861	2,000	2,148	622	41%
Melissa ISD	804	999	1,131	1,257	453	56%
Blue Ridge ISD	658	665	643	632	-26	-4%

Source: *http://deleon.tea.state.tx.us/SDL/Forms/*

NCTCOG Development Monitoring

The NCTCOG maintains a development monitoring database that tracks over 8,000 major developments that exist, are under construction, are announced, or are in the conceptual stages within the NCTCOG metropolitan planning area. Major developments are over 100,000 square feet and/or 100 employees. **Table 30** provides a summary of major developments that are either under construction or announced within the AOI.

Table 30 Major Developments in the AOI

Project	Location	Size	Status
Single Family Developments			
The Liberty Project	Patriot Drive, Melissa	1,300 new dwelling units	Under Construction
Villages of Melissa	West of SH 5, Melissa	1,500 new dwelling units	Announced
Hunters Ridge	Forest Lane, Melissa	151 new dwelling units	Under Construction
The Mantua Project	Anna	N/A	Announced
The Falls	FM 455 and US 75	100 new dwelling units	Announced
Retail Developments			
Anna Market Center	FM 455 and CR 367	198,000 sq ft	Under Construction

Source: *NCTCOG, AnnaTexas.net*

The major developments listed above indicate that Collin County, City of Anna, City of Melissa, and City of Blue Ridge, including the indirect effects study area, are continuing to become more urbanized. Local planning goals for the Cities of Melissa, Anna, and Blue Ridge are to have more commercial development along SH 121 and that this corridor continues to serve as the primary commercial area. The need and purpose of proposed project as stated in **Section 2.2** is to improve traffic mobility, reduce traffic congestion and stimulate economic development.

5.3 Step 3: Inventory of Study Area's Notable Features

5.3.1 Inventory of Notable Features

The term "notable features" includes specific valued, vulnerable, or unique elements of the environment. They may include sensitive species habitats, features with relative uniqueness, and valued environmental components (NCHRP 466). **Table 31** provides an inventory of the base-line issues and resources identified as potential notable features with a probability to be indirectly impacted within the defined study area. This inventory provides the potential resources against which the proposed project may be assessed.

Table 31 Notable Features

Feature	Description	Location	Sensitive Species and Habitats	Valued Environmental	Relative Uniqueness, Recovery Time, Unusual Landscape	Vulnerable Elements of the Population
Farmland	Land settled and the basis for agrarian lifestyle/culture and community development. Majority of land use.	Cities of Melissa, Anna, Blue Ridge, and surrounding areas		●		
Union Pacific Railroad	Railroad crosses SH 121 just east of SH 5 within the project limits. Rail line connects Dallas with Sherman and points north and passes through Anna and Melissa.	Collin County			●	
Natural Springs Park	Preserves 27 acres of historically significant land near the center of Anna. There is a natural spring fed pond in the center of the park.	Anna			●	
Old Town	Represents the oldest area of Melissa and the City's history.	Melissa			●	
Throckmorton Creek, East Fork of the Trinity River, Fitzhugh Branch, Clements Creek, and Stiff Creek	Drainages within Melissa that can be developed into future parks and open space for the City.	Melissa		●		
Town Center Area	Not yet developed. The Town hall will be central to the area, surrounded by a public plaza area and two story office, retail and residential uses.	Melissa			●	

Table 31 Notable Features

Feature	Description	Location	Sensitive Species and Habitats	Valued Environmental	Relative Uniqueness, Recovery Time, Unusual Landscape	Vulnerable Elements of the Population
Henslow's Sparrow, Western Burrowing Owl, A crayfish, Plains spotted skunk, Fawnsfoot, the Texas Garter Snake and the Timber/Canebrake Rattlesnake	State listed species. Habitat descriptions are defined in Table 13.	Collin County	●			
NTMWD 121 RDF	The 121 RDF is permitted as a Type 1 solid waste facility, where only municipal waste collected from communities, commercial, institutional, recreational, construction and demolition disposal will be accepted. No hazardous waste is ever accepted at any of the NTMWD's facilities.	Melissa			●	
Collin County Adventure Camp	Collin County Adventure Camp is a 427-acre Young Men's Christian Association (YMCA) camp in north Collin County. The camp dining, program, and lodging capacity is 500. Facilities include pavilions, trails, education center, cabins, recreation areas, and wooded areas.	Anna			●	●

Sources: *City of Melissa Comprehensive Plan*

5.4 Step 4: Identify Impact-Causing Activities of Proposed Action and Alternatives

Understanding the project design features, and the activities the project would entail that could affect potential notable features and goals, and the range of impacts that may be caused is the first step toward identifying indirect effects. NCHRP 466 identifies 10 general categories of project impact-causing activities. These are reviewed and considered in light of the proposed project activities.

5.4.1 Modification of Regime

The project would disturb roughly 158 acres of land including new pavement, median, etc. and add approximately 70 acres of impervious cover in the existing and proposed ROW. The highest erosion risk period is during construction; however, impacts can occur during the post-construction phase as well. Roadway runoff after construction would have increased levels of roadway pollutants. BMPs would be used during and after construction activities to protect surface water quality.

There are no substantial natural plant communities or native prairie remnants that would be affected by the proposed project. Within the project ROW dominant tree species include sugarberry, American elm, pecan, eastern red cedar, and cedar elm. The upland herbaceous vegetation within the existing TxDOT ROW consists almost entirely of grasses. The vegetation within the proposed ROW consists of native and introduced upland herbaceous vegetation such as Johnson grass, bermuda grass, silver bluestem, switchgrass, and common oats. The riparian vegetation within the existing and proposed ROW consists of Johnson grass, bermuda grass, western ragweed, curly dock, aster, black willow, and eastern red cedar. The wooded vegetation within the existing and proposed ROW consists of different population densities between fence line, densely wooded, and maintained, or less dense areas. Impacts to vegetation are summarized in **Section 4.5**. Of the 329 acres of impacts to vegetation associated with the proposed project, approximately 40 acres of trees would be removed.

The proposed project would not increase the base flood elevation to a level that would violate the applicable floodplain regulations or ordinances.

5.4.2 Land Transformation and Construction

From SH 5 to Liberty Way, the proposed project would widen the road from 2 to 4 lanes, and would increase the overall width of the facility by 38 ft. From Liberty Way to 3,000 ft north of FM 2933, the proposed project would widen the road from 2 to 4 lanes, and would increase the overall width of the facility by 48 ft. From 3,000 ft north of FM 2933 to 3,300 ft north of CR 420, the proposed project would widen the road from 2 to 4 lanes, and would increase the overall width of the facility by 52 ft. From 3,300 ft north of CR 420 to CR 635 (Fannin County line), the proposed project would widen the road from 2 to 4 lanes, and would increase the overall width of the facility by 32 ft.

Select fill (specially graded base materials) material and asphalt would be needed to construct the new lanes and turn lanes. The source of these materials would remain unknown to TxDOT but are almost exclusively from existing commercially available sources. Also, by nature of involving exposed soils, this impact causing activity poses the same risks for water quality, etc. as described in **Section 4.8.**

5.4.3 Resource Extraction

This impact causing activity poses the same risks for water quality, etc. as described in **Section 5.4.1**.

5.4.4 Processing

Temporary storage facilities would likely be established within the project limits and that appropriate erosion and sedimentation controls be utilized as needed to protect water quality.

Storage of materials would likely occur off-site. It is anticipated, based on usual practices that the contractor, when selected, would negotiate to use a portion of the parking lot at one of the large shopping centers which are not completely occupied at this time for the contractor's field office and storage location. If the contactor chooses to use undeveloped land or another location for material storage, impacts to natural resources may increase.

5.4.5 Land Alteration

The project would add approximately 67 acres of impervious cover in the existing and proposed ROW. This impact causing activity poses the same risks for water quality, etc. as described in **Section 5.4.1**.

5.4.6 Resource Renewal

The project would not involve these activities, although disturbed soils would be revegetated as necessary.

5.4.7 Changes in Traffic (including adjoining facilities)

It is anticipated as a result of the project that people would shift their preferred travel routes to take advantage of the improvements. This is referred to as latent demand. No studies have been performed to estimate the amount of latent demand for this roadway, but it is anticipated such demand to be minimal, based on their experience and the public involvement conducted during the planning process. Major changes in traffic patterns are not anticipated. Impacts to traffic during construction would be relatively minor because the project primarily involves constructing a set of northbound lanes offset from the existing lanes.

Travel time and traffic volumes (and perceived/real economic impact) are key transportation measures for estimating impacts on residential and commercial development. Larger volumes that result from transportation improvements could support an increase of demand and prices for retail properties along a corridor, which in turn contributes to the potential for land use changes. Key questions are whether (1) that potential is sufficient to cause property owners and developers to build faster and differently than they would have, and (2) whether the comprehensive plan would have to be changed in any substantial way (e.g., zoning, comprehensive plan designations, city limits, urban growth boundaries) to allow that change in development. Key transportation variables of interest for land use analysis are change in travel time, traffic volumes, and mobility.

The air quality in the AOI is currently considered in poor or declining health, because it is within the nonattainment area for ozone. In addition, the proposed project will result in substantially increased mobility in the area. This can result in changes of traffic patterns and thus have the potential to indirectly impact air quality in the area.

5.4.8 Waste Emplacement and Treatment; landfill, waste discharge

Soil excavated from the project area would likely be stockpiled for use on another project or sold for other uses, depending upon the results of soil testing. The contractor, when selected, may choose to provide portable sanitary facilities for employees at the field office. No other sanitary waste discharge is anticipated. Any sanitary wastes generated at construction field offices would be contained in appropriate waste containers and serviced regularly.

5.4.9 Chemical Treatment

Minimal use of fertilizer is anticipated during revegetation. None of the slopes which will be revegetated have been preliminarily designed to be steeper than 3:1 in grade, therefore, no chemical binders are anticipated. Periodic applications of herbicide may occur during the maintenance phase of the project.

Overuse and improper application of fertilizers can pose risks to surface and groundwater quality. Similarly, the runoff of pollutants such as these poses potential risks to water quality. Fertilizers are only used, if at all, during the revegetation phase of TxDOT construction. No fertilizers are used in the ROW after the revegetation phase. TxDOT uses inert sand materials for ice control, and these are only applied on bridges and large culverts as necessary due to weather-related road safety issues.

5.4.10 Access Alteration

The introduction of a raised median in the urban sections and grassy medians in the rural sections of the proposed project would restrict left turn ingress and egress to and from SH 121. This design would affect a number of commercial driveways, residential streets, and residential driveways and lead to reduced direct access (i.e. left-hand turning movements) to public facilities and services, employment centers and to commercial and residential destinations. Existing and proposed thoroughfares have been accommodated in the proposed design. The raised median is intended to reduce congestion and along with the grassy median in rural areas separate traffic and support the overall goals of improved safety for the SH 121 corridor.

5.5 Step 5: Identify Potentially Substantial Indirect Effects for Analysis

Based on the information in **Steps 1** through **4**, indirect effects are identified. Step 5 examines the likelihood for substantial indirect effects associated with the Build Alternative. The potential indirect effects were divided into three primary categories, summarized in **Table 32**.

Table 32 Types of Indirect Effects

Indirect Effect	Description
Encroachment-alteration effects	Are related to impact-causing activities identified in Step 4. • *Ecological effects* - Potential indirect ecological effects include: habitat fragmentation, degradation of habitat, disruption of natural processes, pollution effects on species, and disruption of ecosystem functioning. These effects are interrelated, and must be examined in terms of the interconnections within the ecological organization. Analysis of indirect ecosystem effects must also consider the ability of that ecosystem to respond to change. • *Socioeconomic effects* - The two major types of direct encroachment effects include: 1.) changes in travel patterns and access; and 2.) direct relocation or alteration of homes, businesses, or public facilities/community centers. These impacts may lead to effects on neighborhood cohesion, neighborhood stability, travel patterns, changes in the local economy, changes in access to specific services or products, recreation patterns at public faculties, pedestrian dependency and mobility, perceived quality of the natural environment, personal safety and privacy, and aesthetic and cultural values.
Induced growth effects	Transportation projects may provide new or improved access to adjacent land, or may reduce the time-cost of travel, which increases the attractiveness of the surrounding land to developers and consumers. Effects may include changes in accessibility, changes in property value, expected growth, the relationship between land supply and demand, availability of public services, market factors, and public policy.
Effects related to induced growth	Effects are similar to encroachment-alteration effects, but occur as a result of induced growth. If induced growth is anticipated, the effects of that growth must be analyzed.

5.5.1 Encroachment-Alteration Effects

A. Encroachment-Alteration Effects (Ecological)

As a result of sediment from the project and increased traffic, minimal water quality and soil degradation is expected during the construction phase and operation phase of the project. Due to the increased distance involved in crossing the road and higher traffic volume, it is possible that there could be a slight increase in the numbers of animals struck by vehicles. However, because the roadway already exists and project improvements are not expected to substantially change the current condition, this type of effect is not carried forward to **Step 6**.

Increased traffic could result in a higher probability of hazardous material spills, contaminating adjacent soils and waterways. Increased traffic also slightly increases the amount of litter and debris along the roadway. Substantial ecological encroachment-alteration effects are not expected as a result of the project.

B. Encroachment-Alteration Effects (Socioeconomic)

Because SH 121 already exists and traverses the Cities of Melissa, Anna, and Blue Ridge, it is not anticipated that substantial socioeconomic encroachment-alteration effects would occur as compared to construction of a new location roadway or bypass. The relocation of homes and businesses proposed by the project would not impact the neighborhood cohesion, neighborhood stability, and recreation patterns at public faculties. Therefore, socioeconomic encroachment-alteration effects are not carried forward to **Step 6**.

5.5.2 Induced Growth/Access Alteration Effects

The improved proposed roadway would facilitate and expedite access to other roadways, decreasing congestion and improving mobility throughout the roadway/transportation network of the AOI. In general, the need for additional public services, such as emergency services, is based on response times. The less time needed for responders to reach persons and facilities in their service areas, the better. Improved roadways usually facilitate quicker response times and expedite access to emergency situations.

Because of improved access, the proposed project would likely benefit existing businesses along the SH 121. It is expected that there would be a temporary disruption to travelers as a result of construction activities. It is anticipated that some commercial businesses would lose direct left turn lane ingress and egress access as a result of the incorporation of raised medians in the urban section of the project. Changes in access to the roadway due to the design profile and increased medians could limit access to fields adjacent to the roadway. Induced land development will be assessed for potentially substantial effects in **Step 6**.

Improved access coupled with development trends in the Cities of Anna, Melissa, and Blue Ridge given their proximity to the Dallas Metroplex indicate that induced development would occur in the AOI of the planning horizon. Induced growth/access alteration effects will be analyzed in **Step 6**.

The AOI is part of the EPA designated nine-county nonattainment area for the pollutant ozone. The AOI is currently in attainment for all other NAAQS pollutants. Based on the results of **Steps 1** through **4** that evaluated the possible project-related actions that can indirectly impact air, it was determined that the proposed project would not be anticipated to cause indirect air quality impacts in the AOI. No change in attainment status is anticipated within the AOI area as the result of emissions associated with the proposed project. In order for the region to achieve ozone attainment, a variety of point, non-point, and mobile source emission reduction strategies must be implemented for the entire Dallas-Fort Worth area as outlined in the SIP. Indirect air quality impacts from MSATs are unquantifiable due to existing limitations to determine pollutant emissions, dispersion, and impacts to human health. MSAT emissions would likely be lower than present levels in future years as a result of the EPA's national control regulations (i.e., new light-duty and heavy duty on road fuel and vehicle rules, the use of low sulfur diesel fuel). Even with an increase in VMT and possible temporary emission increases related to construction activities, the EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions of on road emissions, MSATs, and the ozone emissions. As the proposed project is not anticipated to result in indirect air quality impacts, further discussion in **Steps 6-7** below is not necessary.

A. Economic and Land Development

Farmland

According to the FPPA of 1981, prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food and other agricultural crops. Unique farmland is defined as land other than prime farmland that is used for production of specific high-value food and fiber crops, as determined by the Secretary of Agriculture.

Indirect impacts of the proposed project would contribute to an effect on the visual character and identity of the town and surrounding area, socio-economic conditions, and historic integrity with the loss of agrarian lifestyles/culture. Development on vacant land used for agriculture is

often a consequence of rural roadway projects. As discussed in NCHRP 466, transportation improvements often reduce the time-cost of travel, enhancing the attractiveness of surrounding land to developers and consumers. Including the rural areas, approximately 64 percent of the indirect effects AOI qualifies as vacant land available for development and most of this is vacant land has areas where row crops were identified and is classified as farmland. This determination was made by the process described in **Section 5.6**. Induced growth effects on farmland will be assessed for potentially substantial effects in **Step 6**.

5.5.3 Effects Related to Induced Growth

Table 33 summarizes the relationships of the identified goals and notable features and their potential to be a substantial indirect effect.

Table 33 Summary of Anticipated Substantial Indirect Effects

Goals and Notable Features	Potential to be Substantially Affected by Land Use Development	Proposed Project's Potential Indirect Effects on Goals and Notable Features	Proposed Project's Potential Effects on Goals and Notable Features due to Induced Land Use Development
Goals			
Economic and land development	Strong	Improved access, increased tax base from induced growth effects, increased attractiveness to developers	Yes – strong positive potential effect
Effective roadway and transportation network	Moderate	Slightly improved connectivity to existing and proposed roadways	No, moderate relationship – slight effect
Preservation of open spaces	Weak	Zoning development/planning, incorporation of green space	No, weak relationship – weak effect
Notable Features			
Union Pacific Railroad	Weak	Access, temporary scheduling delays during construction of cross bridges possible.	No, weak relationship – weak effect
Old Town and Town Center Area (City of Melissa)	Weak	Visual character and identity of the city, historic integrity, and socio economic conditions; disconnect from the fabric of the larger community between new developments. Resources are protected by goals in comprehensive plan.	No, weak relationship – weak effect
Farmland	Strong	Effect on the visual character and identity of the town, socio economic conditions, and historic integrity with the loss of agrarian lifestyles/culture.	Yes – strong potential effect
Throckmorton Creek, East Fork of the Trinity River, Fitzhugh Branch, Clements Creek, and Stiff Creek	Weak	Loss of ecological diversity and natural settings along with the degradation of water quality. Jurisdictional water features and wetlands would be protected by Sections 401 and 404 of the Clean Water Act and TCEQ regulations.	No, weak relationship-weak effect
Natural Springs Park	Weak	Loss of riparian habitat and vegetation, and degradation of water quality. Parks serve as an important feature to the community's opportunities for recreation as well as preserving natural resources and provide open greenspaces and natural view sheds.	No, weak relationship-weak effect

Table 33 Summary of Anticipated Substantial Indirect Effects

Goals and Notable Features	Potential to be Substantially Affected by Land Use Development	Proposed Project's Potential Indirect Effects on Goals and Notable Features	Proposed Project's Potential Effects on Goals and Notable Features due to Induced Land Use Development
NTMWD 121 Regional Disposal Facility	Weak	Temporary access adjustments during construction possible.	No, weak relationship-weak effect
Collin County Adventure Camp	Weak	Temporary access adjustments during construction possible.	No, weak relationship-weak effect

5.6 Step 6: Analyze Indirect Effects and Evaluate Results

The objective of this step is to assess the effects identified in the **Step 5** by determining magnitude, probability of occurrence, timing and duration, and degree to which the effect can be controlled or mitigated to determine if those effects have the potential to be substantial. Because of the strong relationship between highway improvements and economic and land development, the induced growth effects have been identified as potentially substantial. The land use types within the AOI were determined using visual interpretations of aerial photography. Areas where large stands of trees were identified were classified as wooded. Areas where sparse vegetation were present with grasslands were classified as pasture. Areas where roads and houses were identified were classified as developed. Areas where row crops were identified are classified as farmlands. Areas inside the 100-year floodplains were classified as floodplains. Areas that are currently woodlands, pasture, or farmland were considered to be developable lands. Using this classification system, **Figure 8** depicts the land use types within the AOI.

As a result of **Step 5**, economic and land development and farmland were identified as potentially substantial indirect effects. **Figure 9** depicts the land development types within the AOI. Each of these is further analyzed below. Because the analysis assumes certain development timeframes and boundaries and because of the predictive nature of the analysis, there is a degree of uncertainty involved.

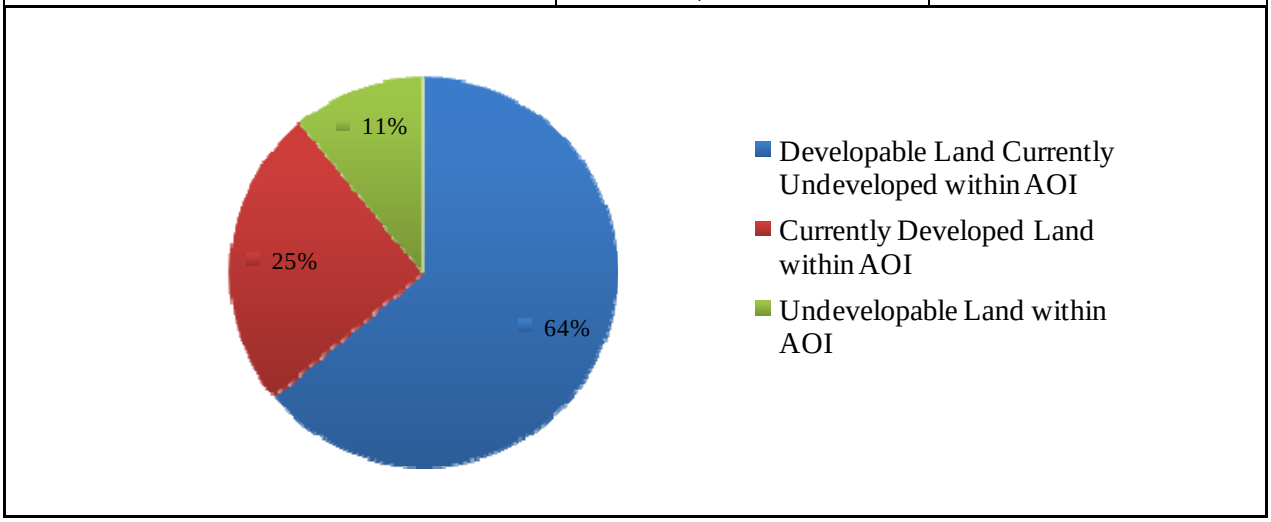
5.6.1 Economic and Land Development

Table 34 summarizes the amount of developed and undeveloped land within the AOI and demonstrates that there are approximately 34,246 acres of undeveloped land considered to be developable within the AOI. Approximately 64 percent of potentially developable land within the AOI is undeveloped.

The City of Anna has approximately 8,704 acres within the city boundary and an established ETJ of approximately 25,407 acres. The City of Melissa has approximately 6,490 acres within the city boundary and an established ETJ of approximately 6,317 acres. The City of Blue Ridge has approximately 690 acres within the city boundary and an established ETJ of approximately 11,141 acres.

Table 34 Land Development within the AOI

Description	Approximate Area (Acres)	Approximate Percentage of AOI
Developable land currently undeveloped within AOI	34,246	64 %
Currently developed land within AOI	13,394	25%
Undevelopable land within AOI	5,863	11%
TOTAL	53,502	100%



In evaluating the extent of the economic and land development indirect effects, an assumption is made to consider 90 percent all lands inside the ETJs fully developed by the end of the temporal boundary timeframe (2035). This assumption was developed utilizing the demographic forecast for both Collin County and the respective communities. This assumption was also developed in coordination with local planning representatives and experts. It is assumed that 10 percent of available developable land would be preserved for parks and open space within the community. As **Table 35** demonstrates, it is projected that 23,364 acres would be developed in the municipal boundaries and ETJs by 2035.

Table 35 Projection of Developed Land within the Municipal Boundaries and ETJs

	Developable Land within the Municipal Boundaries and ETJs within the AOI (acres)	2035 Projection of 90% Developed Land within the Municipal Boundaries and ETJs within the AOI (acres)
City of Anna Boundary	5,027	4,525
City of Anna ETJ	12,549	11,294
City of Melissa Boundary	2,953	2,658
City of Melissa ETJ	3,602	3,241
City of Blue Ridge Boundary	76	69
City of Blue Ridge ETJ	1,752	1,577
TOTAL	**24,132**	**23,364**

5.6.2 Farmland

Recent trends indicate that further development is likely and induced growth effects may have the potential to be substantial on farmlands within the AOI. Approximately 19 percent of land within the AOI is farmland. Prime and unique farmlands fall under the jurisdiction of the USDA through the FPPA.

Based on growth patterns seen in NCTCOG and LOS data, implementation of the proposed project would likely speed up the rate of development of adjacent areas. Conversion of farmlands to other uses including development often occurs at a greater rate in tracts of farmland that are nearer the urbanized areas.

Indirect impacts of the proposed project would contribute to an effect on the visual character of the AOI including historic integrity with the loss of agrarian lifestyles/culture.

In evaluating the extent of the farmlands effects, an assumption is made to consider 90 percent all farmlands inside the municipal boundaries and ETJs fully developed by the end of the temporal boundary timeframe (2035). It is assumed that 10 percent of available developable land would be preserved for parks and open space within the community. Population density increases with the conversion of land use from rural to suburban. As a result, land is taken out of agricultural production and the tax base changes. As **Table 36** demonstrates, it is predicted that approximately 8,241 acres would be converted from existing farmland by 2035.

Table 36 Projection of Developed Farmland within the Municipal Boundaries & ETJs

	Existing Developable Land within the Municipal Boundaries and ETJs (acres)	2035 Projection of 90% Developed Land within the Municipal Boundaries and ETJs (acres)
City of Anna Boundary	3,961	3,565
City of Anna ETJ	2,786	2,507
City of Melissa Boundary	704	633
City of Melissa ETJ	1,318	1,187
City of Blue Ridge Boundary	7	6
City of Blue Ridge ETJ	381	343
TOTAL	**9,157**	**8,241**

5.7 Step 7: Assess Consequences and Consider/Develop Mitigation

Of the potential indirect impacts on notable goals and features, only two were considered to have a substantial indirect impact. These goals and features include farmland and land and economic development.

5.7.1 Farmland

In areas to the south of the AOI the suburbs of the City of McKinney and the City of Frisco are known to have developed from small farming communities. This land conversion has occurred over many decades of development with the result that very little farmland is available in those areas. This northward growth trend outward from the Dallas Metroplex suggests a similar outcome for the farmland in the AOI of the proposed project.

There are Federal regulations and controls in place to protect farmland and offset impacts of induced development. Prime and unique farmlands fall under the jurisdiction of the USDA through the FPPA of 1981. The USDA NRCS administers the regulations and provides guidance for the completion of USDA Form CPA 106 for corridor-type projects with potential impacts to prime and unique farmlands. The FPPA was enacted based on concerns that millions of acres of farmland were being lost to development each year. The issue was identified in the National Agricultural Land Study of 1980-81 resulting in the need for the US Congress to implement policies to protect farmlands and minimize urban sprawl. As a result, prime and unique farmlands are protected by Section 1540(b) of the FPPA 7 USC 4201(b), which proposes to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmlands to non-agricultural uses.

In addition to Federal controls, city and county land use development regulations provide protection for natural resources and farmland as a measure to protect and retain the local historical rural farming character of the area. Effects related to induced growth impacting farmland would not conflict with local comprehensive plans. No impacts to sensitive or vulnerable notable features or interference with planned improvement of a notable feature are anticipated. Adequate farmland is readily available in the project area. It is anticipated that mitigation for indirect effects to farmland is not warranted.

5.7.2 Land and Economic Development

Indirect impacts to land and economic development are substantial but considered beneficial and follow the comprehensive plan of the City of Melissa. No impacts or conflicts with these local comprehensive plans are anticipated. No impacts to sensitive or vulnerable notable features or interference with planned improvement of a notable feature are anticipated.

Indirect impacts to land and economic development has been projected to be substantial, but is not considered to be adverse, considering the comprehensive plans and encouragement for growth in the area.

6.0 CUMULATIVE IMPACTS

Cumulative effects are defined as effects "on the environment 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." (National Environmental Policy Act [NEPA] Section 1508.7, 1978). According to *TxDOT's 2010 Guidance on Preparing Cumulative Impact Analyses*, "NEPA analyses must include useful evaluation of the cumulative impacts of the past, present, and future projects."

In accordance with TxDOT's September 2010 Guidance, the analysis of cumulative effects addresses the following steps in **Table 37**.

Table 37 Cumulative Impact Analysis Steps

Step	Description	Explanation
1	Identify the resources to consider in the analysis	Identify the resource(s) to consider in the analysis.
2	Define the study area for each affected resource	Cumulative impacts are considered within spatial and temporal boundaries. Geographic and temporal boundaries would be defined for each resource.
3	Describe the current health and historical context for each resource	The current condition and stability of the resource would be described. Historical context would be provided to assist in determining how the resource got to its current state.
4	Identify direct and/or the indirect impacts that may contribute to a cumulative impact (Analysis is required if either a direct or impact is identified for a particular resource.)	The impacts of the proposed project in combination with impacts of other past, present and reasonably foreseeable projects would be assessed.
5	Identify other reasonably foreseeable actions that may affect resources	Current and reasonably foreseeable transportation and non-transportation projects within the study area for each resource in the cumulative impacts section would be identified and assessed as to its impact on the resource.
6	Assess potential cumulative impacts to each resource	Discuss the potential cumulative impacts on a resource resulting from the proposed project and other reasonably foreseeable actions.
7	Report the results	This summary would include the identification of resources considered in the analysis, the study area for each resource and the conclusions concerning the health and historical context of understanding the resource. Project impacts that might contribute to a cumulative impact, other reasonably foreseeable actions considered in the cumulative impact analysis and the conclusion of the analysis would be presented.
8	Assess and discuss mitigation issues for all adverse impacts	NEPA regulations call for the consideration of mitigation for all adverse impacts whether direct, indirect or cumulative. If it is not possible to identify a mitigation measure, then the agencies that have regulatory authority over the resource and the actions the agency can take to influence the sustainability of the resource would be presented.

6.1 Step 1: Identification of Resources

The first step in performing the cumulative impact analysis is to identify which resources to consider in the analysis (*TxDOT's 2010 Guidance*). Resources to be assessed for cumulative impacts are:

Resources potentially substantially impacted by the project:

- Vegetation and Wildlife Habitat
- Waters of the U.S. Including Wetlands
- Land Use

Resources currently in poor or declining health or at risk:

- Air Quality
- Water Quality and Waters of the U.S, Including Wetlands
- Farmlands

6.2 Step 2: Define the Study Area

In accordance to **Step 2**, geographic and temporal boundaries are defined for each resource issue in **Table 38**. Cumulative impacts are considered within spatial (geographic) and temporal boundaries. By defining a specific RSA for each resource, geographic boundaries would be included in the cumulative impact analysis. This must be a customized approach for each project and each resource. These boundaries determine the limit of data and a time frame to be used in the analysis of the issues. The geographic and temporal boundaries are based on accessible data available from NCTCOG, TCEQ, and on readily available population growth and projected estimates of Collin County and the municipalities of Melissa, Anna, and Blue Ridge.

In establishing the temporal boundary for the RSAs, extending the timeframe forward to 2035 for cumulative impacts matches the region's MTP *Mobility 2035* and it provides sufficient data to complete a qualitative or quantitative analysis.

According to the *Texas State Historical Association Handbook of Texas Online*, the Great Depression, the mechanization of farming, and job opportunities in the Dallas metropolitan area after World War II slowed community growth in the City of Melissa. The City of Melissa was incorporated in the early 1970s. In the 1980, the City of Melissa had a population of 604 and has continued to grow to the present. The City of Blue Ridge was incorporated in 1936 and while the City weathered the Great Depression better than most Texas towns, after the 1930s, the number of businesses within the City steadily declined. Like the City of Melissa, the mechanization of farming and job opportunities in the City of Dallas after World War II contributed to this decline. The City of Blue Ridge had a population of 442 in 1984 and grew to 521 in 1990. The City of Anna was incorporated in 1913. The City of Anna has experienced recent growth, with a population of 855 in the mid-1980s and 904 in 1990.

The fifty-five year period between 1980 and 2035 should be sufficient to capture cumulative impacts resulting from those actions for which construction has been initiated, but not yet completed.

The RSA geographic boundary for vegetation and wildlife habitat, farmland, water quality, and waters of the U.S. is comprised of components of the Throckmorton Creek Watershed, Sister Grove Creek Watershed, and West Fork Pilot Grove Creek Watershed (70,649 acres). The RSA and surrounding area is classified as Crops on the TPWD Vegetation Types of Texas map. The land use types within the RSA were determined using visual interpretations of aerial photography. Areas where large stands of trees were identified were classified as wooded. Areas where sparse vegetation were present with grasslands were classified as pasture. Areas where roads and houses were identified were classified as developed. Areas where row crops were identified are classified as farmland. Areas inside the 100-year floodplains were classified as floodplains. Areas that are currently woodlands, pasture, or farmland were considered to be developable lands. Using this classification system, **Figure 10** depicts the RSA, the watershed boundaries, and land use types within the RSA.

The RSA for evaluating the ozone NAAQS was designated as the nine-county north central Texas eight-hour ozone nonattainment area, which includes Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwell, and Tarrant counties (**Figure 11**).

The RSA for MSATs is the boundaries of Collin County. Unlike the other resources evaluated, air quality impacts from MSATs have been evaluated qualitatively in this proposed project by TxDOT and FHWA. MSATs are regulated by EPA on a national basis through requirements for

fuels and vehicle technology. The MSAT RSA qualitatively evaluated emission changes based upon the proposed project and national trends.

The RSA geographic boundary for land use was designated as the AOI boundary that encompasses the ETJs for the Cities of Anna, Melissa, and Blue Ridge. The land use RSA is defined by a combination of considerations described in **Section 5.1** with a strong deference to the boundaries of the ETJs of the Cities of Anna, Melissa, and Blue Ridge. The area is depicted in **Figure 7**. **Table 39** depicts the resource categories evaluated in the cumulative effects and their associated geographic boundaries.

Table 38 Resources and Geographic Boundaries for Cumulative Impacts

Resource Category	Resource Study Area
Vegetation and Wildlife Habitat	Components of Throckmorton Creek Watershed, Sister Grove Creek Watershed, and West Fork Pilot Grove Creek Watershed (70,649 acres, 110 square miles)
Farmland	Components of Throckmorton Creek Watershed, Sister Grove Creek Watershed, and West Fork Pilot Grove Creek Watershed (70,649 acres, 110 square miles)
Air Quality	9 County Nonattainment Ozone Area (Denton, Collin, Parker, Rockwall, Dallas, Tarrant, Johnson, Ellis, and Kaufman Counties) (7,199 square miles) The RSA for MSATs is the boundaries of Collin County (886 square miles).
Water Quality	Components of Throckmorton Creek Watershed, Sister Grove Creek Watershed, and West Fork Pilot Grove Creek Watershed (70,649 acres, 110 square miles)
Waters of the U.S.	Components of Throckmorton Creek Watershed, Sister Grove Creek Watershed, and West Fork Pilot Grove Creek Watershed (70,649 acres, 110 square miles)
Land Use	Area that includes existing and adjacent census tracts of a reasonable population density (53,502 acres, 84 square miles)

6.3 Step 3: Current Health and Historical Context

6.3.1 Vegetation and Wildlife Habitat

The first settlement of Collin County occurred during the early period of the county's history, from 1840 to 1860. The second phase took place during and after the arrival of railroads. The first settlers of Collin County were farmers who produced mostly wheat and corn. Although agriculture, especially developing dairy farming, continued to be an important factor in the county's economy, by 1980 the introduction of light industry, combined with the growth of the Dallas metropolitan area, produced a successful diversified economy.

Since 1970, there has been a gradual conversion of vegetation/wildlife habitat from undeveloped uses to developed uses via construction or development as farmlands.

The current health of the Vegetation and Wildlife Habitat within the RSA can be assessed by considering the vegetation types within the RSA, thereby depicting the amount of land currently available to support wildlife habitat (**Table 40** and **Figure 12**).

Table 39 Vegetation within the RSA

	Crops		Pasture		Woodland	
	Approximate Acreage	% within Area	Approximate Acreage	% within Area	Approximate Acreage	% within Area
Within RSA	12,226	17%	29,345	42%	6,041	9%

The conversion of natural land to agricultural and pasture uses is a great contributor to the declining health of this resource. This land conversion has occurred over many decades of development, and has eliminated much of the habitat diversity in the RSA.

6.3.2 Farmland

Areas to the south of the RSA in the Cities of McKinney and Frisco developed from small towns surrounded by farmland. The historical context for this resource is similar to what is discussed in **Section 6.3.1**. This land conversion has occurred over many decades of development with the result that very little farmland is available in those areas. This growth trend to the northeast suggests a similar outcome for the farmland RSA.

Conversion of farmlands to other uses including development often occurs at a greater rate in tracts of farmland that are nearer the urbanized areas.

The current declining health of farmland within the RSA can be assessed by considering the amount of land currently in farming production. According to USDA's 2000 Census of Agriculture, Collin County has total farmland of 150,210 acres, which is approximately 26 percent of Collin County. As **Table 40** depicts, the current percentage of farmland in the RSA is approximately 17 percent.

6.3.3 Air Quality

The EPA establishes limits on atmospheric pollutant concentrations through enactment of the NAAQS for six principal, or criteria, pollutants. The EPA designated nine counties in north central Texas as nonattainment for ozone. This part of Collin county is currently in attainment or unclassifiable for all other criteria pollutants. Although there have been year-to-year fluctuations, the ozone trend continues to show improvement. The trend of improving air quality in the region is attributable in part to the effective integration of highway and alternative modes of transportation, cleaner fuels, improved emission control technologies, and NCTCOG regional clean initiatives.

In 2001, the EPA identified 21 mobile source air toxics (MSATs) and specified six of these 21 substances as priority MSATs. They are benzene, 1,3 butadiene, formaldehyde, acrolein, acetaldehyde, and diesel particulate matter (DPM) and diesel organic gases. In 2007, the EPA expanded the priority MSATs to include polycyclic organic matter (POM) and naphthalene. EPA's 2007 rule projects that total MSAT emissions will decline substantially by 2020 due to fuel controls and vehicle standards. The FHWA's interim guidance on MSATs was updated in September 2009 and suggests three options for NEPA documentation: no analysis, a qualitative analysis, or a quantitative analysis, depending upon the project's scope and potential for meaningful MSAT effects. Qualitative assessments should consider project impacts on traffic volumes, speeds, vehicle mix, or traffic routing, and expected changes in MSATs. Qualitative analyses can also discuss the overall downward trend in forecasted MSAT emissions.

6.3.4 Water Quality and Waters of the U.S

Pilot Grove Creek is listed as segment number 0821A and Sister Grove Creek is listed as segment number 0821B. There are approximately 8,940 acres of floodplain within the RSA. The floodplains comprise approximately 13 percent of the land within the RSA. With increased population growth and the expansion of the transportation network, along with development associated with population growth, water quality is in decline. Unabated erosion from construction activities would cause a sediment load to nearby streams, which would potentially cause a further decline in water quality.

With regards to the historical integrity of the resource, the water quality in the RSA has been in decline. According to the Center for Watershed Protection, storm water runoff from urban development typically contains suspended solids, nitrogen, phosphorus, bacteria (fecal coliforms), petroleum hydrocarbons, copper, lead, zinc, pesticides, and herbicides. Increased impervious surface area and the historical conversion of natural land to agricultural purposes have contributed to the decline of the resource.

6.3.5 Land Use

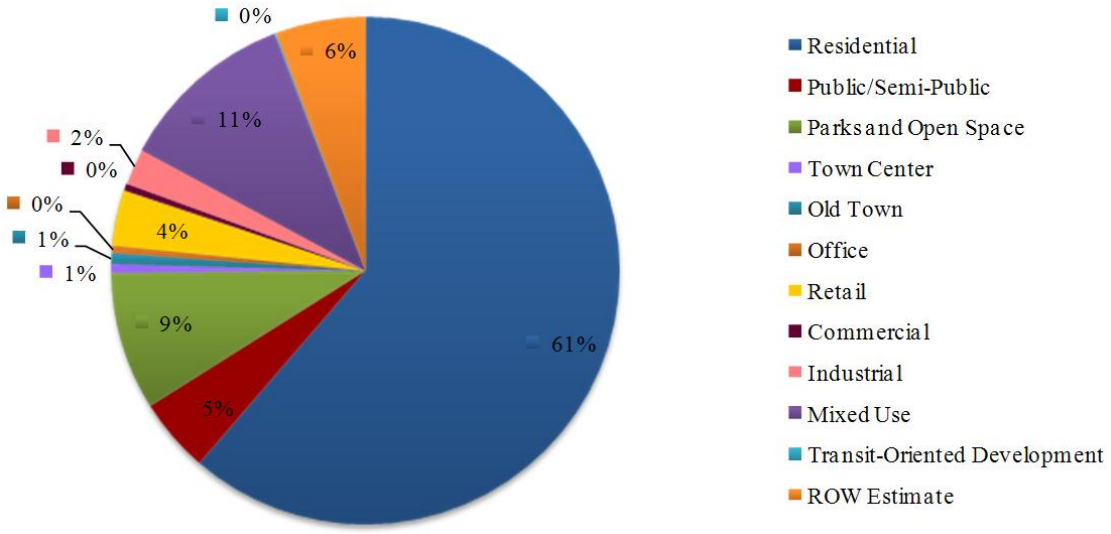
As previously discussed in the Socioeconomics section of this EA (**Section 4.1**), the North Central Texas Region has experienced rapid population and employment growth during the last three decades. It is projected that the Cities of Anna, Melissa, and Blue Ridge will experience an increase in population and employment from the year 2000 to the year 2035. Within the City of Melissa, the year 2000 population is projected to increase by 679 percent by the year 2035 and employment is anticipated to increase by 486 percent by the year 2035. The proposed project area totals approximately 412 acres. With population and employment growth, land use in the proposed project area is moving from rural to a more developed condition. Future residential subdivisions and retail/commercial development are relying on increased access and mobility from the improved roadway.

According to the *City of Melissa Comprehensive Plan*, approximately 30 percent of the developed land within the City of Melissa is categorized as single-family residential land uses and accounts for the second-highest amount of developed acreage. ROW accounts for the highest amount of developed acreage in the City of Melissa, at over 46 percent of the developed acreage.

Approximately 5,662 acres (22 percent) within the City of Anna municipal boundaries and ETJ are currently developed. Approximately 3,914 acres (36 percent) within the City of Melissa municipal boundaries and ETJ are currently developed. Approximately 1,331 acres (36 percent) within the City of Blue Ridge municipal boundaries and ETJ are currently developed.

Also important is the ratio of Retail uses to the population. According to the *City of Melissa Comprehensive Plan*, an average ratio is 0.5 retail acres per 100 persons. Less than 0.4 generally indicates that citizens are going elsewhere for goods and services, and greater than 0.6 usually indicates that citizens from elsewhere are coming into the community from elsewhere to buy goods and services. The City of Melissa's ratio is currently 0.96 acres per 100 persons. This is a high ratio, which is likely related to the amount of retail uses located along SH 121. Future land use calculations from the City of Melissa Comprehensive Plan are as shown:

City of Melissa Future Land Use
(Source: City of Melissa Comprehensive Plan)



6.4 Step 4: Direct and Indirect Impacts

6.4.1 Vegetation and Wildlife Habitat

Direct impacts to upland herbaceous vegetation would be approximately 160.4 acres in the existing ROW and 119.5 acres in the proposed ROW, for a total impact of 279.9 acres. Direct impacts to upland wooded vegetation would be approximately 7.6 acres within the existing ROW and 29.6 acres in the proposed ROW, for a total impact of 37.2 acres. Direct impacts to riparian vegetation would be approximately 3.9 acres in the existing ROW and 7.8 acres within the proposed ROW, for a total impact of 11.7 acres. Total direct impacts to vegetation are estimated to be approximately 328.8 acres.

Approximately 64 percent of the AOI is developable land with vegetation. Trends suggest that development of undeveloped land is likely, especially within the Cities of Melissa, Anna, and Blue Ridge municipal boundaries and ETJs. According to the *City of Melissa Comprehensive Plan*, most communities do not develop such that 100 percent of the land is utilized. Generally, approximately 10 percent remains vacant. Assuming 90 percent of the municipal boundaries and ETJs were developed by 2035, it would result in the loss of approximately 23,364 acres of vegetation.

6.4.2 Farmland

Direct impacts to farmland (additional ROW) were scored using Form AD-1006. However, the score was too low to require coordination with the NRCS. Direct impacts to farmland would be approximately 380 acres in the proposed ROW.

As stated previously, approximately 64 percent of the indirect effects AOI is rural and qualifies as vacant land available for development. Approximately 19 percent of land within the AOI is classified as farmland. Approximately 9,157 acres within the municipal boundaries and ETJs is classified as farmland. Assuming 90 percent of the municipal boundaries and ETJs were developed by 2035, it would result in the loss of approximately 8,241 acres of farmland.

6.4.3 Air Quality

Direct impacts on air quality and MSATs from the project are primarily those associated with the increased capacity, accessibility and the resulting projected increases in VMT. Emission reductions as a result of EPA's new fuel and vehicle standards are anticipated to offset impacts associated with VMT increases.

Indirect impacts on air quality and MSATs are primarily related to any expected development resulting from project's increased accessibility or capacity to the area. Any increased air pollutant or MSAT emissions resulting from the potential development of the area must meet regulatory emissions limits established by the TCEQ and EPA as well as obtain appropriate authorization from the TCEQ and therefore are not expected to result in any degradation of air quality or MSAT levels.

6.4.4 Water Quality and Waters of the U.S

The proposed project would have direct impacts of 0.21 acres to waters of the U.S. (stream channel impacts resulting from culvert construction). The proposed project's impact to waters of the U.S. would be avoided or minimized by compliance with the USACE Nationwide Permit program and the Federal "No Net Loss" policy. The proposed project would have no impacts to wetlands.

The direct impacts to disturbance of ground are the approximate area of land that would be disturbed during construction of the project. This would be approximately 329 acres of upland vegetation. It is assumed that during construction the total developable area within municipal boundaries and ETJs would be disturbed, except for areas that would be preserved, which is an assumed 10 percent. This would result in an impact of 23,364 acres of impact within the induced development area.

After construction is complete, it is assumed that approximately 60 percent of the total area within the developable land available within the indirect action area would be converted to impermeable surface area. This assumption would result in approximately 14,479 acres of impermeable surface area as a result of indirect effects over the planning horizon. Within this impermeable surface area, there would be typical landscaping and anticipated parkland set asides.

6.4.5 Land Use

Direct impacts to land use would be converting approximately 329 acres in the existing and proposed ROW to transportation use.

Collin County, the City of Melissa, the City of Anna, and the City of Blue Ridge are continuing to become more urbanized. The need and purpose of proposed SH 121 project as stated is to improve traffic mobility, reduce traffic congestion and stimulate economic development (**Section 2.2**). Anticipated growth in the surrounding area would result in increased land development in the vicinity of the roadway. Direct impacts to land use include impacting/converting approximately 329 acres of undeveloped land to transportation use. Induced growth effects are a type of indirect impact to land use that would likely occur as a result of the proposed project. In evaluating the extent of the economic and land development indirect effects, an assumption was made to consider 90 percent all lands inside the municipal boundaries and ETJs of the Cities of Anna, Melissa, and Blue Ridge as fully developed by the end of 2035. It is assumed that 10 percent of available developable land would be preserved for parks and open space within the community. The assumption that full development would occur by the end of 2035 is a scenario for the maximum potential development. As demonstrated in **Table 35**, it is projected that approximately 23,364 acres would be developed in the municipal boundaries and ETJs by 2035.

6.5 Step 5: Reasonably Foreseeable Future Actions

6.5.1 Reasonably Foreseeable Transportation Projects

Reasonably foreseeable transportation project descriptions from the NCTCOG MTP and TIP are provided as follows (see **Figure 13**):

- **Dallas-Fort Worth Regional Outer Loop System – Eastern Sub-region: IH 35 to IH 20/Loop 9**
  - Description: This portion of the proposed Dallas-Fort Worth Regional Outer Loop System travels through Denton, Collin Rockwall, and Kaufman Counties. Several segments of the Outer Loop are currently under study, but the exact alignment has not been identified or environmentally approved.
  - Segments: The eastern sub-region improvements can be divided into five segments:
    - US 175 to IH 30,
    - IH 30 to US 380,
    - US 380 to US 75,
    - Us 75 to the DNT, and
    - DNT to IH 35.
  - Estimated Completion Date: Segments 1, 4, and 5 are projected to be open to traffic by 2030, with segments 2 and 3 open by 2035.
  - Project length/size: The entire length of this corridor is recommended for 6 general purpose toll lanes and 4 continuous frontage road lanes. The proposed project would be approximately 97 miles long.
  - Responsible agency/entity: TxDOT Dallas District

- **US 75 Corridor (North Collin County): Includes SH 121 – FM 545 to US 75**
  - Description: Between County Line Road and SH 121 north of McKinney, US 75 would be reconstructed for 6 general purpose lanes and 4 continuous frontage road lanes. From SH 121 north of McKinney to US 380, US 75 would be rebuilt to carry 8 general purpose lanes and 6 continuous frontage road lanes. Additionally, the existing interchange between US 75 and US 380 in McKinney would be reconstructed. From US 380 to SH 121 south of McKinney, US 75 would be reconstructed to 8 general purpose lanes, 2 concurrent HOV/managed lanes, and 6 continuous frontage roads. This project would also include an upgrade of SH 121 in Melissa to a parkway facility from US 75 to just north of FM 545. The facility would contain 4 general purpose lanes and an improved interchange between SH 121 and SH 5.
  - Segments: The improvements can be divided into five segments:
    - County Line Road to Regional Outer Loop (US 75 Corridor),
    - Regional Outer Loop to SH 121 North (US 75 Corridor),
    - SH 121 North to US 380 (US 75 Corridor),
    - US 380 to SH 121 South (US 75 Corridor), and
    - FM 545 to US 75 (SH 121).
  - Estimated Completion Date: US 75 from the Collin County line to the Regional Outer Loop would be complete by 2060 and the portion from the Regional Outer Loop to SH 121 north of McKinney, would be complete by 2020. The remaining US 75 improvements would be complete by 2020. The SH 121 improvements are expected to be complete by 2035.
  - Project length/size: The proposed project would be approximately 18 miles long.
  - Responsible agency/entity: TxDOT Dallas District

- **US 75 Corridor (Collin/Dallas County): SH 121 to IH 635**
  - Description: Proposed improvements to this portion of the heavily-traveled US 75 corridor in Collin and Dallas Counties stretch from SH 121 to IH 635 through the cities of McKinney, Fairview, Allen, Plano, Richardson, and Dallas. All segments would be widened to add 2 concurrent HOV/managed lanes to the existing general purpose. The segment between Park Boulevard and the PGBT would also be widened for an additional 2 general purpose lanes.
  - Segments: The improvements can be divided into five segments:
    - SH 121 South to Exchange Parkway,
    - Exchange Parkway to Legacy Drive,
    - Legacy Drive to Park Boulevard,
    - Park Boulevard to the PGBT, and
    - PGBT to IH 635.
  - Estimated Completion Date: Portions of the corridor are complete: the entire corridor is anticipated to be fully operational by 2020.
  - Project length/size: The proposed project would be approximately 18 miles long.
  - Responsible agency/entity: TxDOT Dallas District

- **FM 455 from SH 5 to west of Wild Rose Lane**
  - Description: Addition of lanes.
  - TIP Year of Implementation: 2012
  - Project length/size: The proposed project would be approximately 0.47 miles long.
  - Responsible agency/entity: TxDOT Dallas District

- **SH 5 from SH 121 to FM 455**
  - Description: Engineering for reconstruction
  - TIP Year of Implementation: 2013
  - Project length/size: The proposed project would be approximately 4.8 miles long.
  - Responsible agency/entity: TxDOT Dallas District

- **Service road from US 75 to SH 121**
  - Description: Construction of new two-lane service road
    TIP Year of Implementation: 2012
  - Project length/size: The proposed project would be approximately 2.5 miles long.
  - Responsible agency/entity: TxDOT Dallas District

- **FM 455 from US 75 NB frontage road to SH 5**
  - Description: Widen two-lane rural to four-lane urban divided roadway
  - TIP Year of Implementation: 2012
  - Project length/size: The proposed project would be approximately 1.5 miles long.
  - Responsible agency/entity: TxDOT Dallas District

- **Sidewalks in Melissa**
  - Description: Construct sidewalks at Red River and McKinney Streets in Melissa
  - TIP Year of Implementation: 2011
  - Project length/size: The proposed project would be approximately 500 ft in length.
  - Responsible agency/entity: Local contribution from City of Melissa

- **Mantua Rd/CR 371 from SH 5 to US 75**
  - Description: Engineering and construction for expansion of existing roadway from 2 lanes to 4 lanes.
  - Project length/size: The proposed project would be approximately 1.89 miles long.
  - Responsible agency/entity: City of Anna

- **CR 424 from Sheffield Farms to CR 509**
  - Description: Construction only. Public works will do the construction.
  - Project length/size: The proposed project would be approximately 1 mile long.
  - Responsible agency/entity: Collin County

- **Throckmorton Rd from US 75 to East of SH 5**
  - Description: New Arterial. Construct 2 lanes of ultimate 4 lane section of a new location roadway to east of SH 5. The project will include a bridge structure to cross Throckmorton Creek, intersection signalization at SH 5, a rail road crossing, right of way acquisition and utilities relocation and construction.
  - Project length/size: The proposed project would be approximately 1.75 miles long.
  - Responsible agency/entity: City of Melissa

- **Melissa Rd from SH 5 to SH 121**
  - Description: Design of 4 lane divided roadway section from Denton Street to SH 121 along FM545. Construction/reconstruction of existing two lane asphalt pavement roadway from SH5 to SH121 along Denton Street/FM 545. Proposed roadway will be a four-lane divided concrete roadway section with a 37 foot median, curb and gutter and closed drainage system. Proposed project includes signalization upgrade at SH121, new signalization at SH5, signalization at Fannin Road/Melissa Road, a DART rail crossing, and partial right of way acquisition.
  - Project length/size: The proposed project would be approximately 0.70 mile long.
  - Responsible agency/entity: City of Melissa

- **Fannin Rd from Melissa Rd to SH 121**
  - Description: Design and reconstruction of existing two-lane roadway to a four-lane divided roadway with curb and gutter and closed drainage system. Includes signalization at Melissa Road.
  - Project length/size: The proposed project would be approximately 1 mile long.
  - Responsible agency/entity: City of Melissa

- **Davis Rd from US 75 to Fannin Rd**
  - Description: Design and reconstruction of an existing two lane flexbase roadway to a four-lane divided concrete roadway with curb and gutter and closed drainage system. Project will include signalization and right of way acquisition.
  - Project length/size: The proposed project would be approximately 0.50 mile long.
  - Responsible agency/entity: City of Melissa

A description and approximate magnitude of reasonably foreseeable transportation projects are summarized in **Table 40**.

Table 40 Reasonably Foreseeable Transportation Project Impacts

Transportation Project	Approximate Length (miles)	Approximate Future Average Width (ft)	Current Approximate Area (acres)	Future Approximate Area (acres)
Dallas-Fort Worth Regional Outer Loop System – Outside of Eastern Subregion	137	500	New Location	8,291
Dallas-Fort Worth Regional Outer Loop System – Eastern Subregion: IH 35 to IH 20/Loop 9	97	500	New Location	5,900
US 75 Corridor (North Collin County): Includes SH 121 – FM 545 to US 75	18	400	656	984
US 75 Corridor (Collin/Dallas County): SH 121 to IH 635	18	400	636	954
FM 455 from SH 5 to west of Wild Rose Lane	0.47	250	6	16
SH 5 from SH 121 to FM 455	4.8	300	58	187
Service road from US 75 to SH 121	2.5	200	30	61
FM 455 from US 75 NB frontage road to SH 5	1.5	250	18	58

Table 40 Reasonably Foreseeable Transportation Project Impacts

Transportation Project	Approximate Length (miles)	Approximate Future Average Width (ft)	Current Approximate Area (acres)	Future Approximate Area (acres)
Sidewalks in Melissa	0.09	n/a	.05	.05
Mantua Rd from SH 5 to US 75	1.89	300	17	70
CR 424 From Sheffield Farms to CR 509	1	40	5	5
Throckmorton Rd from US 75 to east of SH 5	1.75	300	New Location	66
Melissa Rd from SH 5 to SH 121	0.70	200	4	26
Fannin Rd from Melissa Rd to SH 121	1	200	9	40
Davis Rd from US 75 to Fannin Rd	0.50	200	2	12

6.5.2 Reasonably Foreseeable Private Development Projects

The following projects were developed with consideration to the NCTCOG development website as well as investigating various proposed development maps from public and private sources. The proposed projects are not intended to be an exhaustive list, but rather an estimate of projects in area to reflect current development trends. Reasonably foreseeable private development project descriptions are provided as follows (see **Figure 13**):

- **The Liberty Project**
  - Description: The Liberty Project is located on Patriot Drive in the City of Melissa. Liberty of Melissa is a master-planned community featuring a lake side gazebo, future pool, playground, parks and recreation center. An on-site elementary school is also planned. The development is currently under construction and includes approximately 1,300 new dwelling units.
  - Project length/size: The Liberty Project is approximately 263 acres.
  - Responsible agency/entity: Hillwood Residential

- **Villages of Melissa**
  - Description: The Villages of Melissa is located west of SH 5 in the City of Melissa. The town center will feature the new Melissa City Hall, public library and other civic buildings as well as neighborhood shops and retail establishments. The development will also include park-like green space and walking and biking trails will connect the community. Home styles will range from townhomes in the town center to single-family homes on estate-sized lots. The development includes approximately 1,500 new dwelling units.
  - Project length/size: The Villages of Melissa development is approximately 331 acres.
  - Responsible agency/entity: Holigan Land Development

- **Hunters Ridge**
  - Description: Hunters Ridge is located on Forest Lane in the City of Melissa. The development is currently under construction and includes approximately 151 new dwelling units. Amenities include an exclusive community pool, cabana, and hike-and-bike trails that are adjacent to a city park and playground.
  - Project length/size: Hunters Ridge is approximately 86 acres.
  - Responsible agency/entity: K. Hovnanian Homes
- **The Mantua Project**
  - Description: The Mantua Project development plan includes 3,800 acres of mixed-use development within the Cities of Ann and Van Alstyne.
  - Project length/size: The Mantua Project is approximately 3,800 acres.
  - Responsible agency/entity: MESA

- **The Falls**
  - Description: The Falls is located at FM 455 and US 75. The development includes approximately 100 new dwelling units.
  - Project length/size: The Falls is approximately 53 acres.

- **Anna Market Center**
  - Description: The Anna Market Center is located at FM 455 and CR 367Anna Market Center includes a 13-acre grocery store and retail center, 20-acre city park, 5.5-acre hiking and biking trail, 10-acre medical campus, and 20-acre elementary school. Three retail pad sites along Highway 455 are currently available.
  - Project length/size: The original development was a 70-acre mixed use project, but a portion of it has already been developed.
  - Responsible agency/entity: Underwood Financial Ltd.

6.6 Step 6: Assess Potential Cumulative Impacts

6.6.1 Vegetation and Wildlife Habitat

It has been determined that approximately 12,226 acres of farmland, approximately 29,345 acres of pasture, and approximately 6,041 acres of woodlands would be available for development within the RSA (see **Figure 12**). It is assumed that floodplains are not developable. The vegetation considered to be developable was classified as farmland, pasture, and woodland areas. The reasonably foreseeable future action effects to vegetation and wildlife habitat are quantified in **Table 41**. The anticipated total impact as a result of these actions is approximately 1,246 acres. These acreages were determined by overlaying the reasonably foreseeable project boundaries with the vegetation types within the RSA. Areas where large stands of trees were identified were classified as woodland. Areas where sparse vegetation were present with grasslands were classified as pasture. Areas where roads and houses were identified were classified as developed. Areas where row crops were identified are classified as farmlands. Areas inside the 100-year floodplains were classified as floodplains. Areas that are currently woodlands, pasture, or farmland were considered to be developable lands.

Table 41 Reasonably Foreseeable Project Impacts on Vegetation within the RSA

	Impacts to Vegetation*	
	Approximate Acreage	**Approximate % of RSA**
Reasonably Foreseeable Projects	1,246	2%

**Vegetation includes croplands, pasture, and woodlands.*

6.6.2 Farmland

It has been determined that approximately 12,226 acres of farmland, approximately 29,345 acres of pasture, and approximately 6,041 acres of woodlands would be available for development within the RSA. **Table 42** depicts the anticipated totals for vegetation impacts from reasonably foreseeable projects within the RSA. These acreages were determined by overlaying the reasonably foreseeable project boundaries with the vegetation types within the RSA.

Table 42 Reasonably Foreseeable Impacts on Farmland within the RSA

	Projected Impacts to Farmland (acres)
Reasonably Foreseeable Projects	351

The reasonably foreseeable future action effects to farmland are quantified in **Table 46**. The projected total impact as a result of these actions is 351 acres of impact to farmland, representing approximately 0.5 percent of the RSA.

When major transportation corridors are expanded and/or improved, private development follows. Development such as residential subdivisions, commercial and retail and other development that supports growth, would be expected to take place. Conversion of farmlands to other uses including development often occurs at a greater rate in tracts of farmland that are nearer to the urbanized areas.

6.6.3 Air Quality

Increased development and urbanization can result in increased air pollutant or MSAT emissions resulting from these actions. These must meet regulatory emissions limits established by the TCEQ and EPA as well as obtain appropriate authorization from the TCEQ and therefore are not expected to result in any degradation of air quality or MSAT levels.

Any increased air pollutant or MSAT emissions resulting from increased capacity, accessibility and development are projected to be more than offset by emissions reductions from EPA's new fuel and vehicle standards or addressed by EPA's and TCEQ's regulatory emissions limits programs. Projected traffic volumes are expected to result in minimal impacts on air quality; improved mobility and circulation may benefit air quality. Increases in urbanization would likely have a negative impact on air quality; however planned transportation improvements in the project area as listed in the MTP and the TIP, coupled with EPA's vehicle and fuel regulations fleet turnover, are anticipated to have a cumulatively beneficial impact on air quality.

6.6.4 Water Quality, Floodplains, and Waters of the U.S.

Reasonably foreseeable transportation projects, and other development, have the potential to affect water quality in the study area. Reasonably foreseeable projects would cross 25 individual waters of the U.S. (as identified by the National Hydrologic Dataset).

Components of the Throckmorton Creek Watershed, Sister Grove Creek Watershed, and West Fork Pilot Grove Creek Watershed (70,649 acres) were considered sufficient to capture most cumulative effects of the Build Alternative on water quality because storm water runoff from the of Clemons Creek, Stiff Creek, Brinlee Branch, Elm Grove Creek, and Desert Creek (where the project is located) primarily drains into these sub-basins.

Direct impacts to waters of the U.S. could include channelization, culvert crossings, dredging, and fill impacts. The amount of storm water runoff from induced development that would impact water bodies would be dependent upon the severity and duration of the precipitation event, type of soil, water holding capacity of the soil, permeability of the soil, and the distances of the water bodies relative to the storm water outfalls. Hydrologic modeling would be required to estimate the volume of storm water that would impact the water bodies. Storm water sampling and chemical analysis would be required to determine the types and concentrations of pollutants in the storm water. Hydrologic modeling, storm water sampling, and chemical analysis are beyond the scope of this water quality indirect effects analysis. Therefore, typical storm water pollutants were discussed in a qualitative manner and the acreage of impervious surfaces was the unit of measurement used to quantify the effects on water quality.

As a result of water quality regulations and permitting requirements, approximately five percent of streams would be permanently impacted from reasonably and foreseeable actions. **Table 43** summarizes the projected impacts to streams and floodplains from reasonably foreseeable projects.

Table 43 Reasonably Foreseeable Impacts on Water Quality, Floodplains, and Waters of the U.S. within the RSA

	Streams Present within the RSA (linear stream miles)	Projected Impacts to Streams* (linear stream miles)	Floodplains Present in the RSA (acres)	Projected Impacts to Floodplains* (acres)
Reasonably Foreseeable Projects	3.7	0.2	66.1	3.3

**Assumes that 5 percent of streams and floodplains would be permanently impacted by fill, dredging, etc. activities during reasonably foreseeable projects*.

Approximately 0.2 linear miles of stream and 3.3 acres of floodplains are projected to be impacted from reasonably foreseeable projects within the RSA. Assuming appropriate implementation of regulation control strategies and policies, future potential impacts to the area's water quality could be expected to be reduced to have a minimum impact.

6.6.5 Land Use

With regard to reasonably foreseeable projects, impacts to land use have been determined by overlaying the reasonably foreseeable project boundaries with the developable land within the RSA. As shown in **Table 44**, anticipated totals for conversion to developed land from reasonably foreseeable projects within the land use RSA is approximately 1,906 acres.

Table 44 Reasonably Foreseeable Impacts on Land Use within the RSA

	Farmland	Pasture	Woodland
Reasonably Foreseeable Projects	351	758	214

Although the proposed project would affect approximately 412 acres, other future developments could cumulatively affect the current major land use within the RSA. As the communities of Anna, Melissa, and Blue Ridge continue to grow, future development would affect agricultural lands that comprise the majority of the project corridor. As additional development and expansion occurs, increased demands on transportation routes could occur. New highways or increased capacity (*i.e.*, widening) of existing highways would be required.

6.7 Step 7: Results of Cumulative Impact Analysis

6.7.1 Vegetation and Wildlife Habitat

Cumulative impacts analyzed the crops, pasture, and woodland land uses for transportation and private development for reasonably foreseeable projects. Results of the Cumulative Impact Analysis are summarized in **Table 45**.

Table 45 Cumulative Impacts on Vegetation within the RSA

	Approximate Acreage of Farmland Impacted	Approximate Acreage of Pasture Impacted	Approximate Woodland Acreage Impacted	Total Vegetation
Direct Impacts	100	180	49	329
Anticipated Indirect Impacts*	8,241	13,103	2,020	23,364
Reasonably Foreseeable Projects				
Reasonably foreseeable transportation Projects	237	405	66	707
The Liberty Project	18	227	0	246
Villages of Melissa	96	98	99	293
Hunters Ridge	0	0	0	0
Anticipated Cumulative Impacts	**8,692**	**14,013**	**2,234**	**24,938**

**Anticipated indirect impacts assume 90% developed within the municipal boundaries and ETJs by 2035.*

The cumulative impacts to vegetation are estimated to be 24,938 acres within the 70,649 acre RSA. This is approximately 35 percent of the vegetation within the RSA. It is concluded that there would not be substantial cumulative impacts to vegetation within the RSA given past, current, and reasonably foreseeable actions. Mitigation issues are carried forward and discussed in **Step 8**.

6.7.2 Farmland

Results of the Cumulative Impact Analysis are summarized in **Table 46**.

Table 46 Summary of Cumulative Impacts to Farmland

	Approximate Farmland Acreage
Direct Impacts	100
Anticipated Indirect Impacts*	8,241
Reasonably Foreseeable Projects	351
Anticipated Cumulative Impacts	8,692

*Anticipated indirect impacts assume 90% developed within the municipal boundaries and ETJs by 2035.

The cumulative impacts to farmland are estimated to be 8,692 acres within the 70,649 acre RSA. This is approximately 12 percent of the farmland within the RSA. It is concluded that there would not be substantial cumulative impacts to farmland within the RSA given past, current, and reasonably foreseeable actions. Mitigation issues are carried forward and discussed in **Step 8**.

6.7.3 Air Quality

The cumulative impact on air quality from the proposed project and other reasonably foreseeable transportation projects are addressed at the regional level by analyzing the air quality impacts of transportation projects in the 2035 MTP and the 2011-2014 TIP – 2011 Amendment. The proposed project and the other reasonably foreseeable transportation projects were included in the MTP and the TIP. When combined, planned transportation improvements, revised EPA fuel and vehicle regulations, and fleet turnover are anticipated to have a cumulatively beneficial impact on air quality.

6.7.4 Water Quality and Waters of the U.S

Potential cumulative impacts considered and discussed include direct and indirect impacts to the water quality as a result of implementation of the Build Alternative in combination with the effects of other past, present, and reasonably foreseeable public and private actions.

It is assumed that approximately 60 percent of the total area within the reasonable foreseeable actions would be converted to impermeable surface area. This assumption would result in approximately 1,580 acres of impermeable surface area as a result of reasonably foreseeable actions. Cumulative impacts were analyzing the farmland, pasture, and woodland land uses for transportation and private development reasonably foreseeable projects. Results of the Cumulative Impact Analysis are summarized in **Table 47**.

Table 47 Cumulative Impacts on Waters of the U.S. within the RSA

	Linear Miles of Waters of the U.S.
Direct Impacts	1.72
Anticipated Indirect Impacts*	7.70
*Reasonably Foreseeable Actions***	
Reasonably foreseeable transportation Projects	0.15
The Liberty Project	0.04
Villages of Melissa	0.00
Hunters Ridge	0.00
Anticipated Cumulative Impacts	**9.60**

**Anticipated indirect impacts assume 5 percent of waters of the U.S. filled within the municipal boundaries and ETJs by 2035.*
***Assumes that 5 percent of streams and floodplains would be permanently impacted by fill, dredging, etc. activities during reasonably foreseeable projects.*

The cumulative impacts to Waters of the U.S. are estimated to be 9.6 linear miles within the 110 square mile RSA. It is concluded that there would not be substantial cumulative impacts to Waters of the U.S. within the RSA given past, current, and reasonably foreseeable actions. Mitigation issues are carried forward and discussed in **Step 8**.

Based upon the results of this analysis, impacts to water quality and waters of the U.S. are not expected to be substantial.

6.7.5 Land Use

The proposed project would permanently affect approximately 412 acres of land, of which approximately 317.1 acres is agricultural land, open rangeland and developed/disturbed lands. The construction and operation of the roadway would not conflict with known land use plans, and would not substantially alter the availability of farm or rangelands in the region. Other actions would affect undeveloped, developed, agriculture, and open rangeland. Future urban development surrounding the Cities of Anna, Melissa, and Blue Ridge would also permanently convert disturbed and agricultural lands, particularly within the study corridor, regardless of whether the proposed project is implemented. The amount of land impacted by the proposed project (approximately 412 acres), when combined with other actions, would not cumulatively amount to what would be considered a substantial percent of the total land area within the RSA. Therefore, the proposed project is not expected to result in substantial cumulative adverse effects on land use within the RSA.

Based upon the results of this analysis, impacts to land use are not expected to be substantial.

6.7.6 Cumulative Impacts Conclusion

Based upon the results of this cumulative impact analysis, impacts to Vegetation and Wildlife Habitat, Farmland, Air, Water Quality, Waters of the U.S. and Land Use are not expected to be substantial.

6.8 Step 8: Assess Mitigation Issues

6.8.1 Vegetation and Wildlife Habitat

Transportation Code §201.607 directs TxDOT to adopt memoranda of understanding with appropriate environmental resource agencies including TPWD. The responsibilities of TPWD relate primarily to its function as a natural resource agency, including its resource protection functions designated by Parks and Wildlife Code. TPWD acts as the state agency with primary responsibility to protect the state's fish and wildlife resources. The TxDOT/TPWD MOA provides an efficient and consistent methodology for describing habitats, transportation impacts to those habitats after avoidance and minimization efforts and mitigation to be considered as a result of those impacts. The MOA sets forth resources that would give consideration for compensatory mitigation.

Municipal governments have the authority to avoid, minimize and mitigate cumulative impacts to vegetation and habitat within their jurisdictions through application of zoning and land use regulations that guide the intensity, type and location of new development. The zoning and land use regulations are designed to minimize the adverse effects of growth and urbanization.

The proposed project's impacts to vegetation and habitat would be avoided and minimized in compliance with the TxDOT/TPWD MOA. Similarly, the impacts to vegetation and habitat of the reasonably foreseeable transportation projects would be avoided, minimized and mitigated in compliance with the TxDOT/TPWD MOA. The impacts of reasonably foreseeable development to vegetation and habitat would be avoided, minimized, and mitigated through enforcement of applicable municipal zoning and land use regulations. Additionally, USFWS and TPWD regulations would apply to those actions that are subject to state and federal jurisdiction.

6.8.2 Farmland

Transportation Code §201.607 directs TxDOT to adopt memoranda of understanding with appropriate environmental resource agencies including NRCS. Prime and unique farmlands fall under the jurisdiction of the USDA through the FPPA. The USDA NRCS administers the regulations and provides guidance for the completion of USDA Form CPA 106 for corridor-type projects with potential impacts to prime and unique farmlands. The project area includes farmland including prime and unique farmland (**Section 4.1.0**).

The FPPA was enacted based on concerns that millions of acres of farmland were being lost to development each year. The issue was identified in the National Agricultural Land Study of 1980-81, resulting in the need for the U.S. Congress to implement policies to protect farmlands and minimize urban sprawl. As a result, prime and unique farmlands are protected by Section 1540(b) of the FPPA 7 USC 4201(b), which proposes to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmlands to non-agricultural uses.

Private development impacts to prime and unique farmland are minimized by enforcement of USFWS and TPWD regulations for actions that are subject to state and federal jurisdiction. Municipal governments have the authority to avoid, minimize and mitigate cumulative impacts to vegetation and habitat within their jurisdictions through application of zoning and land use regulations that guide the intensity, type and location of new development. The zoning and land use regulations are designed to minimize the adverse effects of growth and urbanization.

6.8.3 Air Quality

A variety of federal, state, and local regulatory controls as well as local plans and projects have had a beneficial impact on regional air quality. The CAA, as amended, provides the framework for federal, state, tribal, and local rules and regulations to protect air quality. The CAA required the EPA to establish NAAQS for pollutants considered harmful to public health and the environment. In Texas, the TCEQ has the legal authority to implement, maintain, and enforce the NAAQS. The TCEQ establishes the level of quality to be maintained in the state's air and to control the quality of the state's air by preparing and developing a general comprehensive plan. Authorization in the Texas Clean Air Act (TCAA) allows the TCEQ to do the following: collect information and develop an inventory of emissions; conduct research and investigations; prescribe monitoring requirements; institute enforcement; formulate rules to control and reduce emissions; establish air quality control regions; encourage cooperation with citizens' groups and other agencies and political subdivisions of the state as well as with industries and the federal government; and to establish and operate a system of permits for construction or modification of facilities. Local governments having some of the same powers as the TCEQ can make recommendations to the commission concerning any action of the TCEQ that may affect their territorial jurisdiction, and can execute cooperative agreements with the TCEQ or other local governments. In addition, a city or town may enact and enforce ordinances for the control and abatement of air pollution not inconsistent with the provisions of the TCAA or the rules or orders of the TCEQ.

The CAA also requires states with areas that fail to meet the NAAQS prescribed for criteria pollutants to develop a SIP. The SIP describes how the state would reduce and maintain air pollution emissions in order to comply with the federal standards. Important components of a SIP include emission inventories, motor vehicle emission budgets, control strategies to reduce emissions, and an attainment demonstration. The TCEQ develops the Texas SIP for submittal to the EPA. One SIP is created for each state, but portions of the plan are specifically written to address each of the non-attainment areas. These regulatory controls, as well as other local transportation and development initiatives implemented throughout the north central Texas metropolitan area by local governments and other entities provide the framework for growth throughout the area consistent with air quality goals. As part of this framework, all major transportation projects, including the proposed project, are evaluated at the regional level by the NCTCOG for conformity with the SIP.

The cumulative impact of reasonably foreseeable future growth and urbanization on air quality within this area would be minimized by enforcement of federal and state regulations, including the EPA and TCEQ. These regulations are designed to ensure that growth and urbanization do not prevent regional compliance with the ozone standard or threaten the maintenance of the other air quality standards.

6.8.4 Water Quality and Waters of the U.S

The cumulative impact of these future actions to water quality would be minimized by enforcement of applicable TCEQ, USACE, USFWS, TPWD, and USCG regulations for projects subject to state and federal jurisdiction.

The reasonably foreseeable impacts of both roadway construction and private construction would be required to comply with the TPDES requirements. Impacts to water quality would be reduced by the implementation of BMPs for future construction projects. Regardless of the project type proposed, compliance with the requirements of TCEQ's TPDES General Permit No.

TXRI50000 would reduce soil erosion due to construction activities. In order to comply with TPDES General Permit No. TXRI50000 for Construction Activities requirements, a NOI would be filed with TCEQ stating that TxDOT would have a SW3P in place during construction of this project and a construction site notice would be posted. The SW3P utilizes the temporary control measures as outlined in the TxDOT's manual *Standard Specifications for the Construction of Highways, Streets, and Bridges*. Impacts would be minimized by avoiding work with construction equipment directly in the stream channels and/or adjacent areas. No permanent water quality impacts are expected as a result of the proposed project.

Implementation of a SW3P would minimize impacts to water quality during construction, the proposed project would utilize temporary erosion and sedimentation control practices (i.e., silt fence, rock berm and drainage swales) from TxDOT's manual *Standard Specifications for the Construction of Highways, Streets, and Bridges*. The erosion control would be temporary vegetation and mulch. The sedimentation control would be silt fence and rock berms. The post construction TSS control would be grass swales.

6.8.5 Land Use

The proposed project would permanently affect approximately 412 acres of land, of which approximately 317 acres is agricultural land, open rangeland and developed/disturbed lands. The construction and operation of the roadway would not conflict with known land use plans, and would not substantially alter any land use plans in the RSA.

Municipal governments have the authority to avoid, minimize and mitigate cumulative impacts to vegetation and habitat within their jurisdictions through application of zoning and land use regulations that guide the intensity, type and location of new development. The zoning and land use regulations are designed to minimize the adverse effects of growth and urbanization.

Instruments that would control land development involve the established comprehensive plan for the City of Melissa, accompanying land use development codes, and the subdivision plat approval process for Collin County. The Collin County Commissioner's Court adopted subdivision regulations to provide minimum standards for land subdivisions and developments and prevent substandard subdivisions in the county. The subdivision regulations provide for the safety, health and well being of the general public. The regulations require subdivision construction standards for streets, drainage, water availability and sewage facilities conducive to a superior quality of life and maintainability without imposing a burden to the taxpayers.

7.0 PERMITS AND COMMITMENTS

This section summarizes the elements that constitute the Environmental Permits, Impacts and Commitment (EPIC) Sheet. The EPIC sheet, found in the Environmental Tracking System, documents and communicates permit issues and environmental commitments that must be incorporated into the Plans, Specifications, and Estimates. The permits, impacts and commitments relevant to the proposed project are detailed in **Table 48** as follows:

Table 48 Permits and Commitments

Clean Water Act, Section 401 and 404 Compliance Commitments
General Condition 21 (Water Quality) of the NWP Program requires applicants using NWP 14 to comply with Section 401 of the Clean Water Act. Compliance with Section 401 requires the use of BMPs to manage water quality on construction areas. The SW3P would include at least one BMP from the 401 Water Quality Certification Conditions for NWPs as published by the TCEQ, April 26, 2007. These BMPs would address each of the following categories: • Category I Erosion Control, • Category II Sedimentation Control, and • Category III Post Construction Total Suspended Solids (TSS). Category I would be addressed by applying temporary reseeding (TxDOT-approved seeding specifications) and mulch to disturbed areas. Category II would be addressed by installing silt fences combined with rock berms. Category III Post-Construction TSS Control devices would consist of grass swales. Erosion control devices would be implemented and maintained until construction is complete. Sedimentation control devices would be maintained and remain in place until completion of the project.
Clean Water Act, 402 Texas Pollutant Discharge Elimination System (TPDES) Commitments
The proposed project would disturb more than one acre, therefore, TxDOT would be required to comply with the TCEQ Texas Pollutant Discharge Elimination System General Permit for Construction Activity. The project would disturb more than five acres; therefore, a notice of Intent would be filed to comply with TCEQ stating that TxDOT would have a SW3P in place during construction of the proposed project. Measures would be taken to prevent or correct erosion that might develop during construction.
Section 402 of the Clean Water Act: TPDES, Municipal Separate Storm Sewer System (MS4)
This proposed project is located within the boundaries of the City of Melissa Municipal Separate Storm Sewer System (MS4), and would comply with the applicable MS4 requirements.
Corridor Development Certificate
The proposed project is outside of the Trinity River Corridor Development Regulatory Zone and a Corridor Development Certificate would not be required.
Floodplains
The proposed project would not increase the base flood elevation to a level that would violate the applicable floodplain regulations or ordinances, therefore, no coordination with the FEMA or the local floodplain administrator would be required.
Cultural Resources Commitment
Evaluation of project effects on archeological resources could not be completed because right-of-entry was denied to some properties, preventing archeologists from conducting the necessary field work. Once access to the areas requiring field investigations has been obtained, TxDOT will complete all required investigations and consultation.
Vegetation Resources Commitment
No mitigation is offered for this project.
Threatened and Endangered Species
The project area contains habitat that may be potentially suitable for the Henslow's Sparrow, Western Burrowing Owl, A crayfish, Plains spotted skunk, the Texas Garter Snake and the Timber/Canebrake Rattlesnake. Since these species may be encountered during construction, the contractor would be notified (via the EPIC sheet, general notes, and/or pre-construction meeting) of this potential and to take the necessary measures to avoid harm to these species.
Migratory Bird Treaty Act
Between October 1 and February 15, the contractor would remove all old migratory bird nests from any structures that would be affected by the proposed project, and complete any bridge work and/or vegetation clearing. In addition, the contractor would be prepared to prevent migratory birds from building Nests between February 15 and October 1, per the Environmental Permits, Issues, and Commitments

Table 48 Permits and Commitments

(EPIC) plans. In the event that migratory birds are encountered on-site during project construction, adverse impacts on protected birds, active nests, eggs, and/or young would be avoided.
Hazardous Materials or Contamination Issues Commitment
Measures and contingencies would be developed to address worker safety, material recycling and proper management of the SH 121 bridges at Sister Grove Creek Bridge, Pilot Grove Creek Bridge, and Desert Creek Bridge that have steel coatings and the presence of Lead Based Paint (LBP).
Other Environmental Issues Commitment
Measures to control fugitive dust would be considered and incorporated into the final design and construction specifications.

8.0 PUBLIC INVOLVEMENT

A public meeting was held on May 15, 2007 at Melissa First Baptist Church in Melissa, Texas. One hundred thirty three (133) private citizens attended the meeting. Also in attendance were 18 representatives of TxDOT, elected officials, city employees and TxDOT's consultant. The overall reaction of the attendees was positive. A copy of the public involvement package is attached (**Appendix F**). A public hearing would be held on a date and location to be determined.

9.0 CONCLUSION

Based on the engineering, social, economic, and environmental investigations conducted thus far, along with implementation of the identified mitigation and/or compensation measures discussed in this Environmental Assessment, the proposed project would have no significant impact on the natural or human environment. A Finding of No Significant Impact (FONSI) is anticipated for this project.

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Figures

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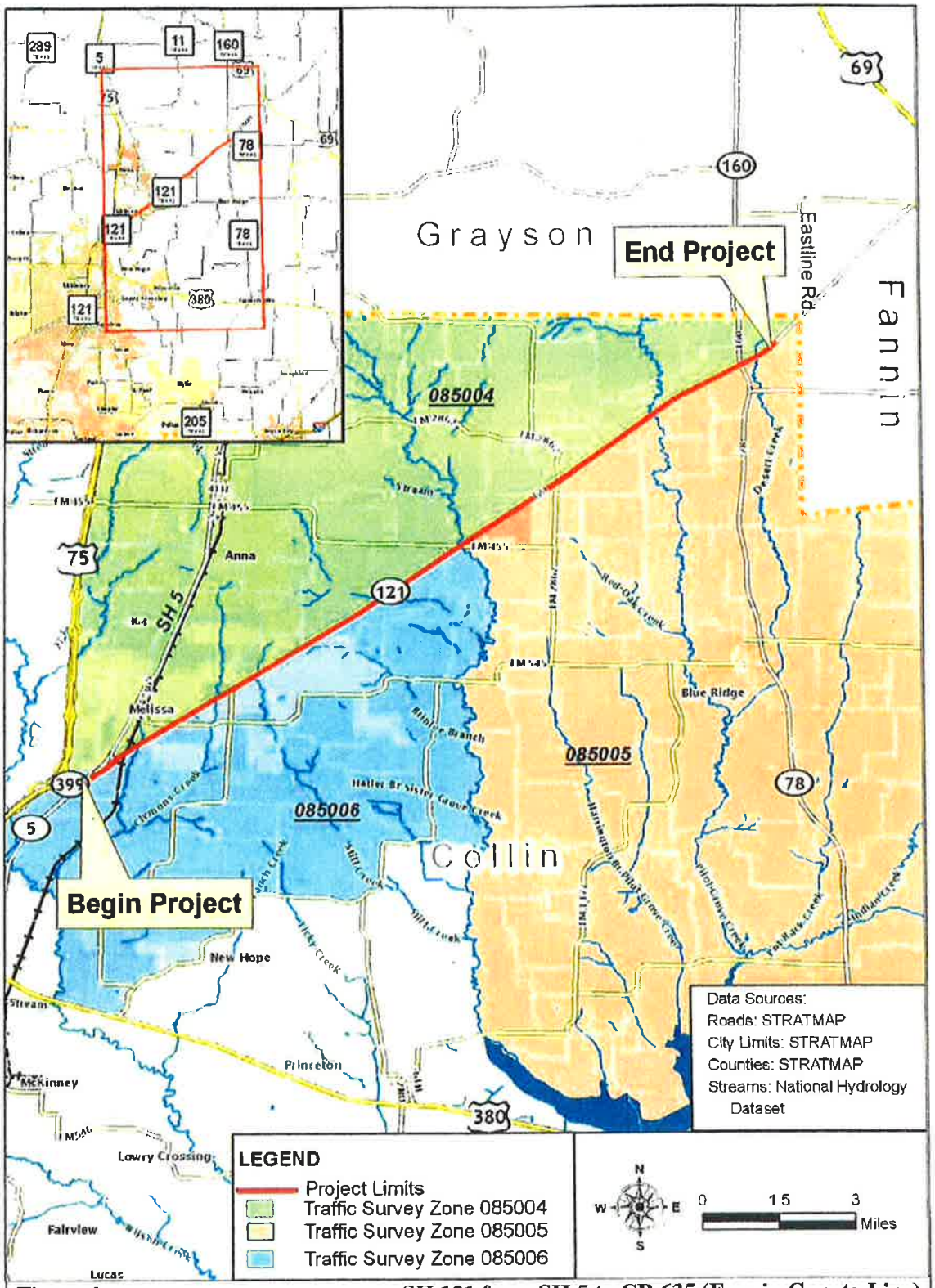

Figure 1
Project Vicinity Map

SH 121 from SH 5 to CR 635 (Fannin County Line)
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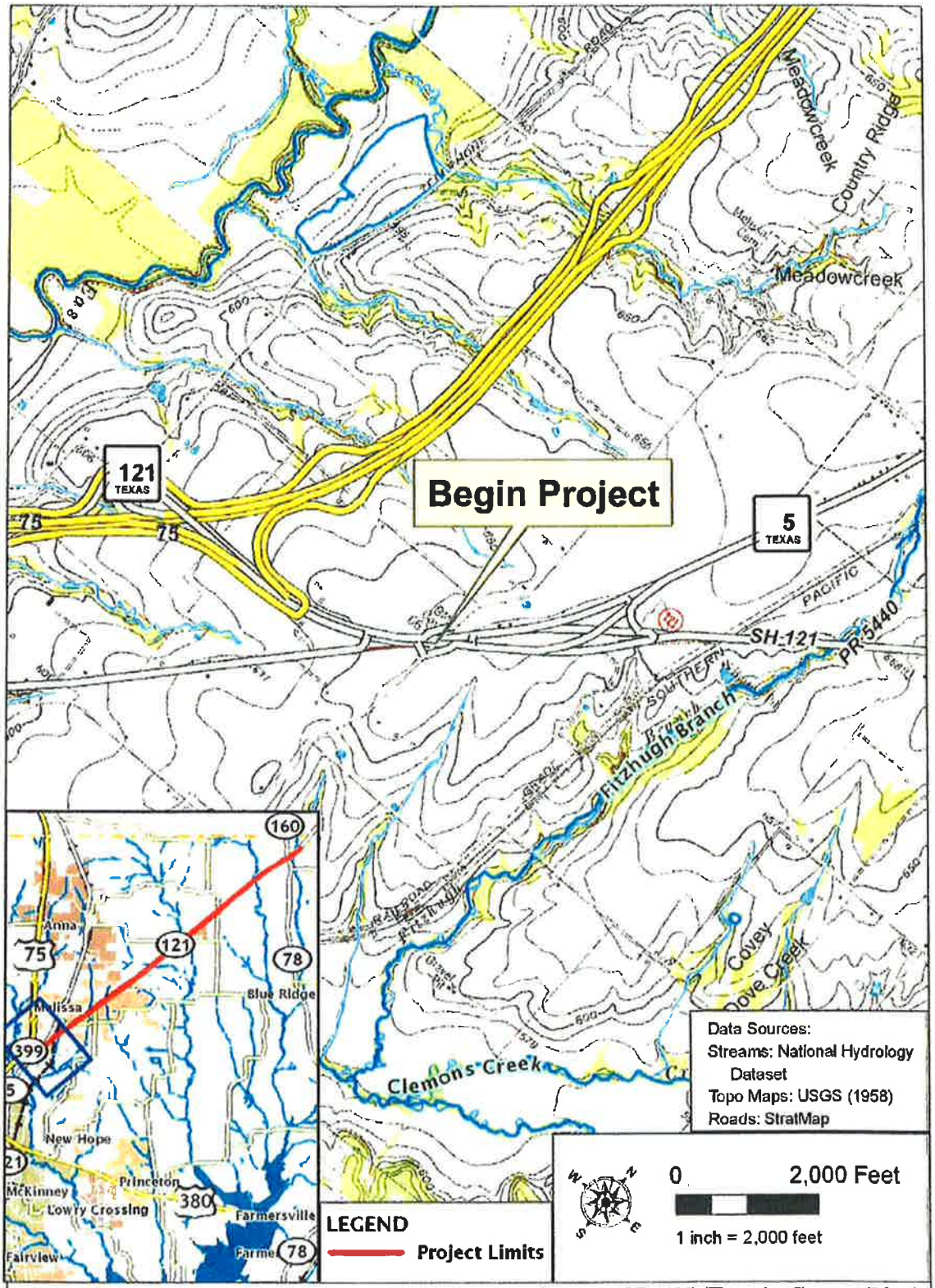

Figure 2a
USGS Topographic Map 1 of 7
Anna Quad

SH 121 from SH 5 to CR 635 (Fannin County Line)
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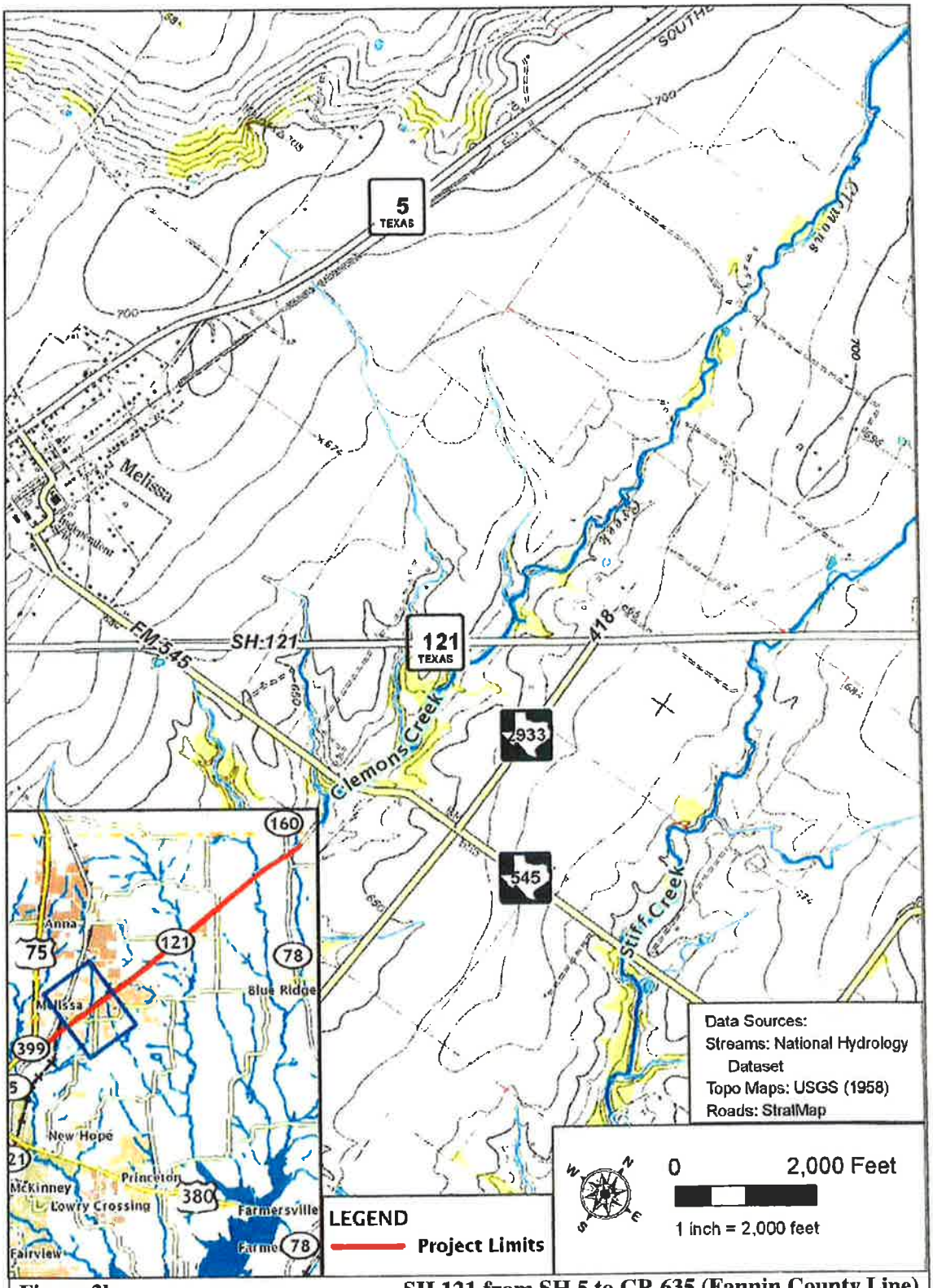

Figure 2b
USGS Topographic Map 2 of 7
Anna Quad

SH 121 from SH 5 to CR 635 (Fannin County Line)
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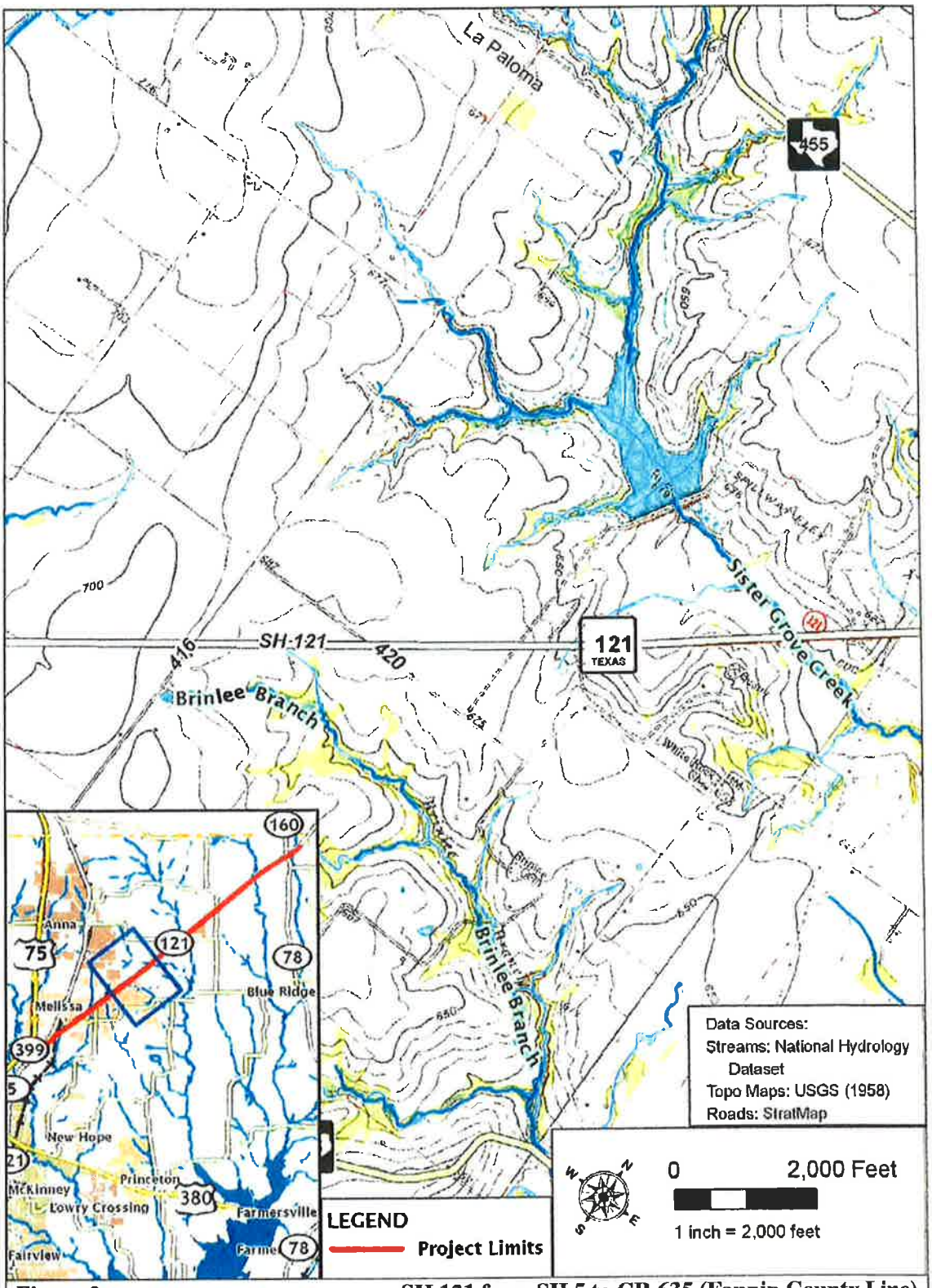

Figure 2c
USGS Topographic Map 3 of 7
Anna Quad

SH 121 from SH 5 to CR 635 (Fannin County Line)
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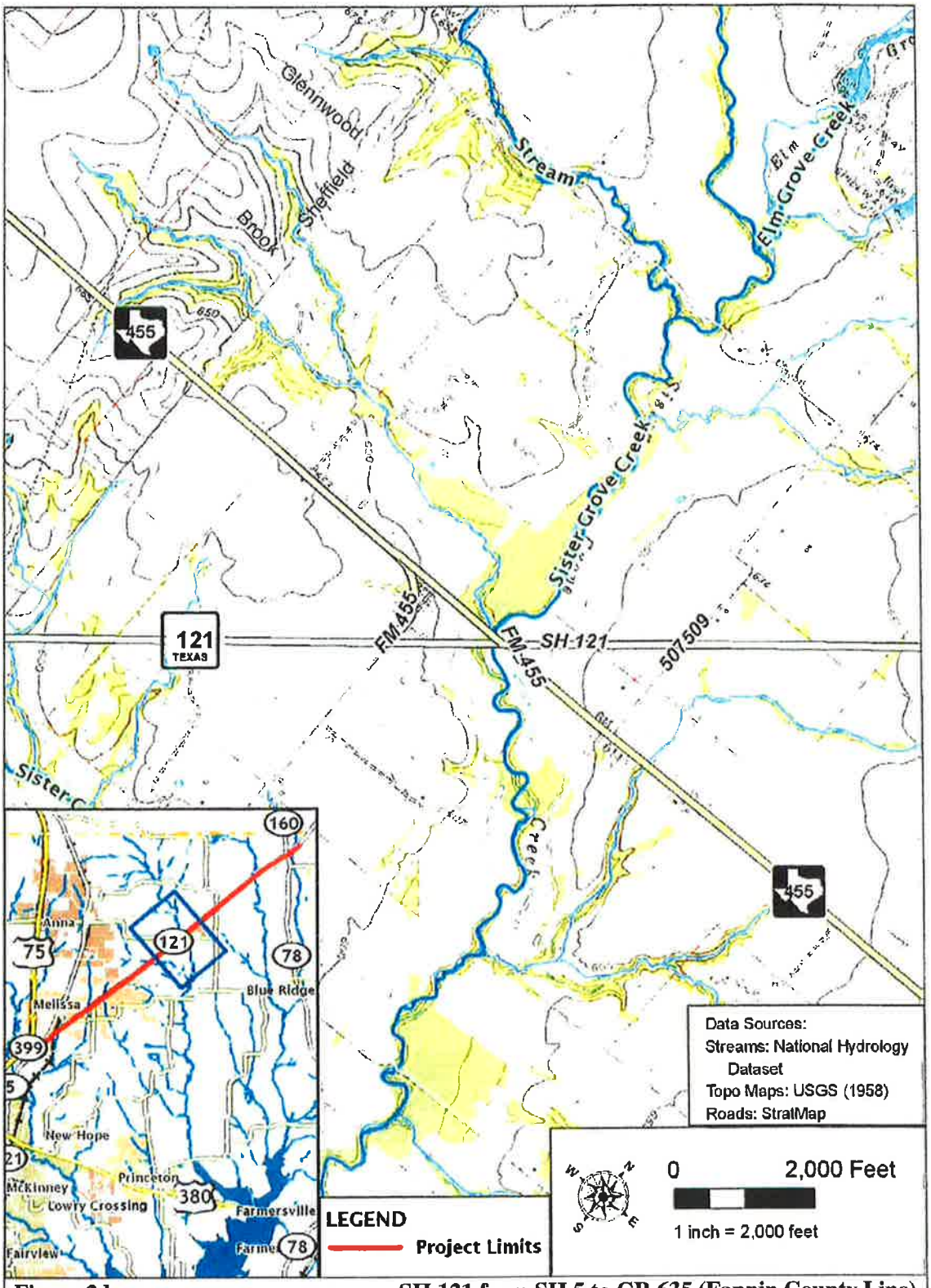

Figure 2d
USGS Topographic Map 4 of 7
Anna Quad

SH 121 from SH 5 to CR 635 (Fannin County Line)
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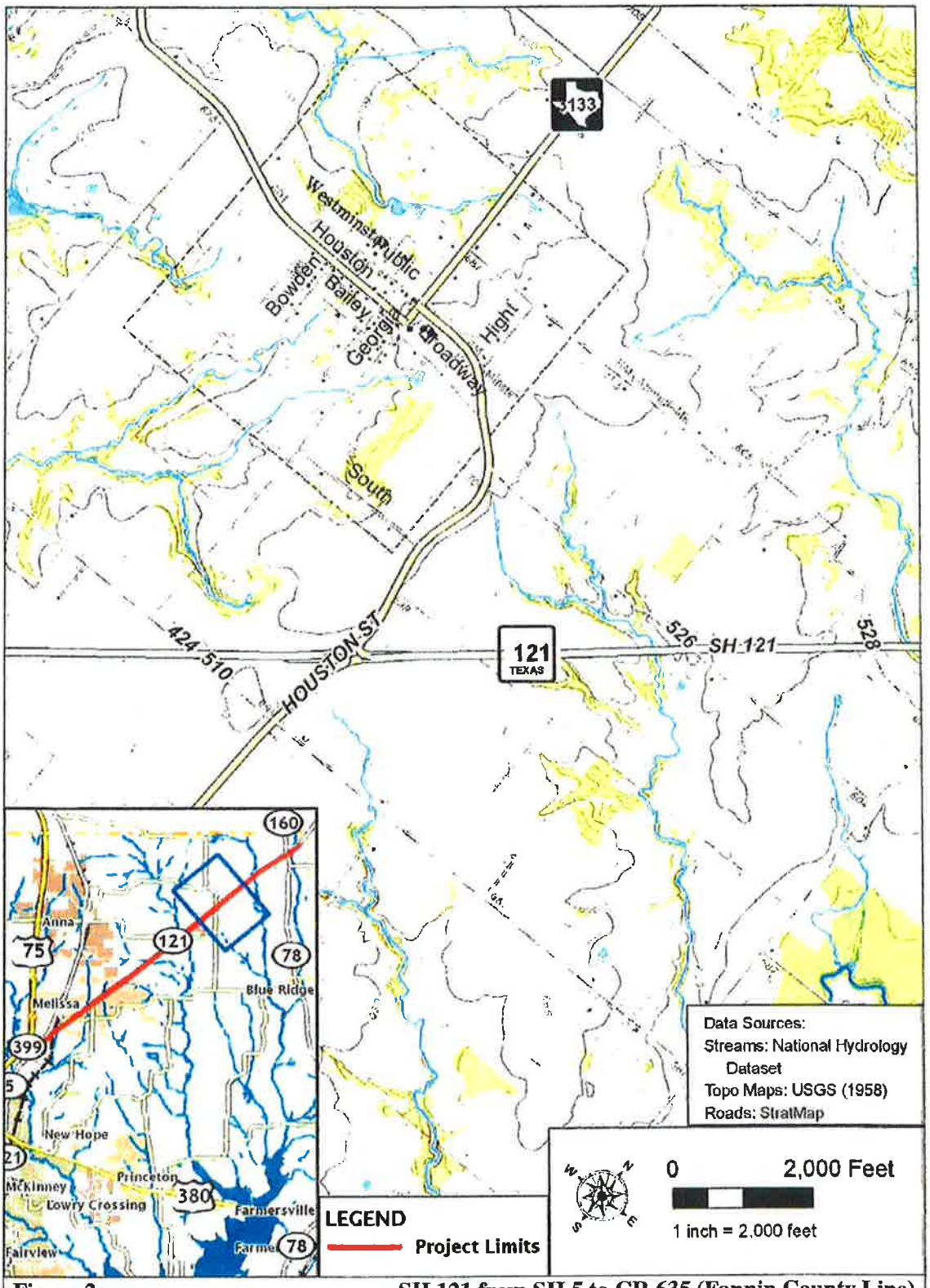

Figure 2e
USGS Topographic Map 5 of 7
Anna Quad

SH 121 from SH 5 to CR 635 (Fannin County Line)
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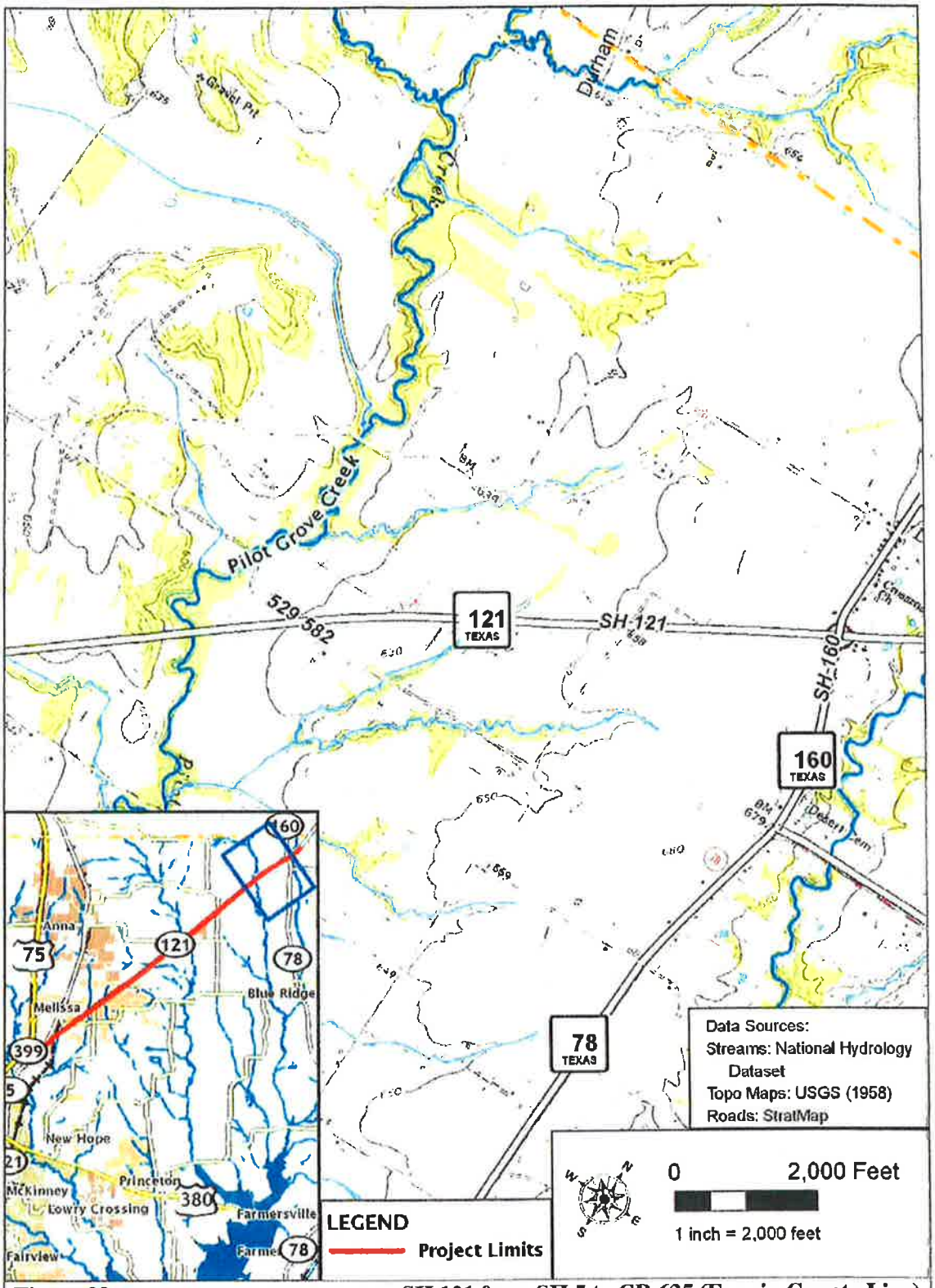

Figure 2f
USGS Topographic Map 6 of 7
Anna Quad

SH 121 from SH 5 to CR 635 (Fannin County Line)
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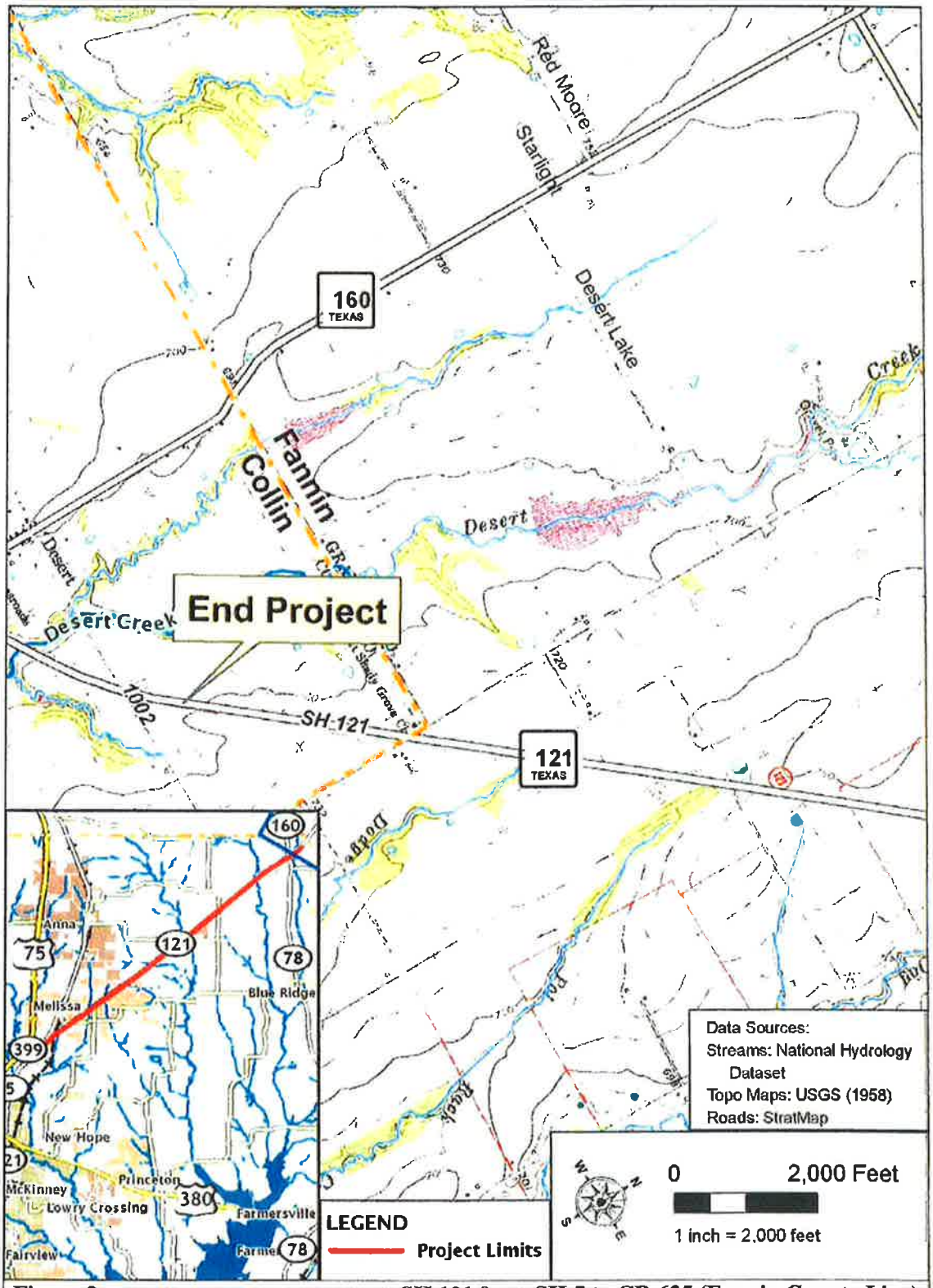

Figure 2g
USGS Topographic Map 7 of 7
Anna Quad

SH 121 from SH 5 to CR 635 (Fannin County Line)
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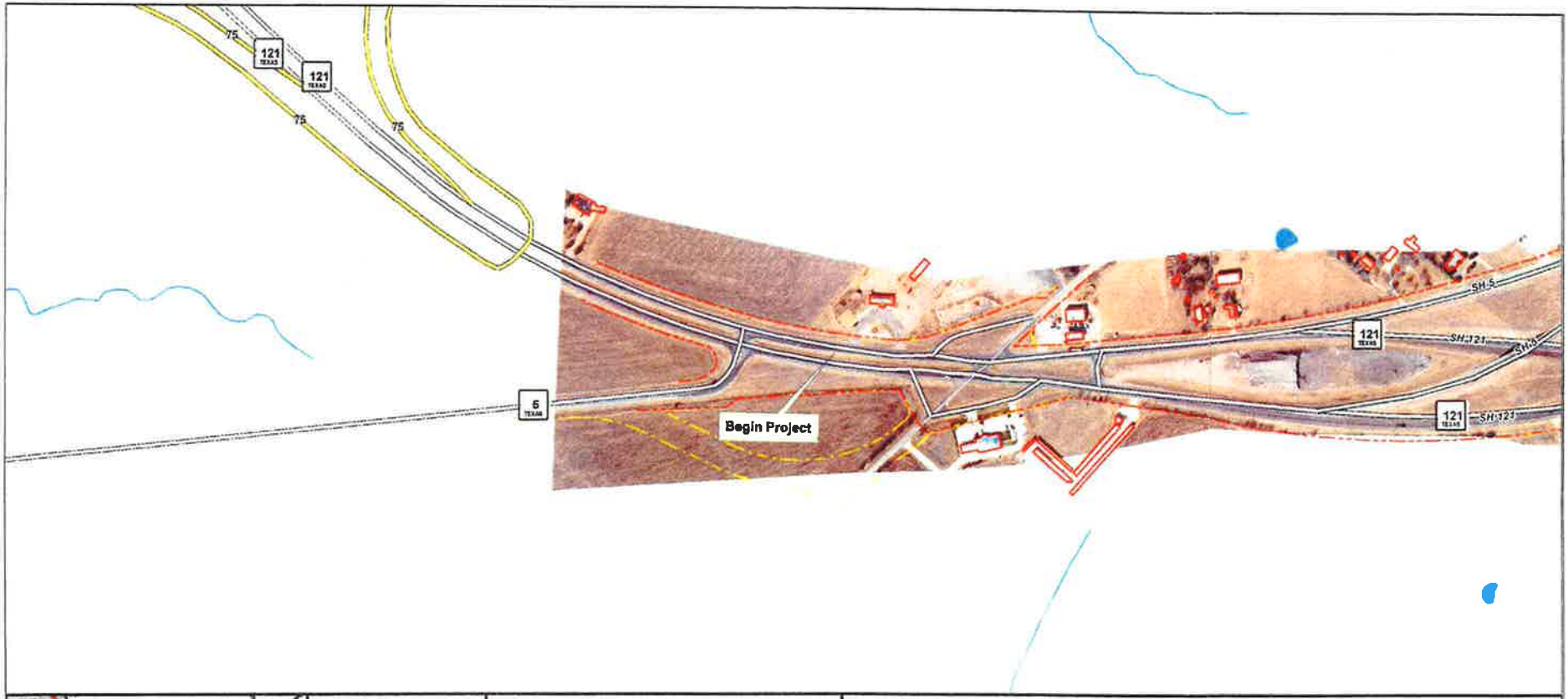

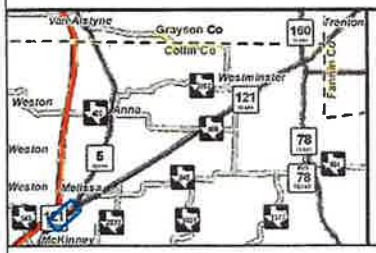

0 200 400 Feet

1 inch = 400 feet

LEGEND

- Proposed ROW
- Existing ROW
- Parcel
- Structure
- Rail
- City Limits
- County Limits
- Stream
- Waterbody
- Floodplain
- Stream Data Form
- Woodland Data Form
- Wetland Data Form
- P# Photo Location and Direction
- Noise Reciever
- Hazardous Waste/ Substance Site

Data Sources
Aerial: SAM Images (2006)
Streams: National Hydrology Dataset
Roads: STRATMAP

Figure 3a
Aerial and Photo Location Map 1 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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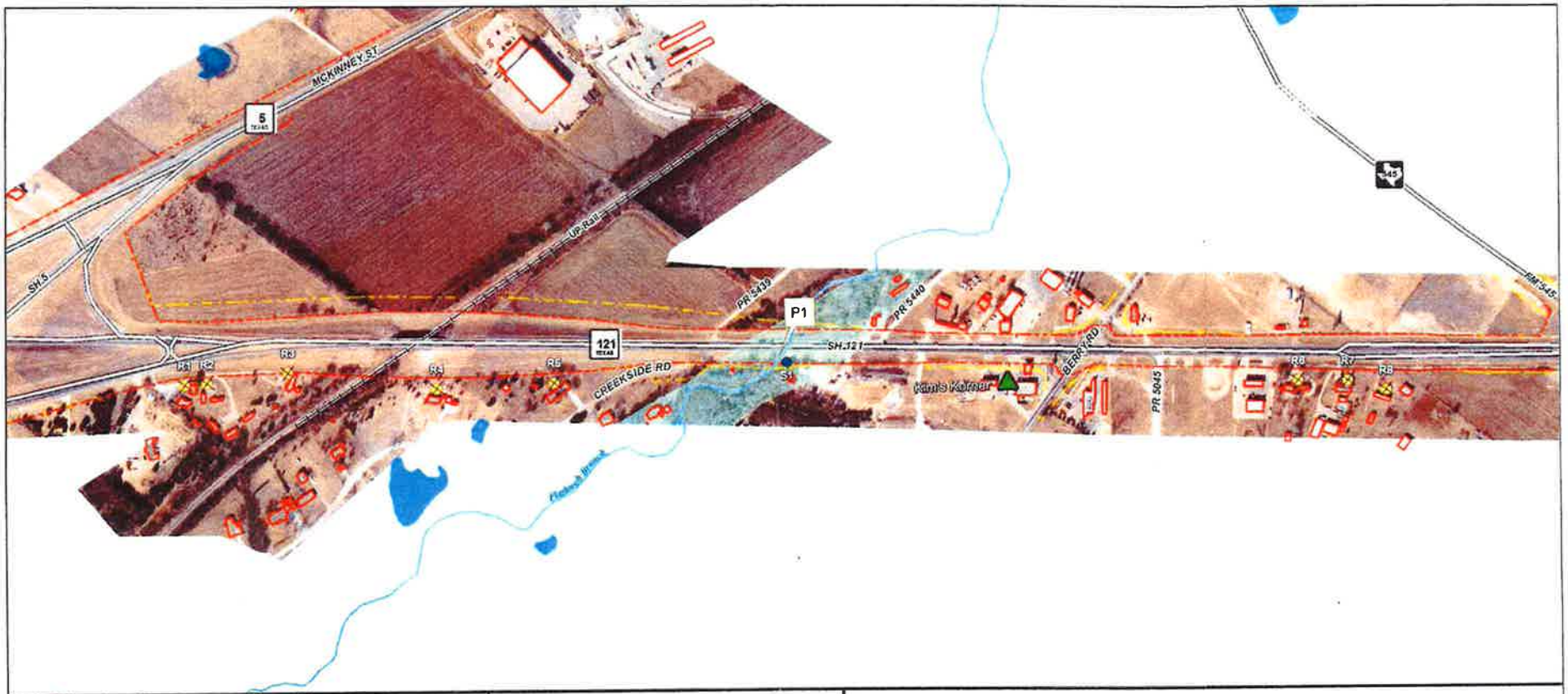

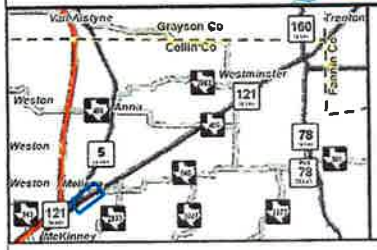

0 200 400 Feet

1 inch = 400 feet

LEGEND

- Proposed ROW
- Existing ROW
- Parcel
- Structure
- Rail
- City Limits
- County Limits
- Stream
- Waterbody
- Floodplain
- Stream Data Form
- Woodland Data Form
- Wetland Data Form
- P# Photo Location and Direction
- Noise Reciever
- Hazardous Waste/ Substance Site

Data Sources
Aerial: SAM Images (2006)
Streams: National Hydrology Dataset
Roads: STRATMAP

Figure 3b
Aerial and Photo Location Map 2 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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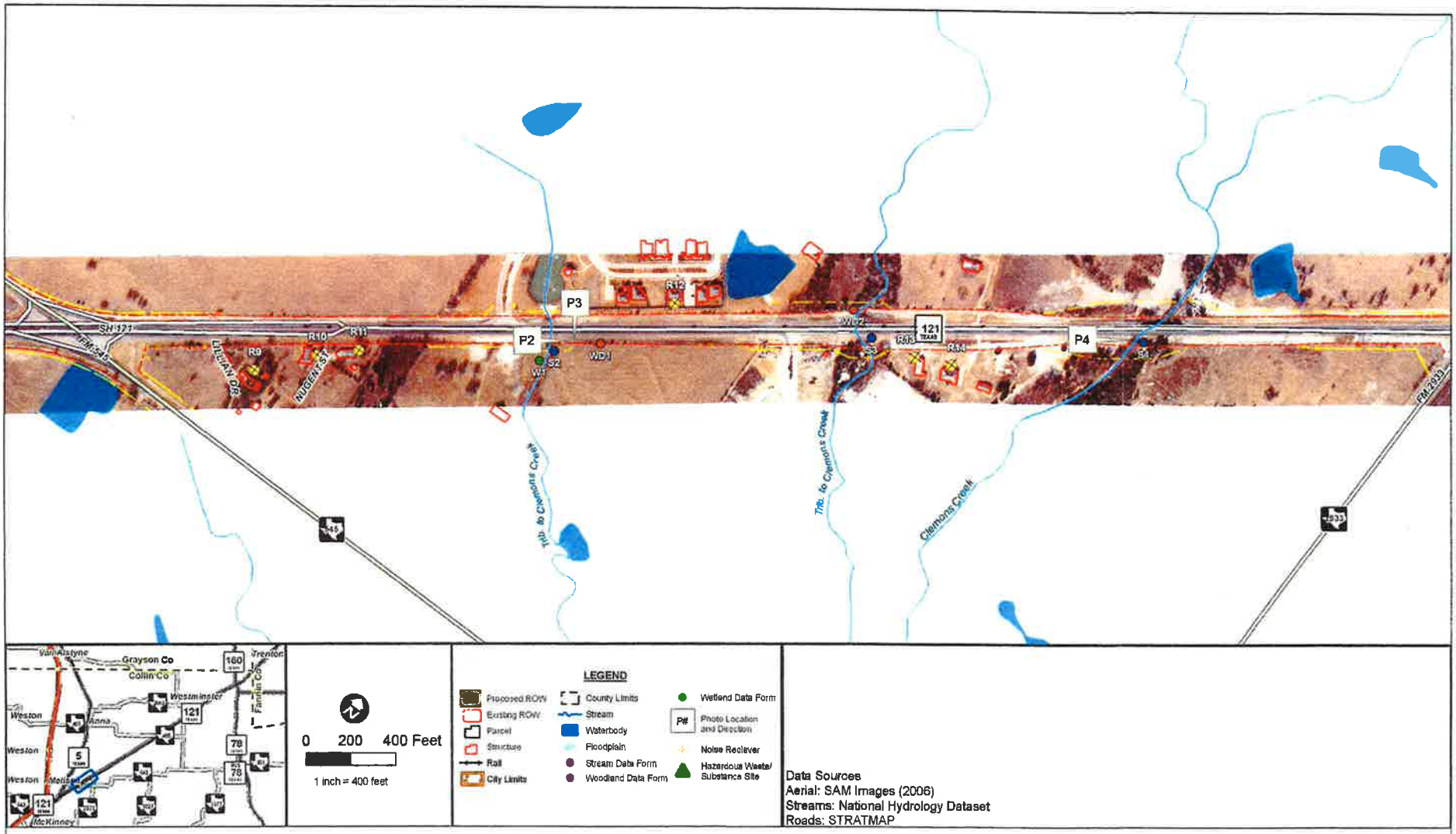

Figure 3c
Aerial and Photo Location Map 3 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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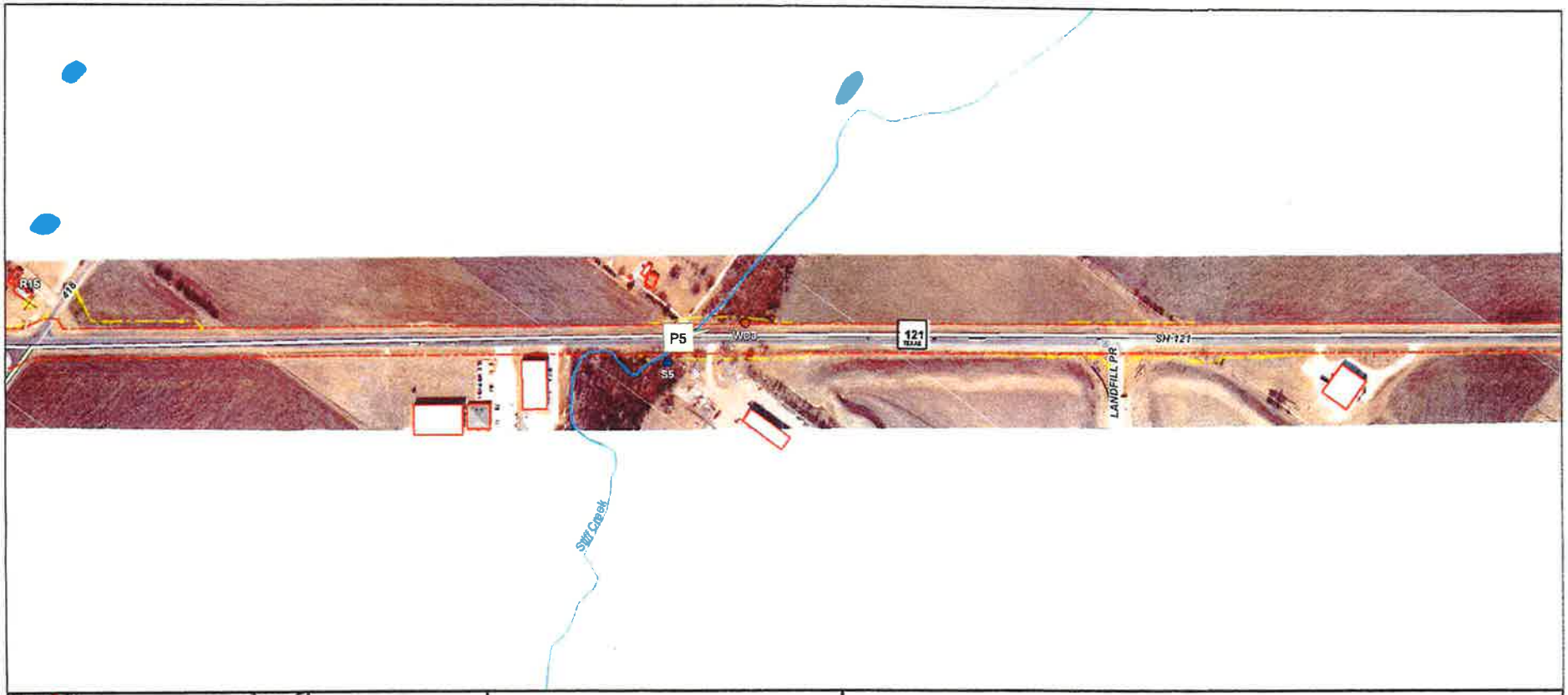

0 200 400 Feet

1 inch = 400 feet

LEGEND

- Proposed ROW
- Existing ROW
- Parcel
- Structure
- Roll
- City Limits
- County Limits
- Stream
- Waterbody
- Floodplain
- Stream Data Form
- Woodland Data Form
- Wetland Data Form
- P# Photo Location and Direction
- Noise Reciever
- Hazardous Waste/ Substance Site

Data Sources
Aerial: SAM Images (2006)
Streams: National Hydrology Dataset
Roads: STRATMAP

Figure 3d
Aerial and Photo Location Map 4 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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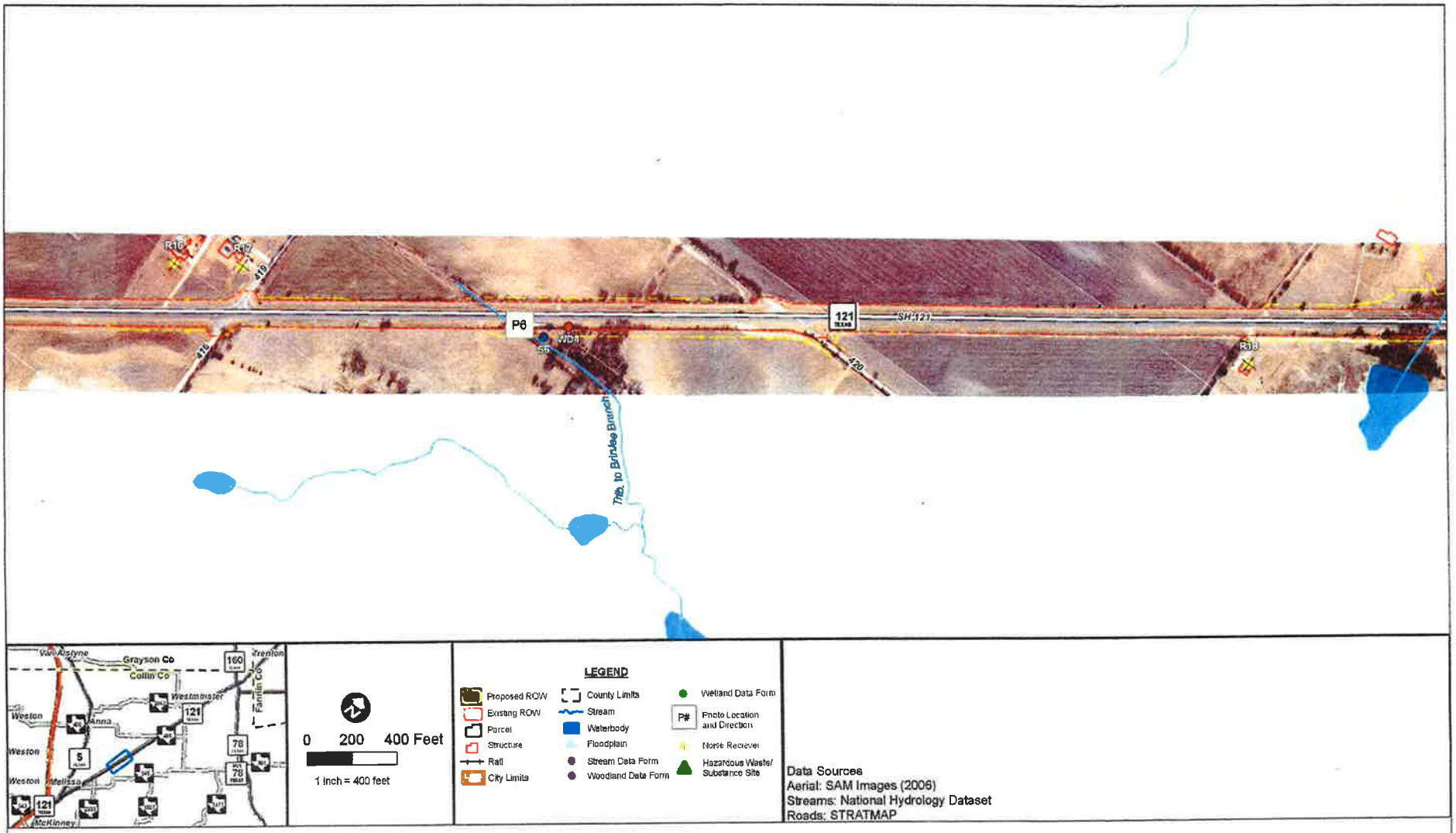

Figure 3e
Aerial and Photo Location Map 5 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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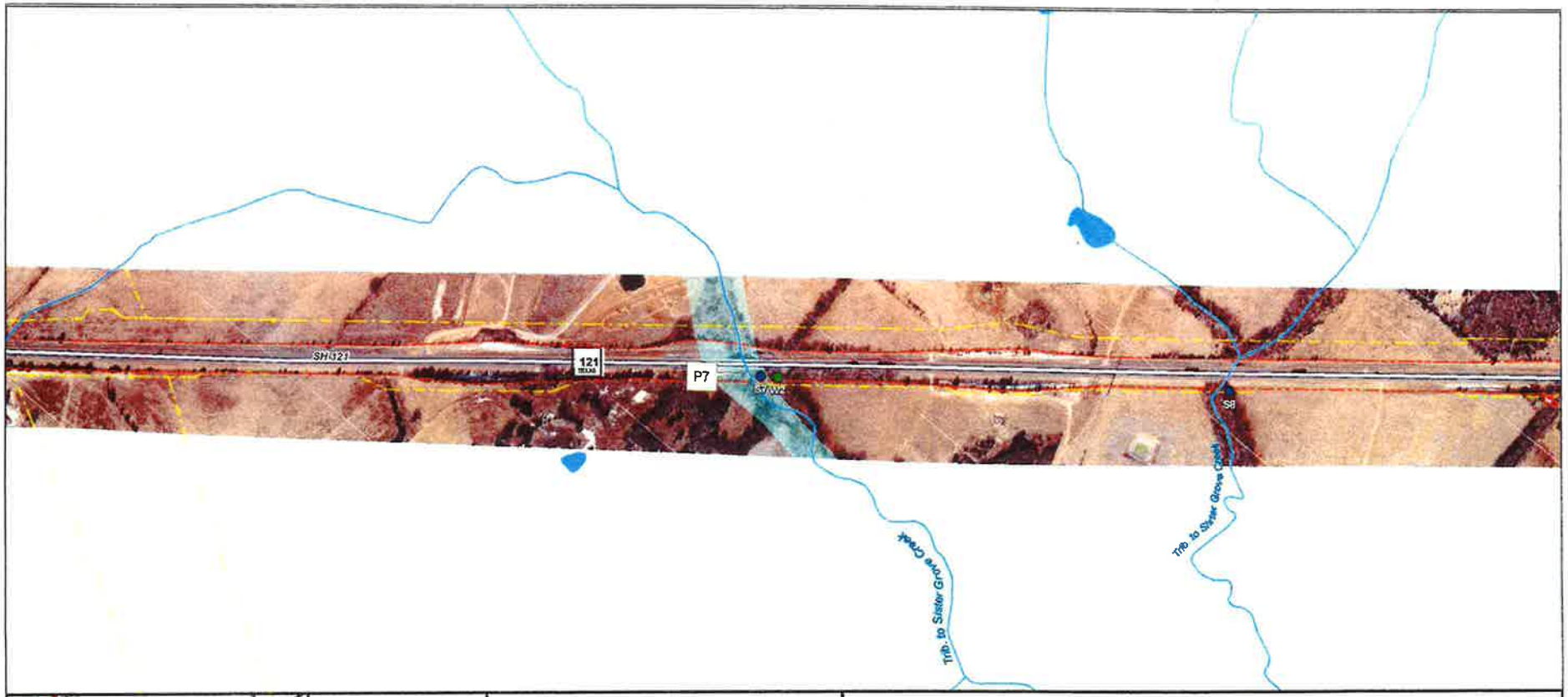

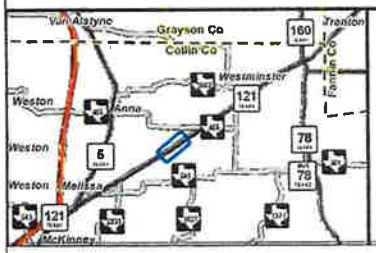

0 200 400 Feet

1 inch = 400 feet

LEGEND

- Proposed ROW
- Existing ROW
- Parcel
- Structure
- Rail
- City Limits
- County Limits
- Stream
- Waterbody
- Floodplain
- Stream Data Form
- Woodland Data Form
- Wetland Data Form
- P# Photo Location and Direction
- Noise Receiver
- Hazardous Waste/ Substance Site

Data Sources
Aerial: SAM Images (2006)
Streams: National Hydrology Dataset
Roads: STRATMAP

Figure 3f
Aerial and Photo Location Map 6 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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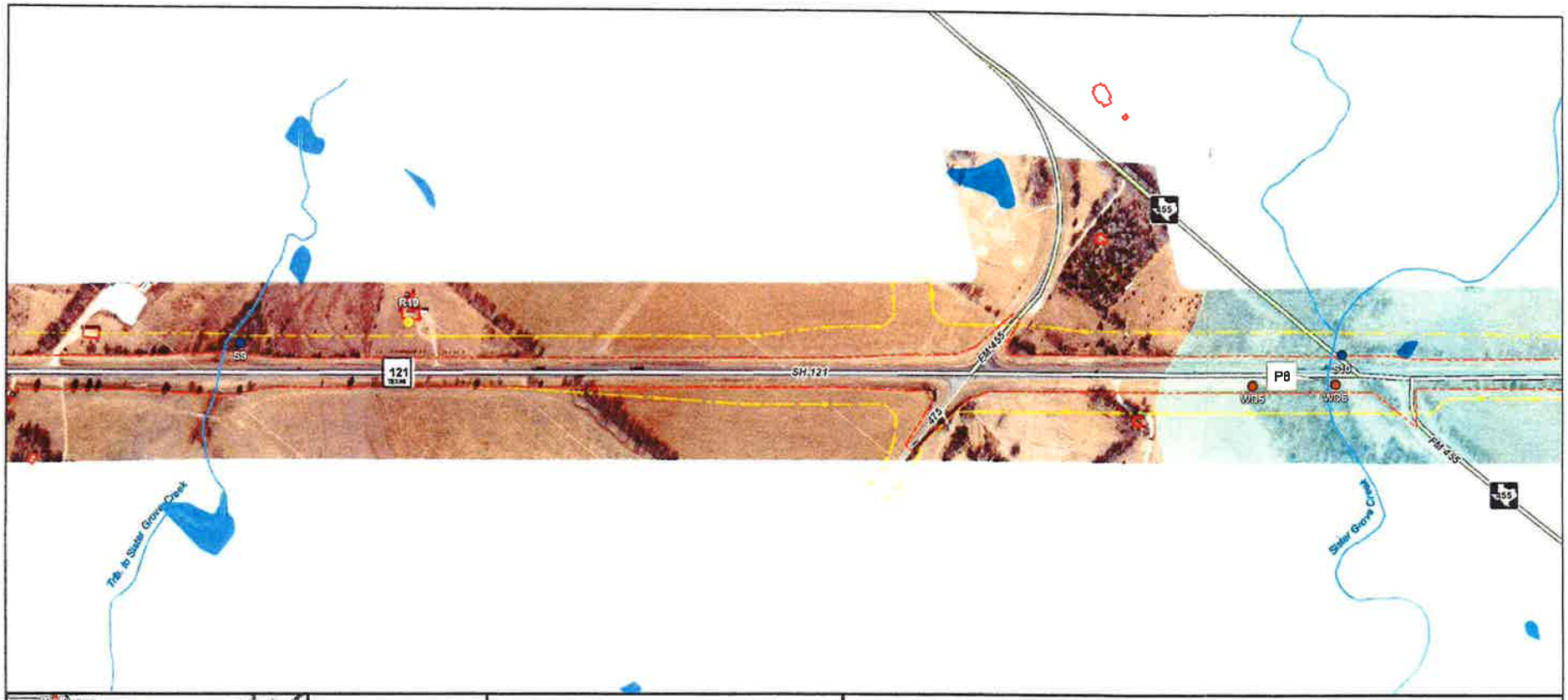

Figure 3g
Aerial and Photo Location Map 7 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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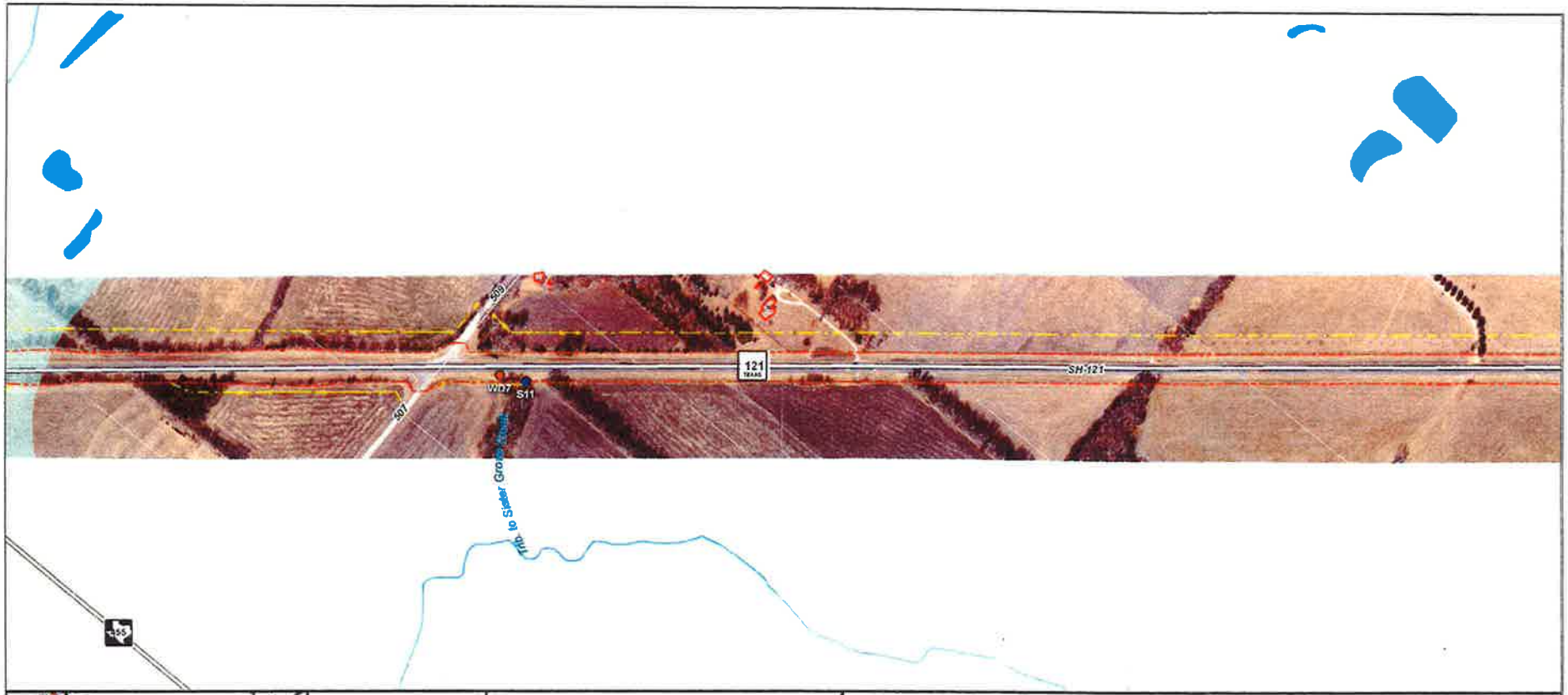

Figure 3h
Aerial and Photo Location Map 8 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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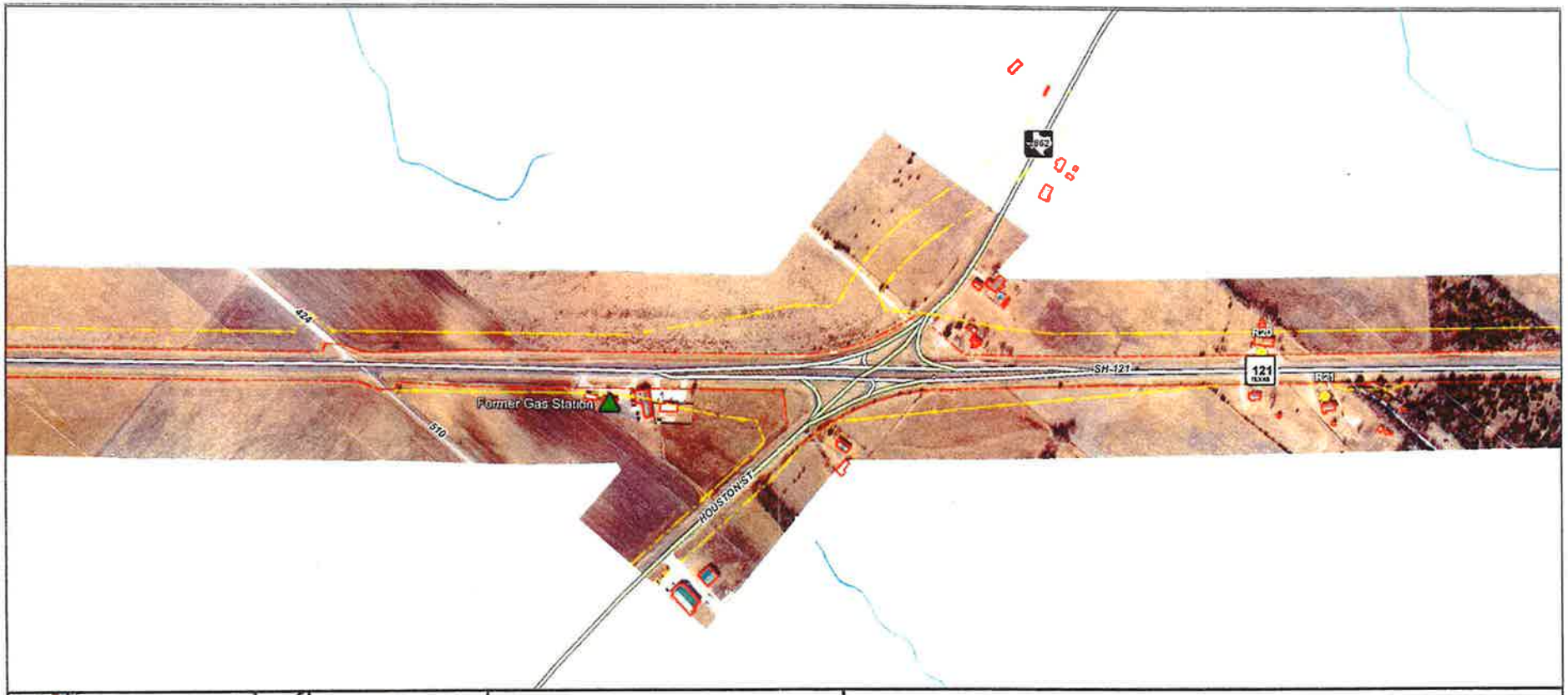

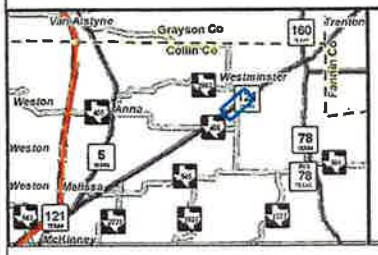

0 200 400 Feet

1 inch = 400 feet

LEGEND

- Proposed ROW
- Existing ROW
- Parcel
- Structure
- Rail
- City Limits
- County Limits
- Stream
- Waterbody
- Floodplain
- Stream Data Form
- Woodland Data Form
- Wetland Data Form
- Photo Location and Direction
- Noise Reciever
- Hazardous Waste/ Substance Site

Data Sources
Aerial: SAM Images (2006)
Streams: National Hydrology Dataset
Roads: STRATMAP

Figure 3i
Aerial and Photo Location Map 9 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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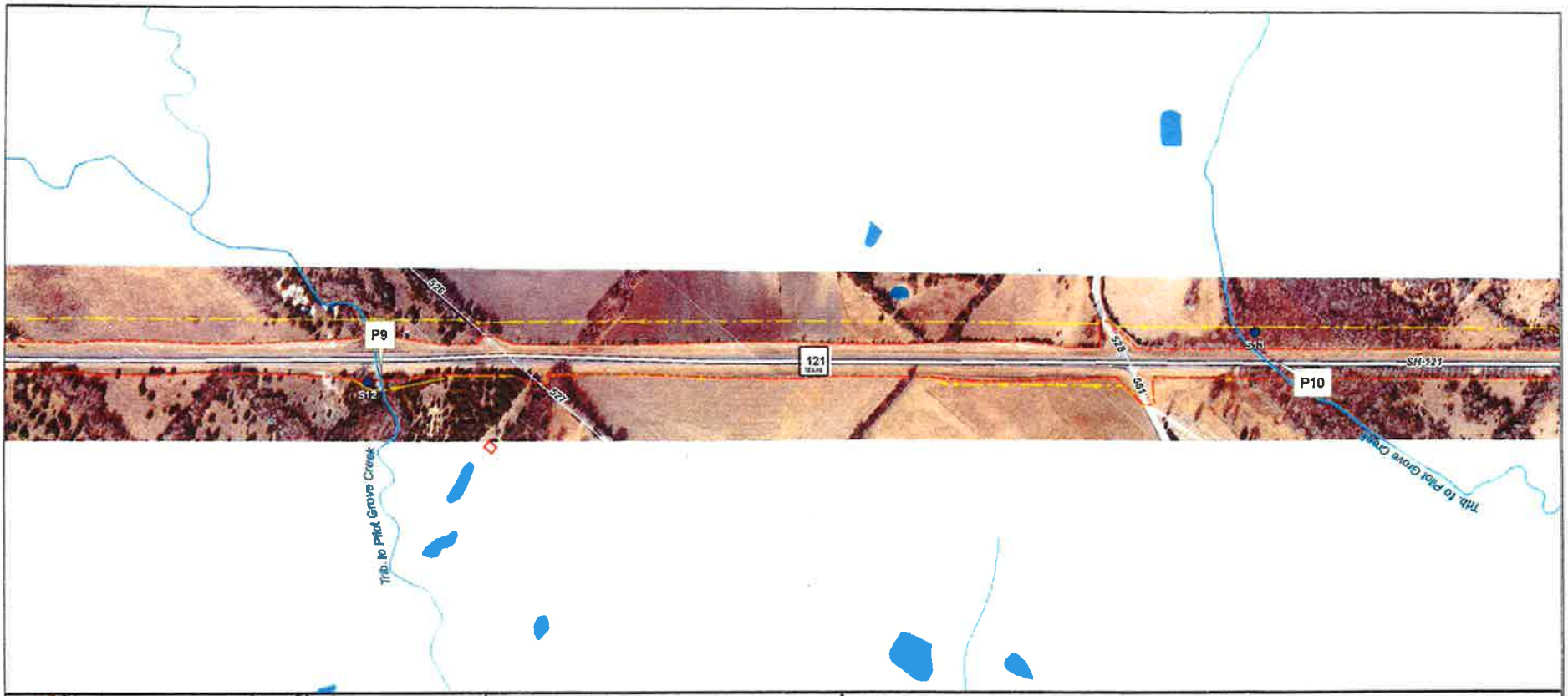

Figure 3j
Aerial and Photo Location Map 10 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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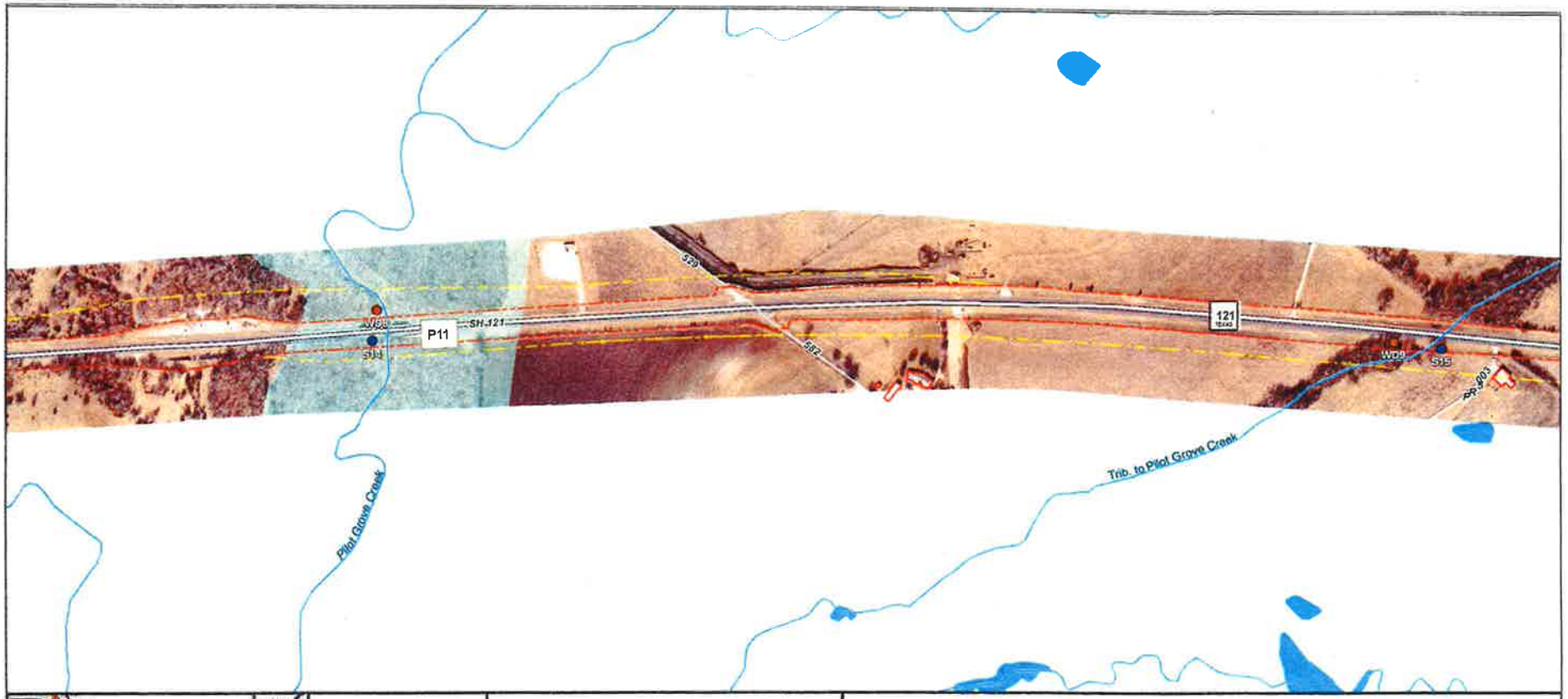

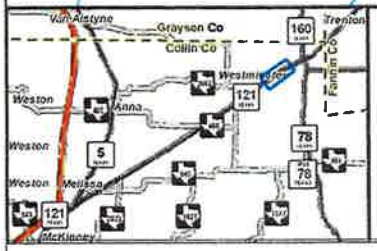

0 200 400 Feet

1 inch = 400 feet

LEGEND

- Proposed ROW
- Existing ROW
- Parcel
- Structure
- Rail
- City Limits
- County Limits
- Stream
- Waterbody
- Floodplain
- Stream Data Form
- Woodland Data Form
- Wetland Data Form
- P# Photo Location and Direction
- Noise Receiver
- Hazardous Waste/ Substance Site

Data Sources
Aerial: SAM Images (2006)
Streams: National Hydrology Dataset
Roads: STRATMAP

Figure 3k
Aerial and Photo Location Map 11 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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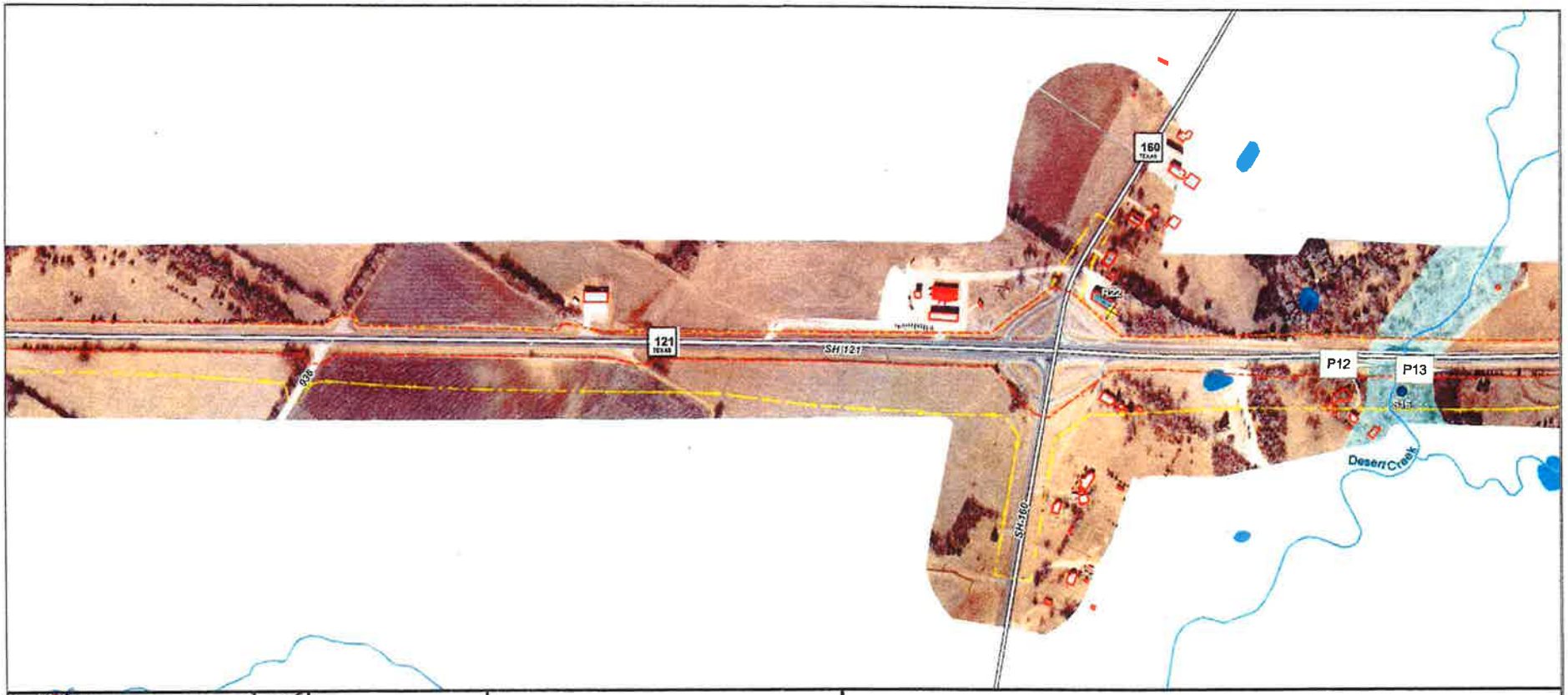

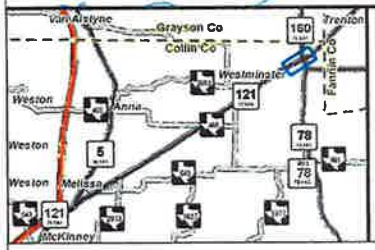

0 200 400 Feet

1 inch = 400 feet

LEGEND

- Proposed ROW
- Existing ROW
- Parcel
- Structure
- Rail
- City Limits
- County Limits
- Stream
- Waterbody
- Floodplain
- Stream Data Form
- Woodland Data Form
- Wetland Data Form
- P# Photo Location and Direction
- Noise Receiver
- Hazardous Waste/ Substance Site

Data Sources
Aerial: SAM Images (2006)
Streams: National Hydrology Dataset
Roads: STRATMAP

Figure 3l
Aerial and Photo Location Map 12 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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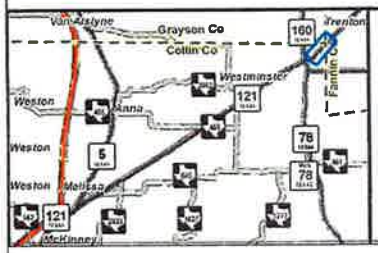

0 200 400 Feet

1 inch = 400 feet

LEGEND

- Proposed ROW
- Existing ROW
- Parcel
- Structure
- Rail
- City Limits
- County Limits
- Stream
- Waterbody
- Floodplain
- Stream Data Form
- Woodland Data Form
- Wetland Data Form
- PI — Photo Location and Direction
- Noise Receiver
- Hazardous Waste/ Substance Site

Data Sources
Aerial: SAM Images (2006)
Streams: National Hydrology Dataset
Roads: STRATMAP

Figure 3m
Aerial and Photo Location Map 13 of 13

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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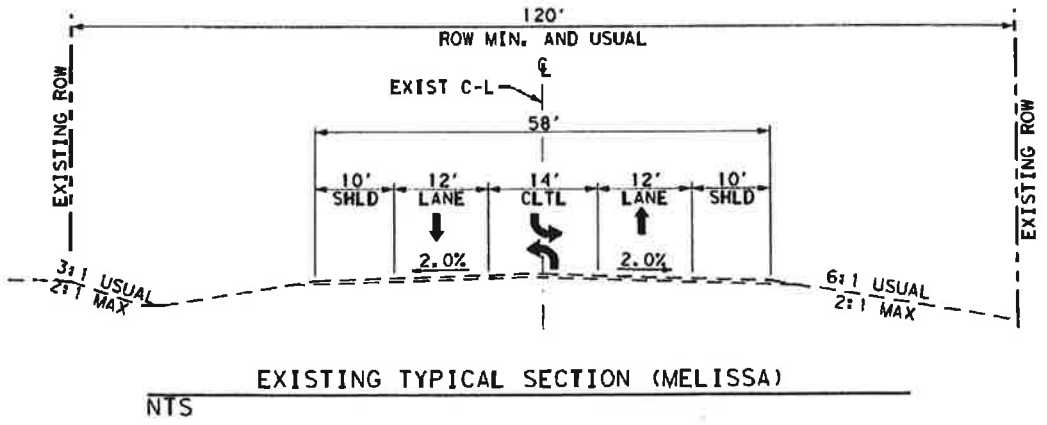
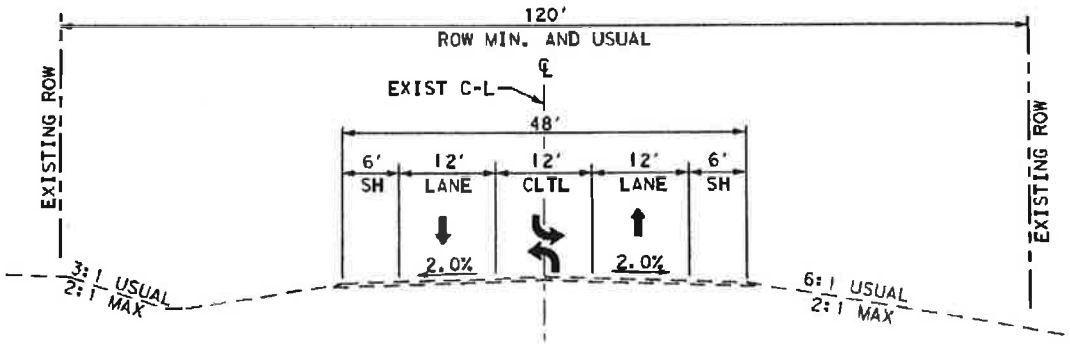


EXISTING TYPICAL SECTION (MELISSA)

NTS

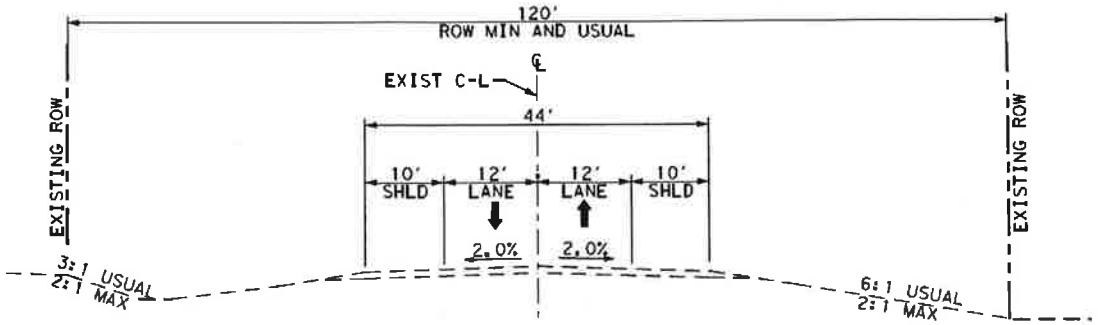


EXISTING TYPICAL SECTION (MELISSA)

NTS

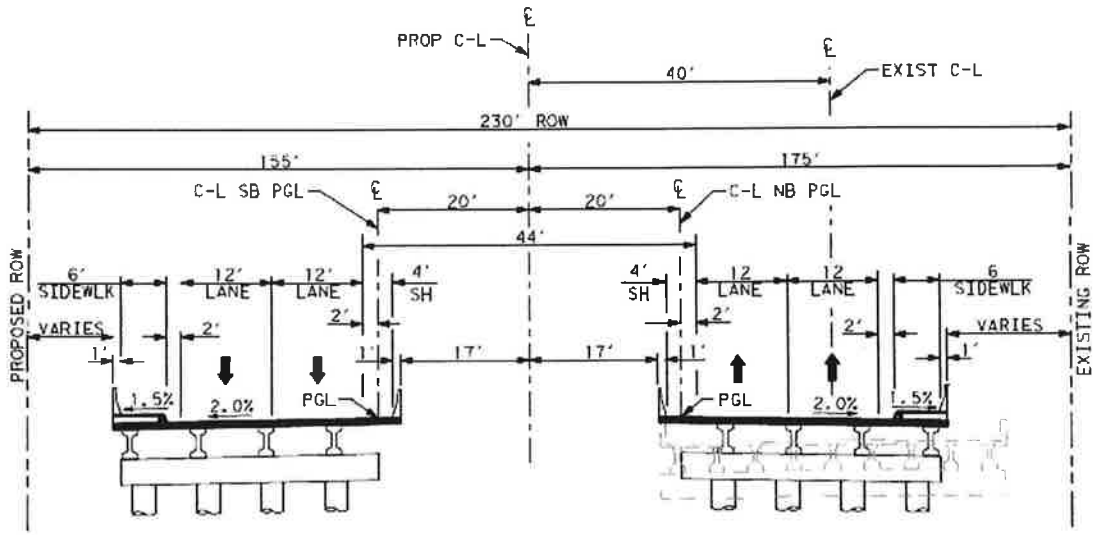
Figure 4a
Typical Sections 1 of 3

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021



EXISTING TYPICAL SECTION (ANNA)

NTS

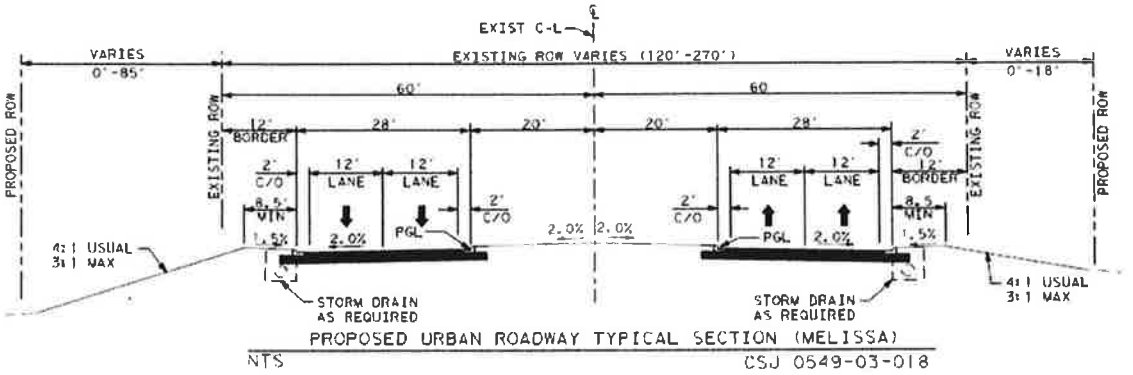


PROPOSED URBAN BRIDGE TYPICAL SECTION AT DART R.R.

NTS CSJ 0549-03-018

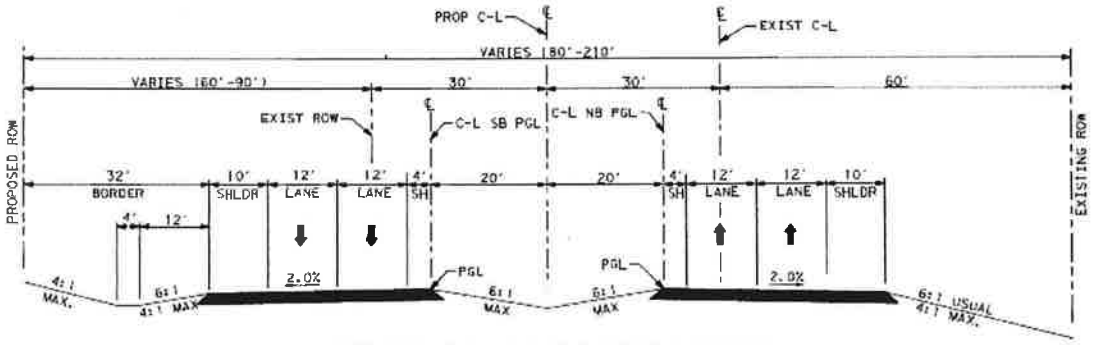
Figure 4b
Typical Sections 2 of 3

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021



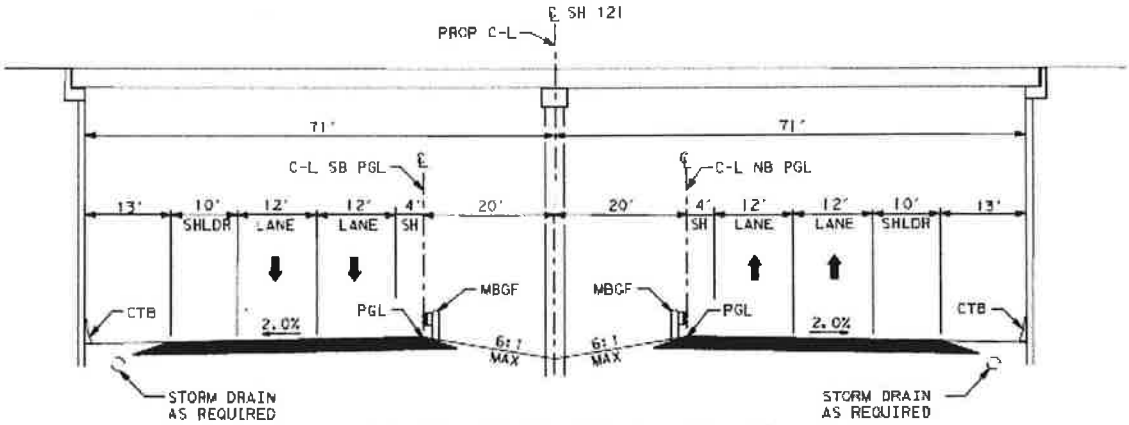
PROPOSED URBAN ROADWAY TYPICAL SECTION (MELISSA)

NTS CSJ 0549-03-018



PROPOSED RURAL ROADWAY TYPICAL SECTION

NTS CSJ 0549-03-018



PROPOSED SH 121 TYPICAL SECTION

NTS CSJ 0549-03-018

AT FM 455 / CR 475 UNDERPASS

(RURAL)

Figure 4c
Typical Sections 3 of 3

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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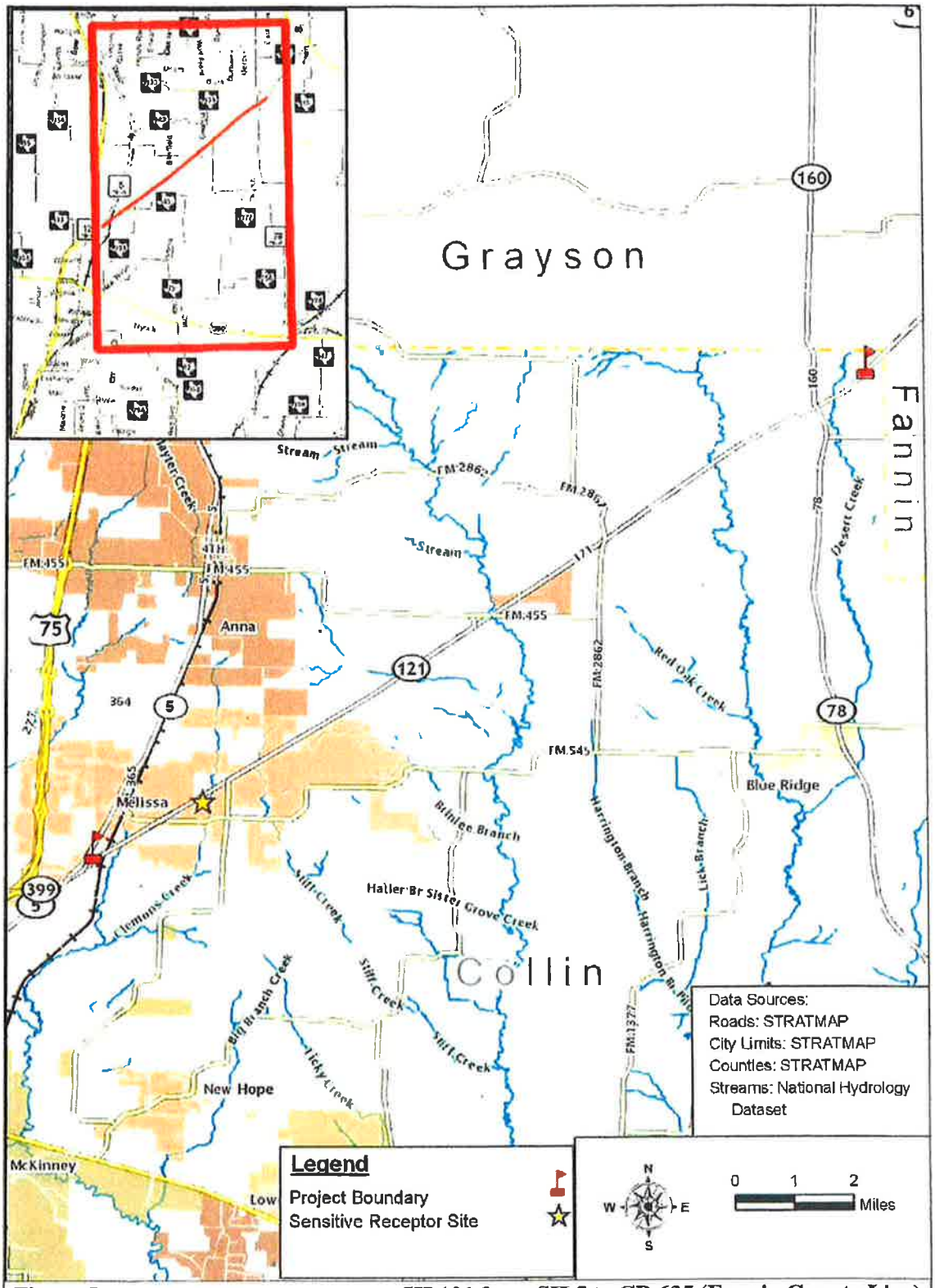

Figure 5
Sensitive Receptor Map

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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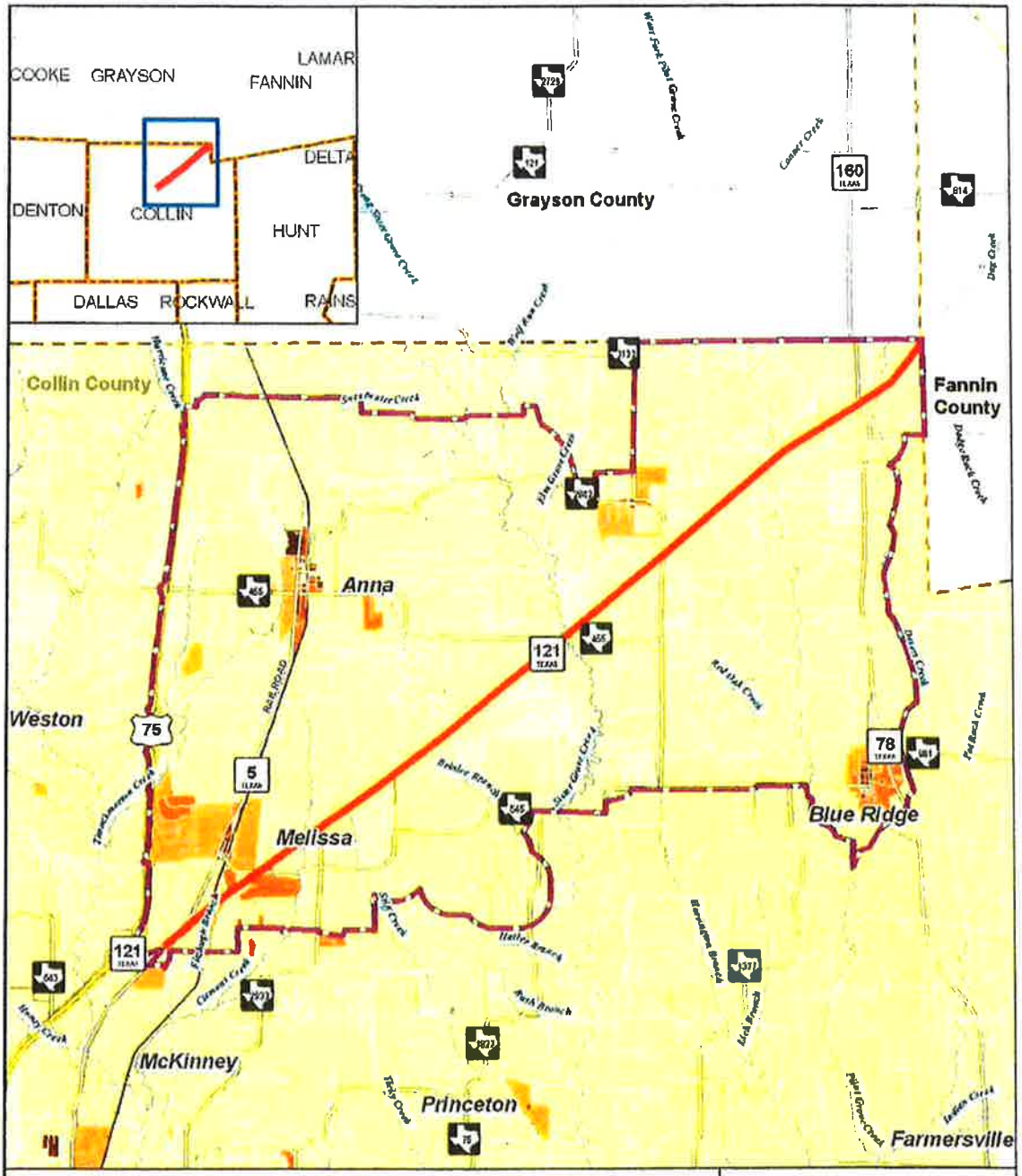

Figure 6
Indirect Impacts AOI

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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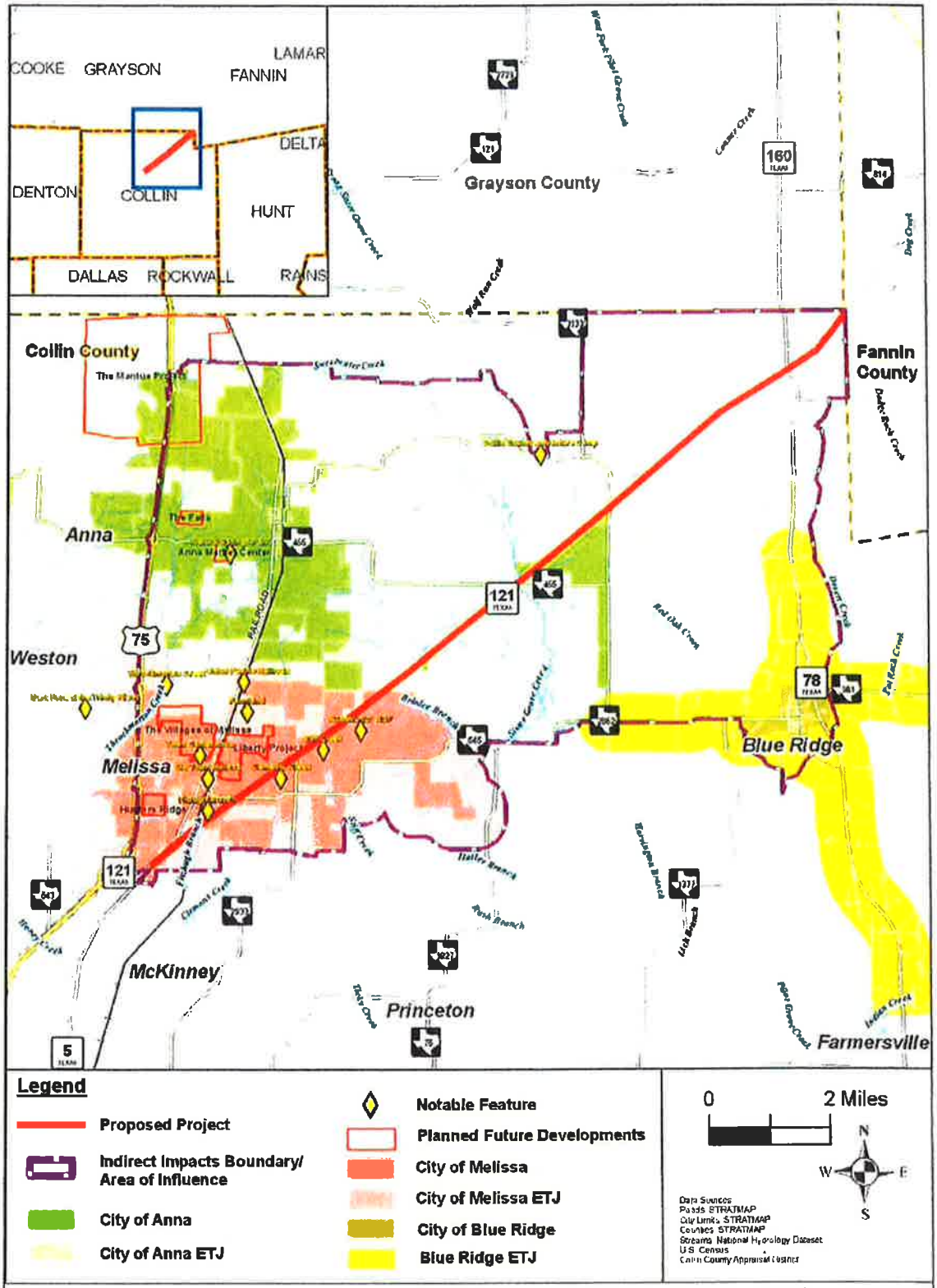

Figure 7
City Limits and ETJ Within the Indirect Impacts AOI

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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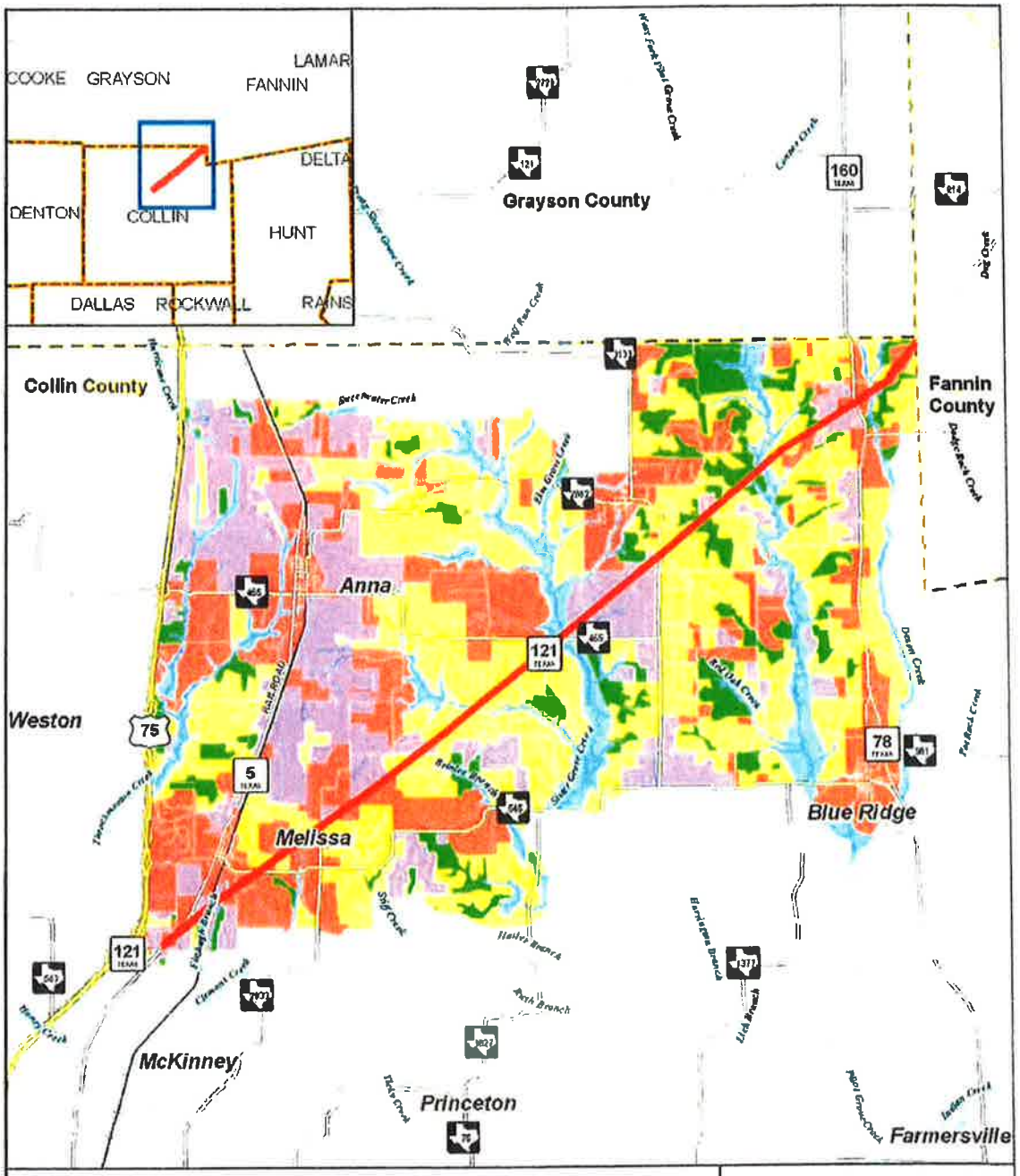

Figure 8
Land Use Within the Indirect Impacts AOI

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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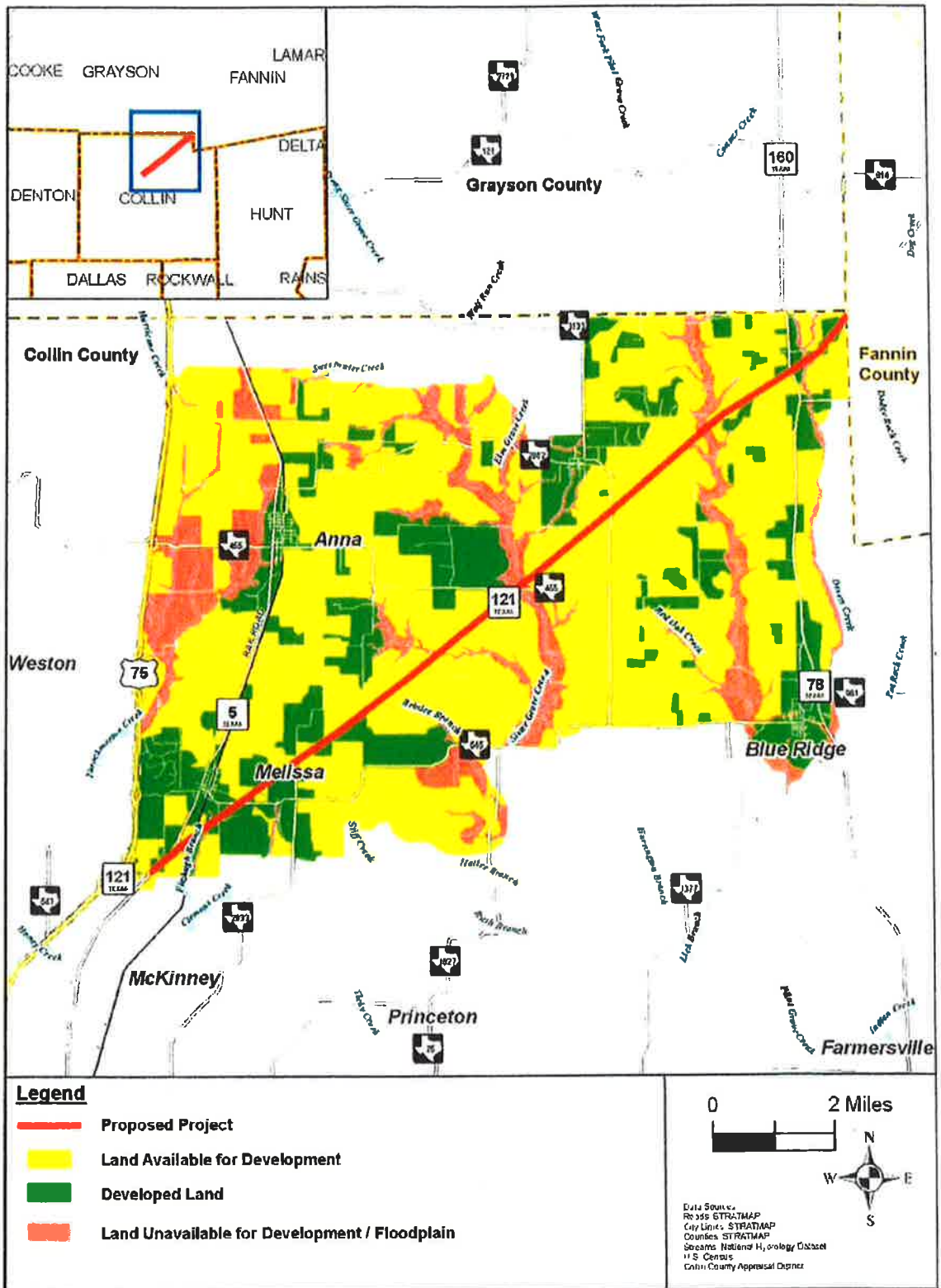

Figure 9
Land Development Within the Indirect Impacts AOI

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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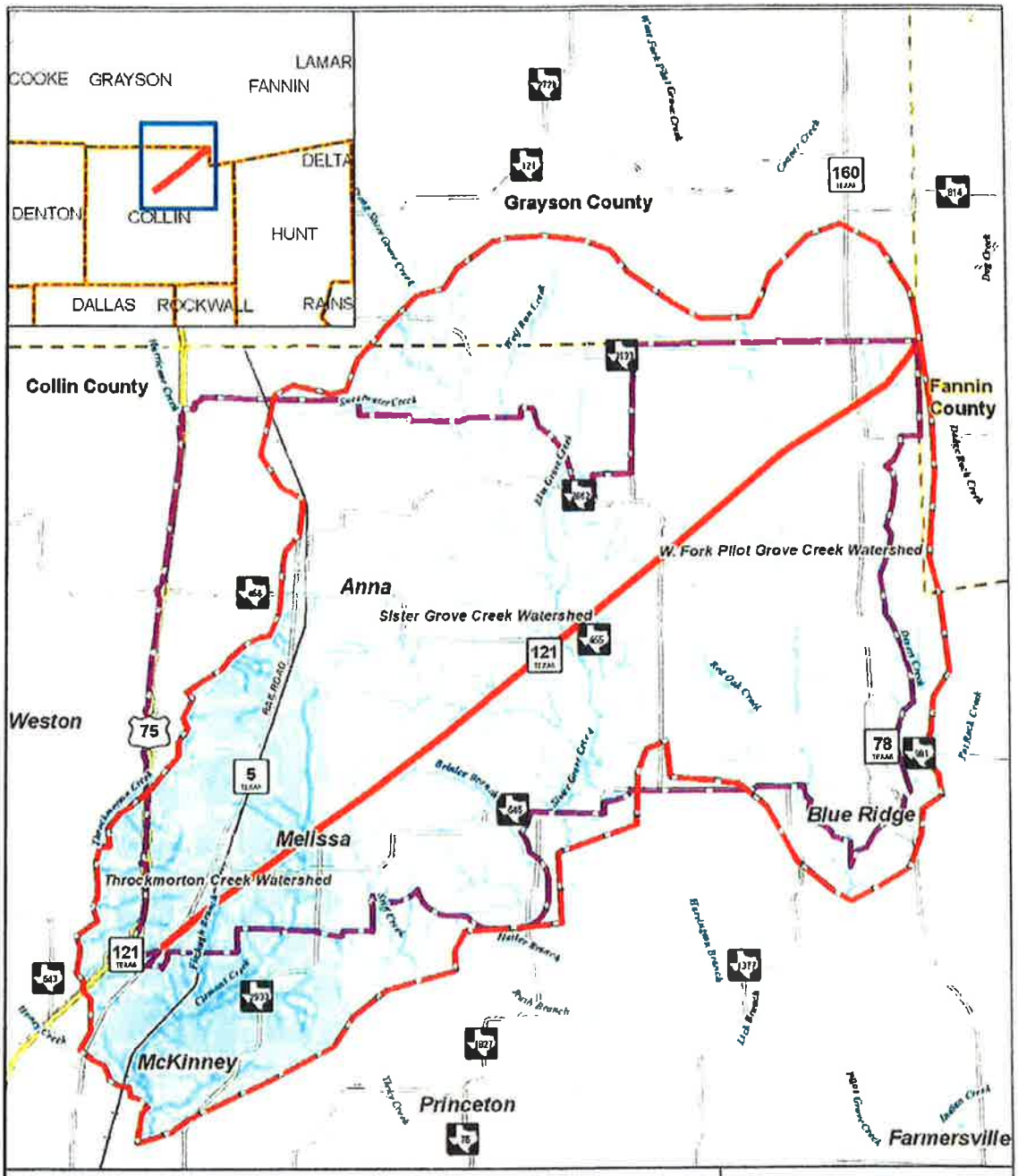

Figure 10
Cumulative Impacts RSAs

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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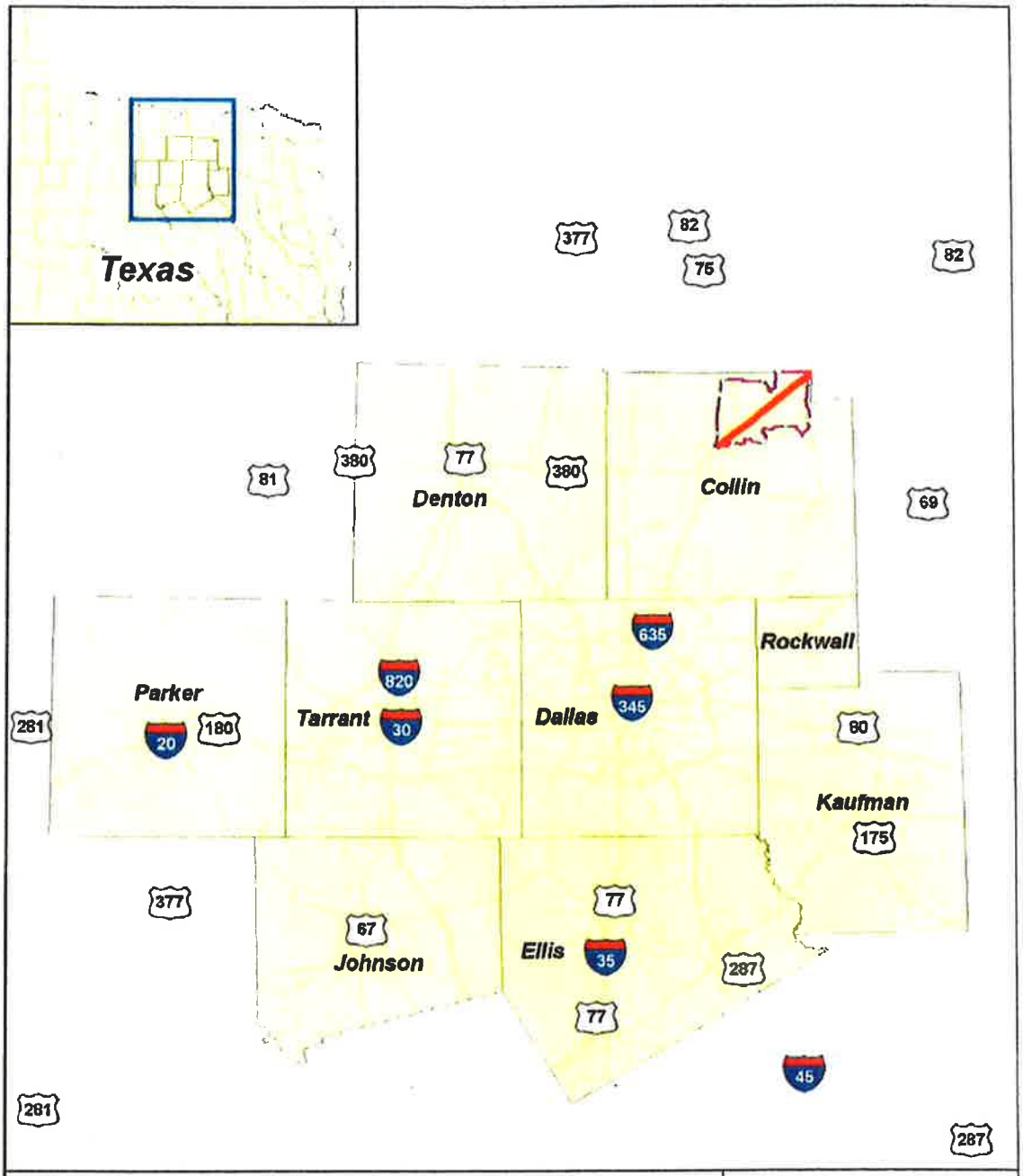

Legend

- Land Use RSA
- Direct Project Area
- 9-County RSA for Air Quality

0 15 Miles

N W E S

Data Sources:
Roads: STRATMAP
City Limits: STRATMAP
Counties: STRATMAP
Streams: National Hydrology Dataset
U.S. Census
Collin County Appraisal District

Figure 11
Cumulative Impacts RSAs – 9-County Ozone Non Attainment Area

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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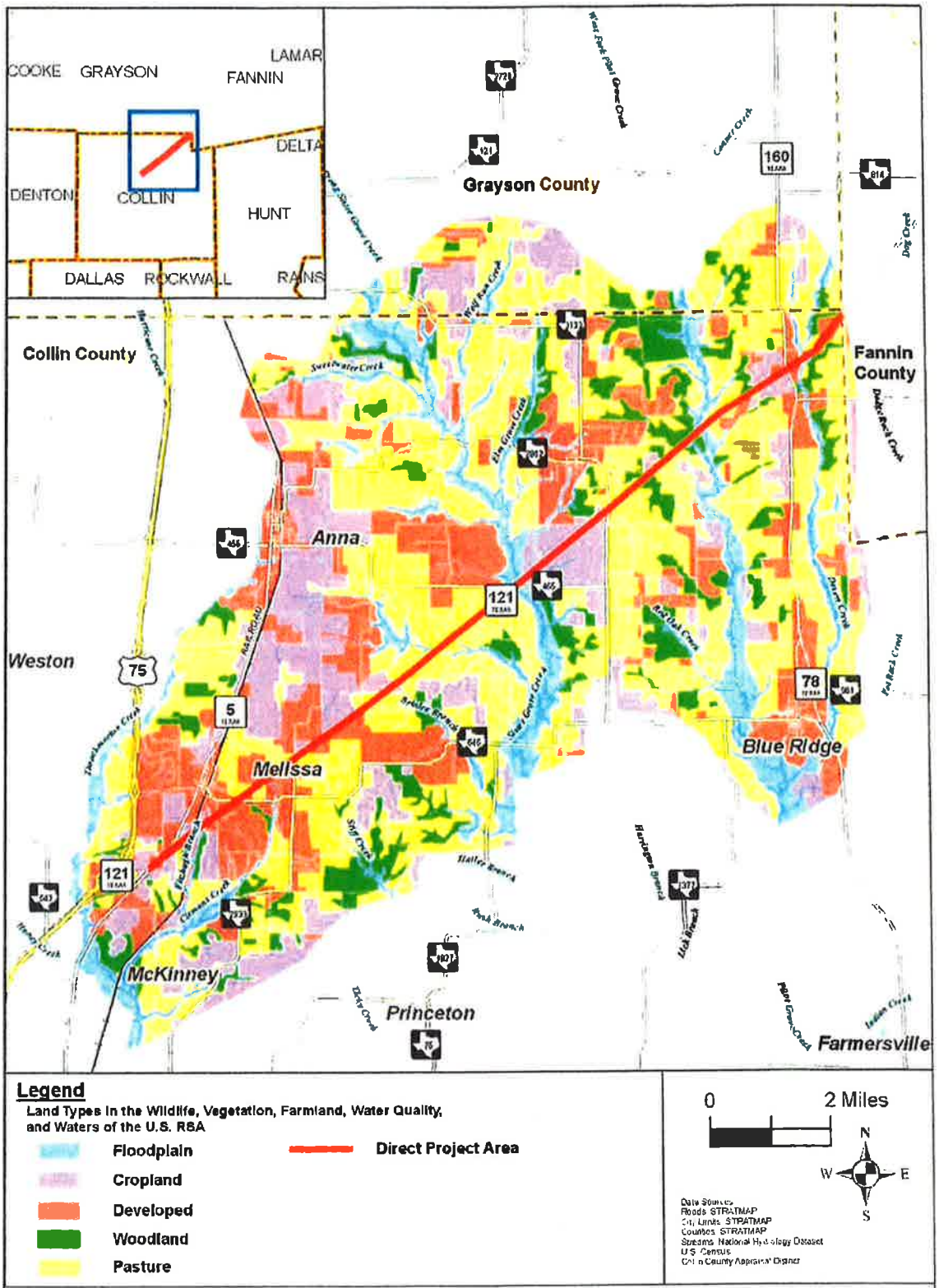

Figure 12
Land Use Within the Cumulative Impacts RSA

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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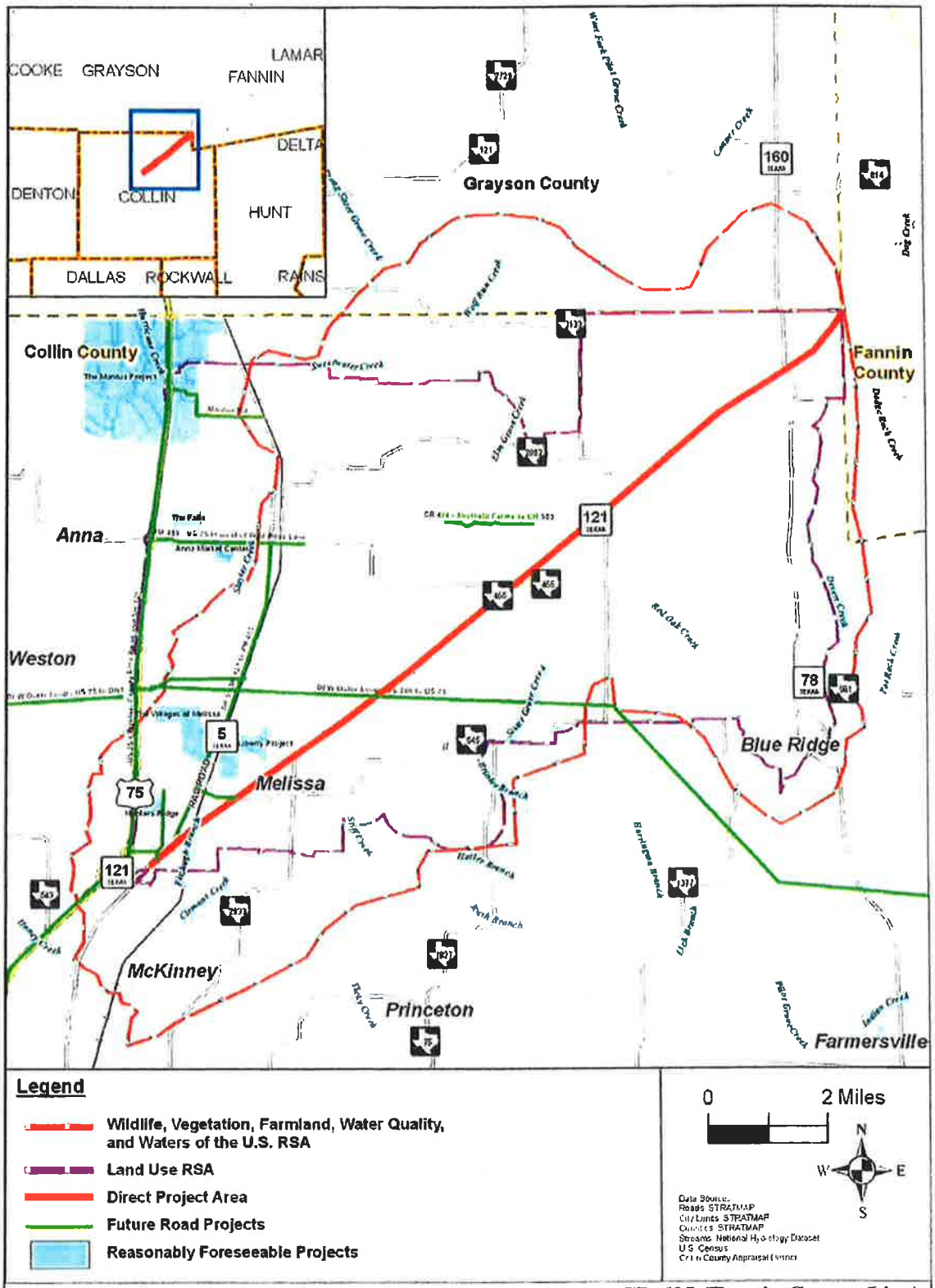

Figure 13
Reasonably Foreseeable Projects Within the Cumulative Impacts RSAs

SH 121 from SH 5 to CR 635 (Fannin County Line)
CSJ: 0549-03-018, 0549-03-021

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Photo 1: Fitzhugh Branch, south of SH 121, facing south.

Photo 2: Typical ROW south of SH 121, facing east.

Figure 14a
Project Photographs 1 of 7

SH 121 from SH 5 to Fannin County Line
CSJ: 0549-03-018

Photo 3: Adjacent land use south of SH 121, facing south.

Photo 4: Clemons Creek south of SH121, facing east.

Figure 14b
Project Photographs 2 of 7

SH 121 from SH 5 to Fannin County Line
CSJ: 0549-03-018

Photo 5: Upland wooded area north of SH 121, facing north.

Photo 6: Typical ROW with fence line vegetation south of SH 121, facing east.

Figure 14c
Project Photographs 3 of 7

SH 121 from SH 5 to Fannin County Line
CSJ: 0549-03-018

Photo 7: Tributary to Sister Grove south of SH 121, facing east.

Photo 8: Sister Grove Creek south of SH 121, facing east.

Figure 14d
Project Photographs 4 of 7

SH 121 from SH 5 to Fannin County Line
CSJ: 0549-03-018

Photo 9: Tributary to Pilot Grove south of SH 121, facing south.

Photo 10: Tributary to Pilot Grove north of SH 121, facing west.

Figure 14e
Project Photographs 5 of 7

SH 121 from SH 5 to Fannin County Line
CSJ: 0549-03-018

Photo 11: Pilot Grove Creek south of SH 121, facing west.

Photo 12: Desert Creek south of SH 121, facing east.

Figure 14f
Project Photographs 6 of 7

SH 121 from SH 5 to Fannin County Line
CSJ: 0549-03-018

Photo 13: Typical ROW south of SH 121, facing east.

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Appendix A

Stream Data Forms

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Stream Data Form #: 1
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS
Date of Field Work: 06/18/2009
USGS Stream Name: Fitzhugh Branch
County/State: Collin

Stream Type: Ephemeral (Intermittent) Perennial

Stream Flow Direction: South
OHWM Width (ft): 6 ft inside ROW; 4 ft outside ROW
OHWM Height (in): 6"-12" inside ROW; 6" outside ROW

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): bedrock

Water Quality:

(Clear) Slightly Turbid Turbid Very Turbid

Color of water if other than clear:

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

(Overhanging trees/shrubs) Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

Black willow, aster, sugarberry, red oak saplings, honey locust, greenbriar, Texas red oak, American elm, poison ivy

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

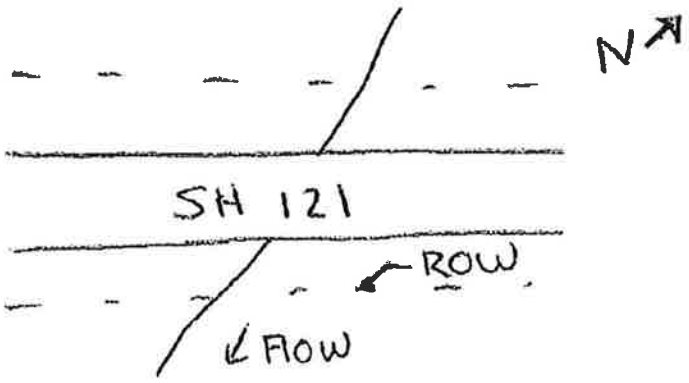
n/a

Stream Data Form (continued)

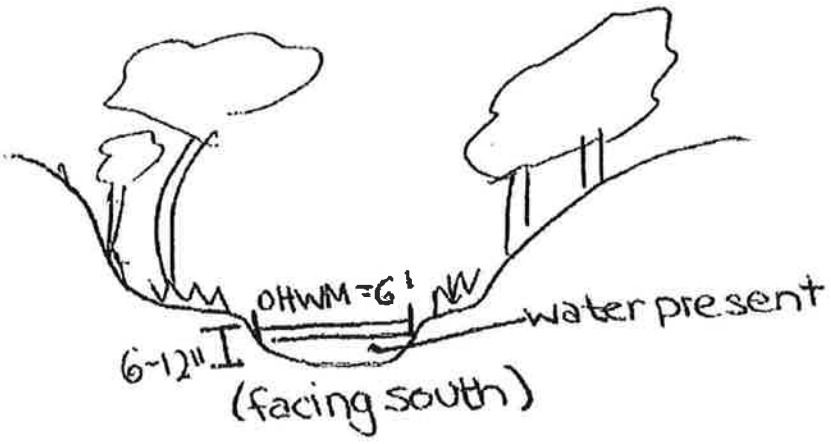
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 2
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS Date of Field Work: 06/18/2009
USGS Stream Name: Trib to Clemons Creek County/State: Collin

Stream Type: Ephemeral (Intermittent) Perennial

Stream Flow Direction: South

OHWM Width (ft): Pools at culvert and narrows to 4 ft outside of ROW; Pool is 30 ft at widest point (averages to 15' OHWM)

OHWM Height (in): 2 ft at pool and 6-8 inches outside ROW

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): Gravel and silt

Water Quality:

Clear (Slightly Turbid) Turbid Very Turbid

Color of water if other than clear: Greenish brown

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

Overhanging trees/shrubs Deep pool/hole/channel (Aquatic vegetation)

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Small fish

Riparian Vegetation: List species observed.

Broadleaf cattail, Bermuda grass, Johnson grass, rice cut grass, curly dock, bushy bluestem

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

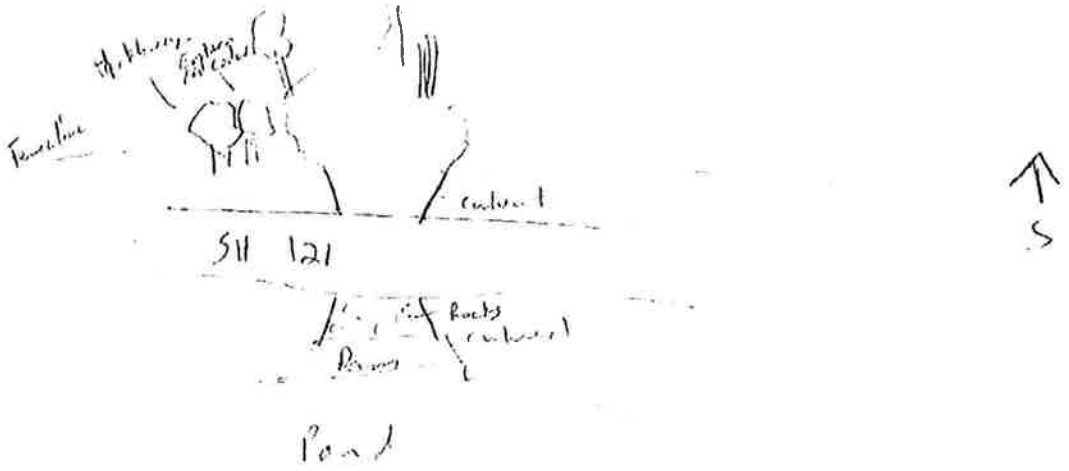
N/A

Stream Data Form (continued)

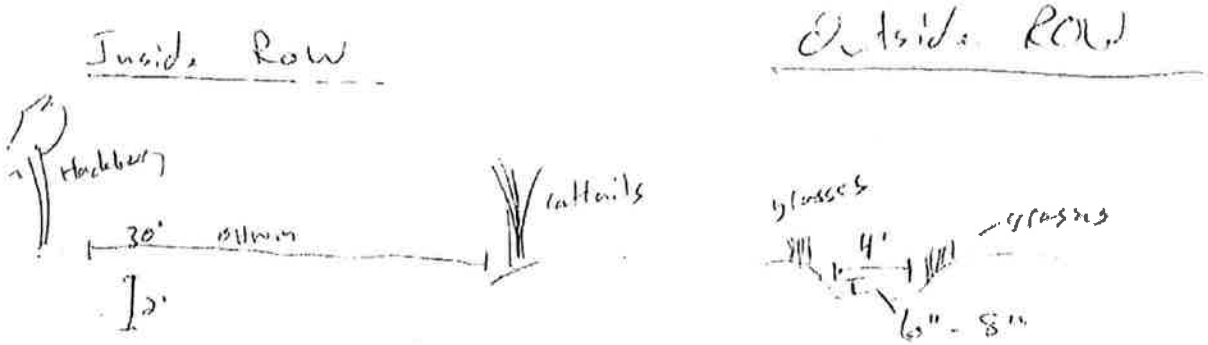
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 3
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS
Date of Field Work: 06/18/2009
USGS Stream Name: Trib to Clemons Creek
County/State: Collin

Stream Type: Ephemeral (Intermittent) Perennial

Stream Flow Direction: South
OHWM Width (ft): 10 ft inside ROW; 6 ft outside ROW
OHWM Height (in): 15

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): limestone

Water Quality:

(Clear) Slightly Turbid Turbid Very Turbid

Color of water if other than clear:

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

Overhanging trees/shrubs Deep pool/hole/channel (Aquatic vegetation)

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

black willow, cottonwood, eastern red cedar, sugarberry, Johnson grass, greenbriar, ragweed, Bermuda grass, Aster sp.

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

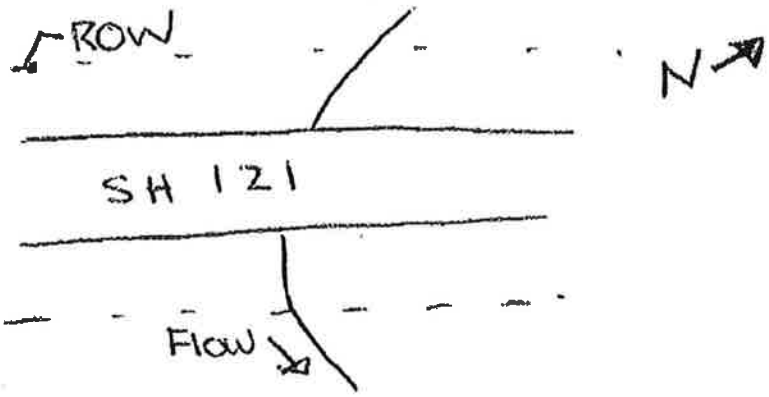
N/A

Stream Data Form (continued)

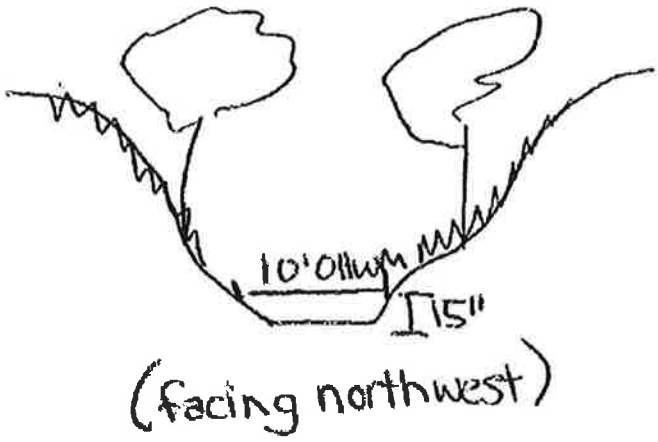
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 4
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS
Date of Field Work: 06/18/2009
USGS Stream Name: Clemons Creek
County/State: Collin

Stream Type: Ephemeral Intermittent (Perennial)

Stream Flow Direction: South
OHWM Width (ft): 20 ft inside ROW; 15 ft outside ROW
OHWM Height (in): 5

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): limestone

Water Quality:

(Clear) Slightly Turbid Turbid Very Turbid

Color of water if other than clear:

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

(Overhanging trees/shrubs) Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

Cedar elm, eastern red cedar, chinquapin oak, Johnson grass, Shumard oak, cottonwood, ragweed

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

N/A

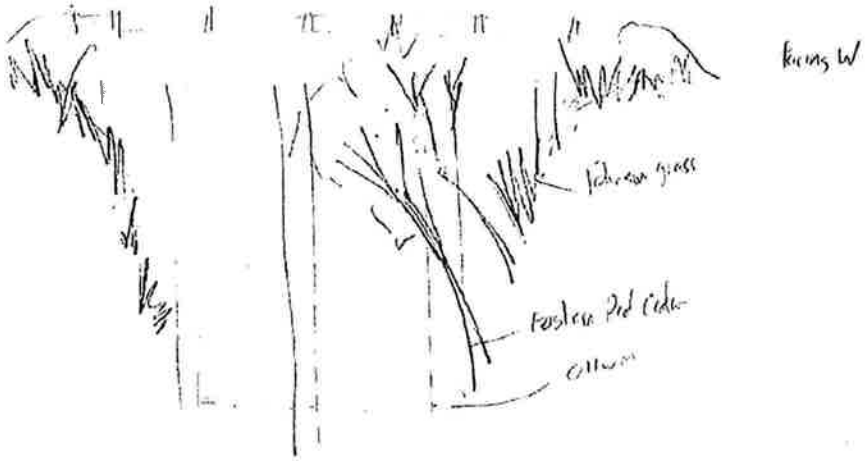
Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View

Section View



Stream Data Form #: 5
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS
Date of Field Work: 06/18/2009
USGS Stream Name: Stiff Creek
County/State: Collin

Stream Type: Ephemeral (Intermittent) Perennial

Stream Flow Direction: South
OHWM Width (ft): North – 8 ft inside ROW; 6 ft outside ROW; South – 6 ft inside ROW; 3 ft outside ROW
OHWM Height (in): 6 inches

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): Silt

Water Quality:

Clear (Slightly Turbid) Turbid Very Turbid

Color of water if other than clear: Brown

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

(Overhanging trees/shrubs) Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

minnows

Riparian Vegetation: List species observed.

Cedar elm, sugarberry, ragweed, Johnson grass, eastern red cedar, Bermuda grass
Note: South bank has been disturbed and riparian area has been cleared

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

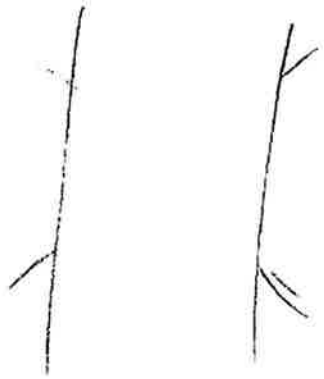
N/A

Stream Data Form (continued)

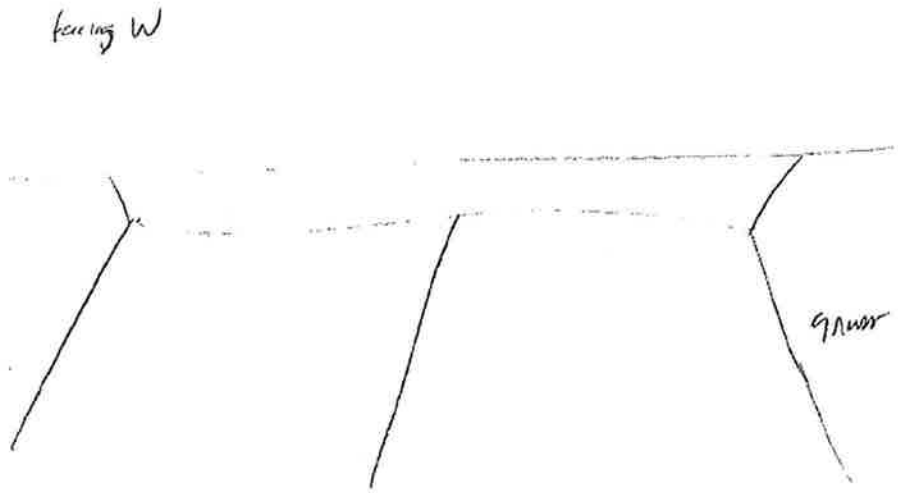
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 6
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS
Date of Field Work: 06/18/2009
USGS Stream Name: Trib to Brinlee Branch
County/State: Collin

Stream Type: (Ephemeral) Intermittent Perennial

Stream Flow Direction: South
OHWM Width (ft): 6 ft inside ROW; 2 ft outside ROW
OHWM Height (in): 2

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): limestone

Water Quality:

(Clear) Slightly Turbid Turbid Very Turbid

Color of water if other than clear:

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

(Overhanging trees/shrubs) Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

Sugarberry, black willow, American elm, greenbriar, Virginia wild rye, poison ivy, ragweed

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

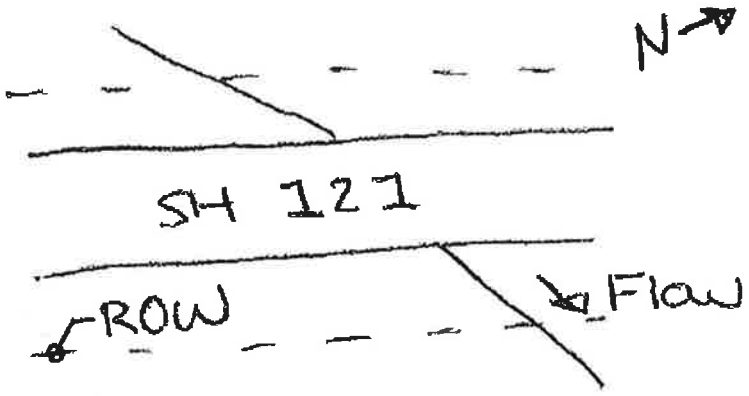
N/A

Stream Data Form (continued)

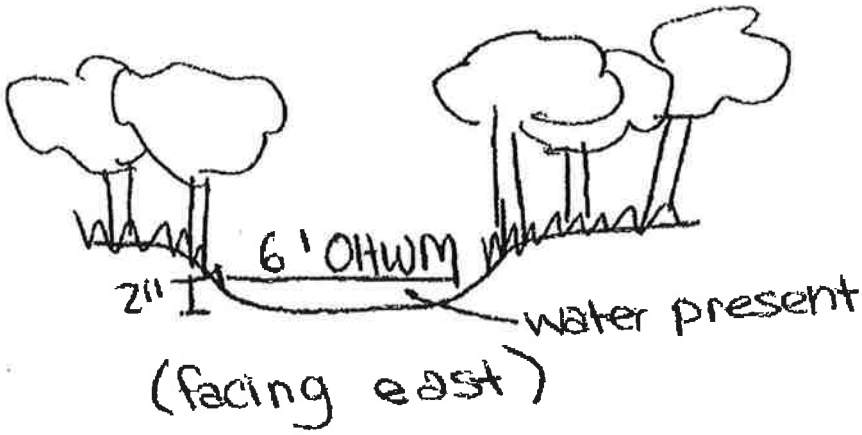
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 7
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS Date of Field Work: 06/18/2009

USGS Stream Name: Trib to Sister Grove Creek/Brinlee Branch County/State: Collin

Stream Type: Ephemeral Intermittent (Perennial)

Stream Flow Direction: South

OHWM Width (ft): 10 ft inside ROW; 8 ft outside ROW

OHWM Height (in): 4 inches

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): clay

Water Quality:

(Clear) Slightly Turbid Turbid Very Turbid

Color of water if other than clear:

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

(Overhanging trees/shrubs) Deep pool/hole/channel (Aquatic vegetation)

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

invertebrates

Riparian Vegetation: List species observed.

honey locust, black willow, ragweed, eastern red cedar, cedar elm, sugarberry, Johnson grass, greenbriar, poison ivy, curly dock, duckweed, longleaf pondweed, arrowhead, rice cutgrass

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

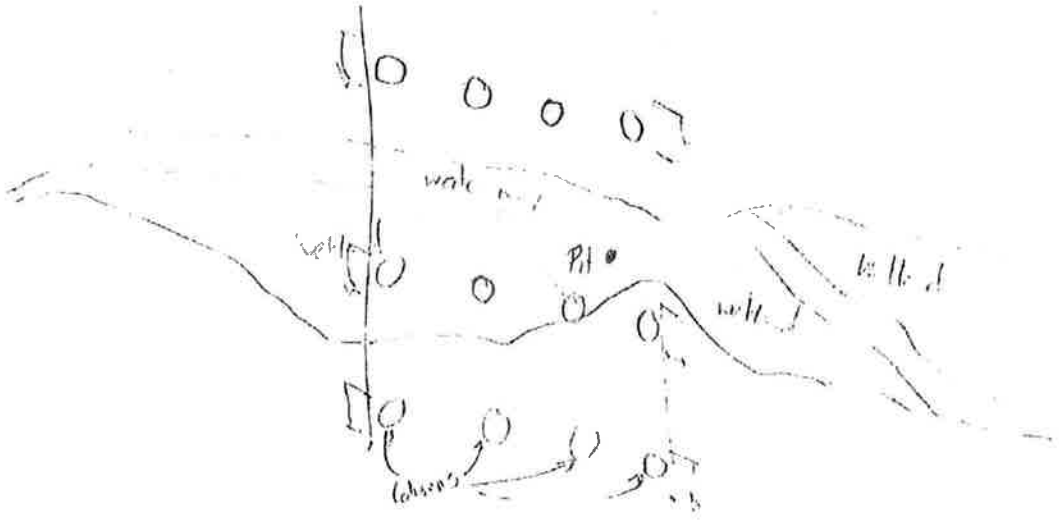
N/A

Stream Data Form (continued)

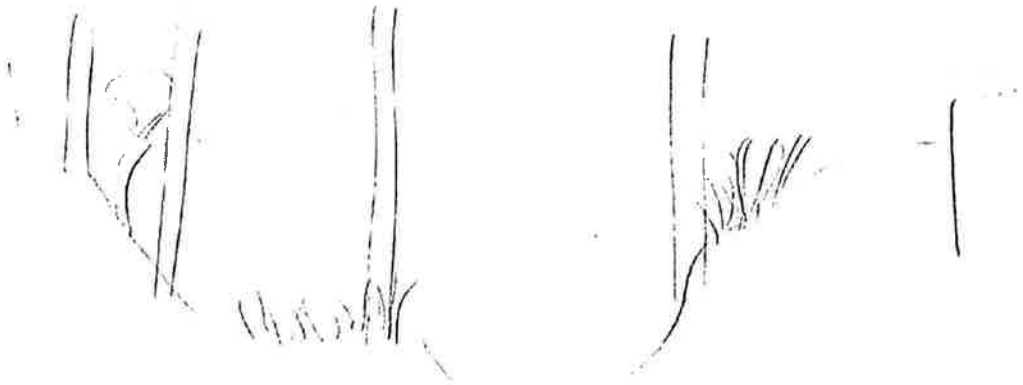
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 8
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS Date of Field Work: 06/18/2009
USGS Stream Name: Trib to Sister Grove Creek County/State: Collin

Stream Type: Ephemeral (Intermittent) Perennial

Stream Flow Direction: South
OHWM Width (ft): 4 ft inside of ROW; 4 ft outside ROW
OHWM Height (in): 3 inches

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): Silt and gravel

Water Quality:

(Clear) Slightly Turbid Turbid Very Turbid

Color of water if other than clear:

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

(Overhanging trees/shrubs) Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

Johnson grass, bois d'arc, eastern red cedar, sugarberry, morning glory, pecan, American elm

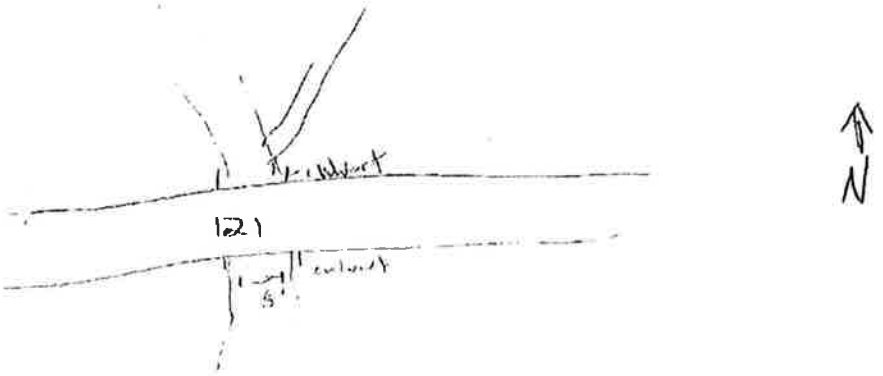
T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

Stream Data Form (continued)

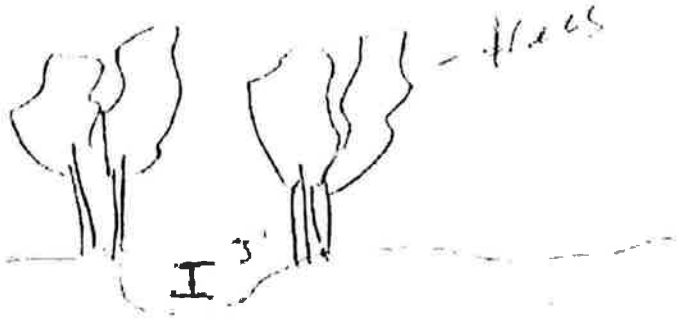
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 9
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS
Date of Field Work: 06/18/2009
USGS Stream Name: Trib to Sister Grove Creek
County/State: Collin

Stream Type: Ephemeral (Intermittent) Perennial

Stream Flow Direction: South
OHWM Width (ft): 25 ft inside ROW; 6 ft outside ROW
OHWM Height (in): 5 inches

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): silt

Water Quality:

(Clear) Slightly Turbid Turbid Very Turbid

Color of water if other than clear:

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

Overhanging trees/shrubs Deep pool/hole/channel (Aquatic vegetation)

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

Poison ivy, cattails, Johnson grass, black willow, eastern red cedar, honey locust, sugarberry

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

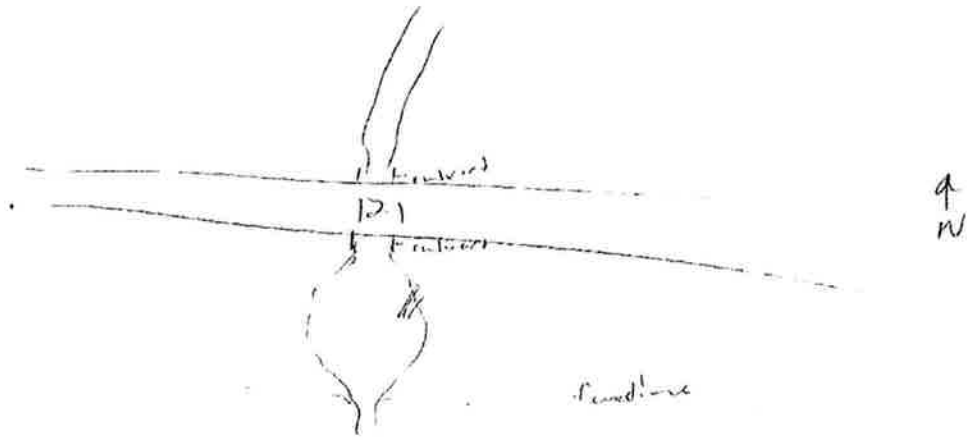
N/A

Stream Data Form (continued)

Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View

Stream Data Form #: 10
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS
Date of Field Work: 06/18/2009
USGS Stream Name: Sister Grove Creek
County/State: Collin

Stream Type: Ephemeral (Intermittent) Perennial

Stream Flow Direction: South
OHWM Width (ft): 60 ft inside ROW; 35 ft outside ROW
OHWM Height (in): 12 inches

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): clay

Water Quality:

(Clear) Slightly Turbid Turbid Very Turbid

Color of water if other than clear:

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

(Overhanging trees/shrubs) Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

Boxelder, honey locust, aster, bois d'arc, greenbriar, Johnson grass, poison ivy, black willow

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

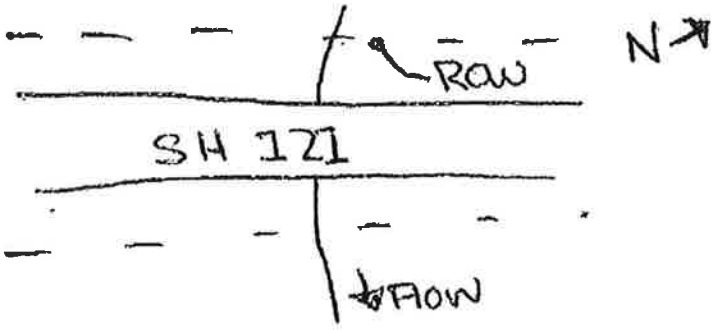
N/A

Stream Data Form (continued)

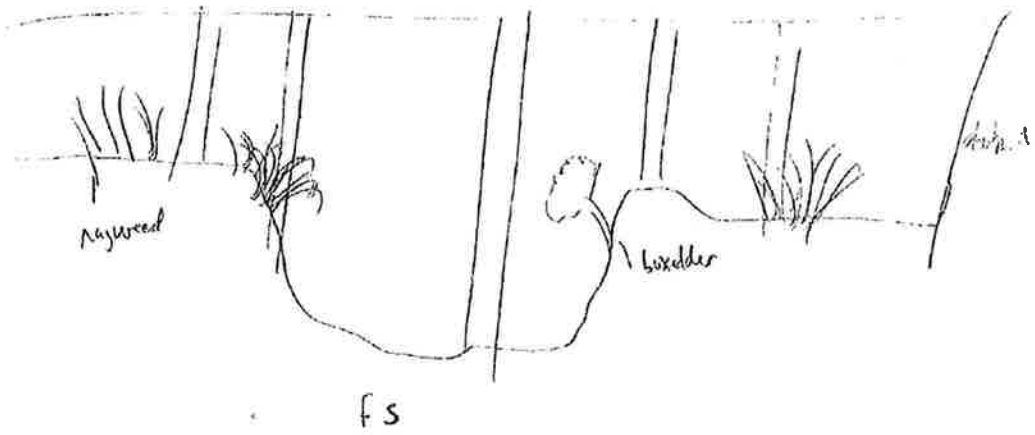
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 11
Project: SH 121
CSJ: 0549-03-018

Stream Data Form

Surveyor(s): ML, WS
Date of Field Work: 06/18/2009
USGS Stream Name: Trib to Sister Grove Creek
County/State: Collin

Stream Type: (Ephemeral) Intermittent Perennial

Stream Flow Direction: South
OHWM Width (ft): 3 ft inside and outside of OHWM
OHWM Height (in): 2 inches

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): Silt/gravel

Water Quality:

Clear Slightly Turbid Turbid Very Turbid

Color of water if other than clear: No water present

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

(Overhanging trees/shrubs) Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

sugarberry, eastern red cedar, American elm, ragweed, greenbriar, honeylocust

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

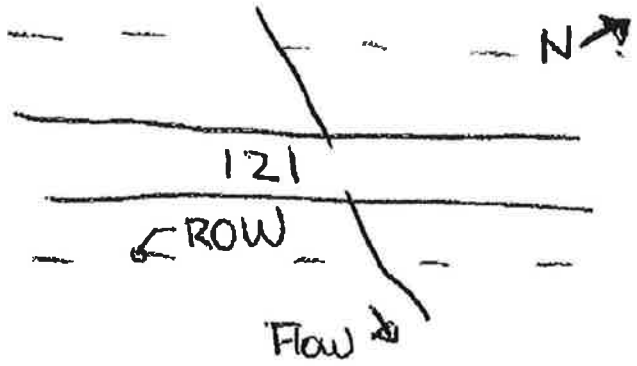
N/A

Stream Data Form (continued)

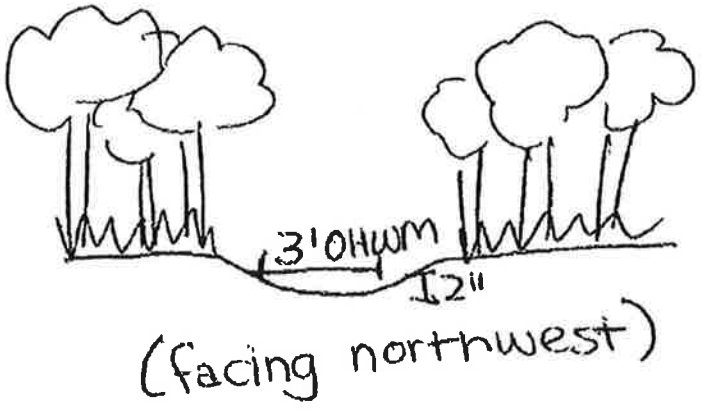
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 12
Project: SH 121
CSJ: 0549-03-018

Stream Data Form

Surveyor(s): ML, WS Date of Field Work: 06/18/2009
USGS Stream Name: Trib to Pilot Grove Creek County/State: Collin

Stream Type: Ephemeral (Intermittent) Perennial

Stream Flow Direction: South
OHWM Width (ft): 45 ft at culvert; narrows to 15 ft inside and outside of ROW
OHWM Height (in): 12 inches

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): Limestone/gravel

Water Quality:

(Clear) Slightly Turbid Turbid Very Turbid

Color of water if other than clear:

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

Overhanging trees/shrubs Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

American elm, eastern red cedar, Johnson grass, sugarberry, hickory 26" DBH, rough-leaf Dogwood, chinkapin oak, and South red oak saplings

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

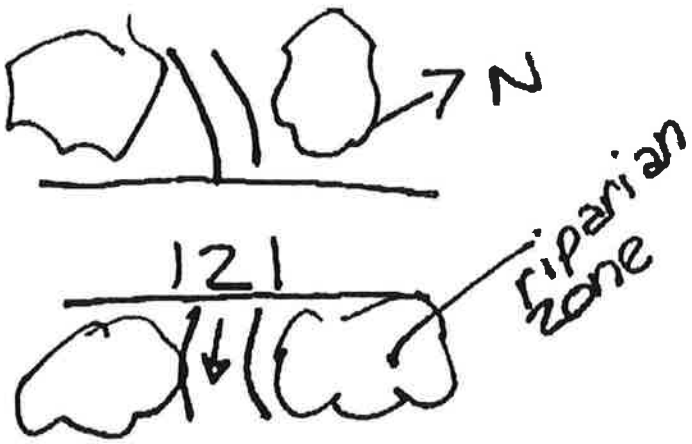
N/A

Stream Data Form (continued)

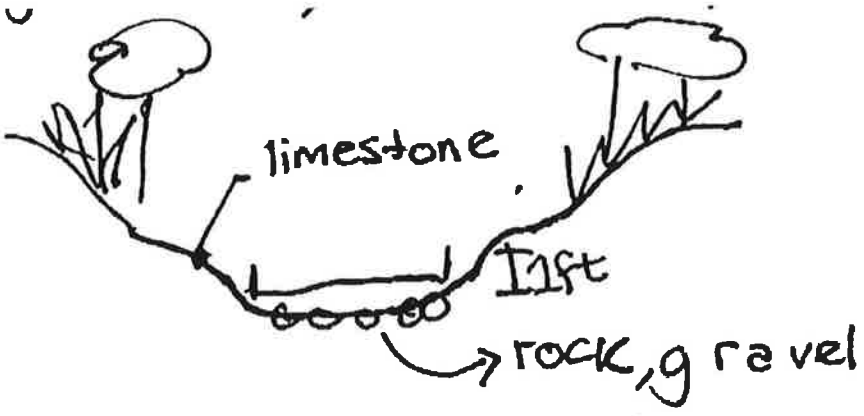
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 13
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS Date of Field Work: 06/18/2009
USGS Stream Name: Trib to Pilot Grove Creek County/State: Collin

Stream Type: Ephemeral (Intermittent) Perennial

Stream Flow Direction: South
OHWM Width (ft): 10 ft inside and outside of ROW
OHWM Height (in): 16 inches

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): sediment

Water Quality:

Clear (Slightly Turbid) Turbid Very Turbid

Color of water if other than clear: Brownish grey

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

(Overhanging trees/shrubs) Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

sugarberry, poison ivy, greenbriar, American elm, and pecan

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

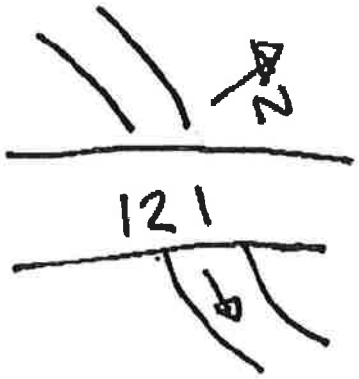
N/A

Stream Data Form (continued)

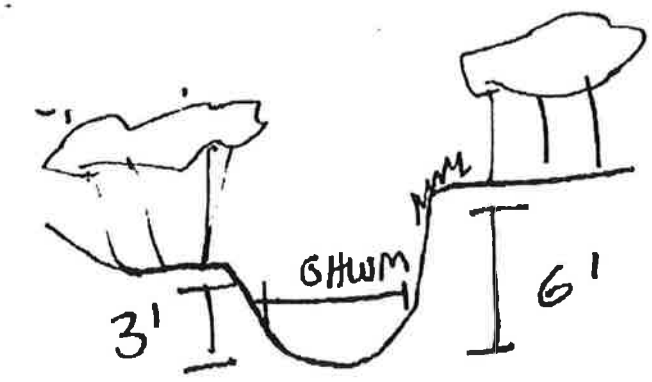
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 14
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS
Date of Field Work: 06/18/2009
USGS Stream Name: Pilot Grove Creek
County/State: Collin

Stream Type: Ephemeral Intermittent (Perennial)

Stream Flow Direction: South
OHWM Width (ft): 40 ft inside ROW; 30 ft outside ROW
OHWM Height (in): 6

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): clay

Water Quality:

(Clear) Slightly Turbid Turbid Very Turbid

Color of water if other than clear:

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

(Overhanging trees/shrubs) Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

frogs

Riparian Vegetation: List species observed.

Black willow, ragweed, green ash, cottonwood, poison ivy, Johnson grass, Aster sp.

*Mature trees (greater than 20" dbh) in the area – spaced about 20 ft apart

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

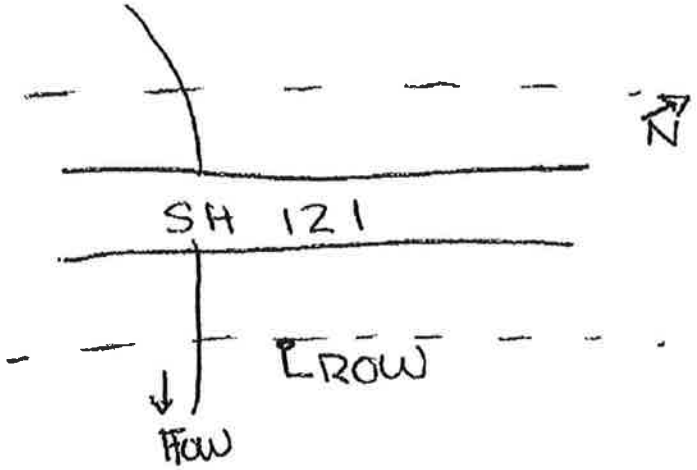
N/A

Stream Data Form (continued)

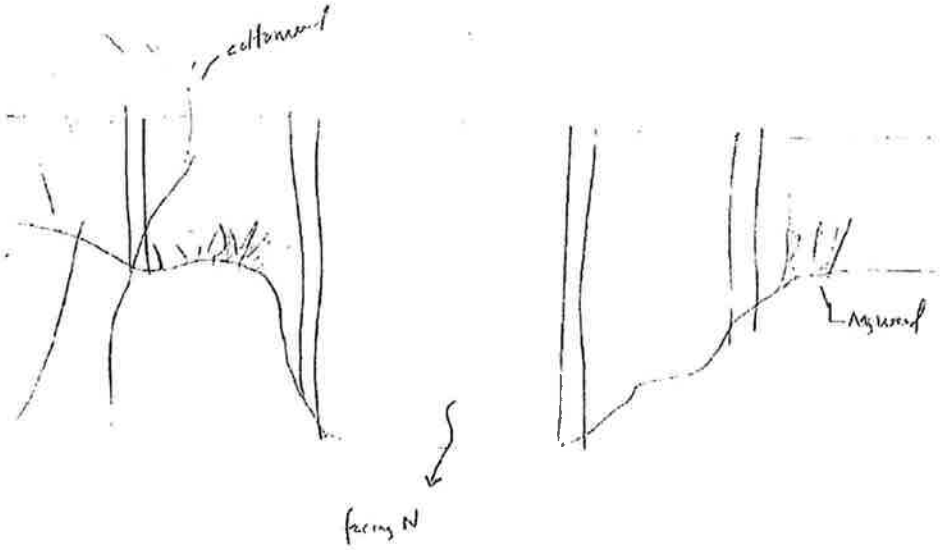
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 15
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS
Date of Field Work: 06/18/2009
USGS Stream Name: Trib to Pilot Grove Creek
County/State: Collin

Stream Type: Ephemeral (Intermittent) Perennial

Stream Flow Direction: South
OHWM Width (ft): 6-8 ft
OHWM Height (in): 2

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): silt

Water Quality:

Clear Slightly Turbid Turbid Very Turbid

Color of water if other than clear: No water present – recently wet

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar Sand/Gravel/beach/bar Mud bar Gravel riffles

(Overhanging trees/shrubs) Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

Black willow, giant ragweed, green ash, eastern red cedar, American elm, and shumard oak 26" DBH

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

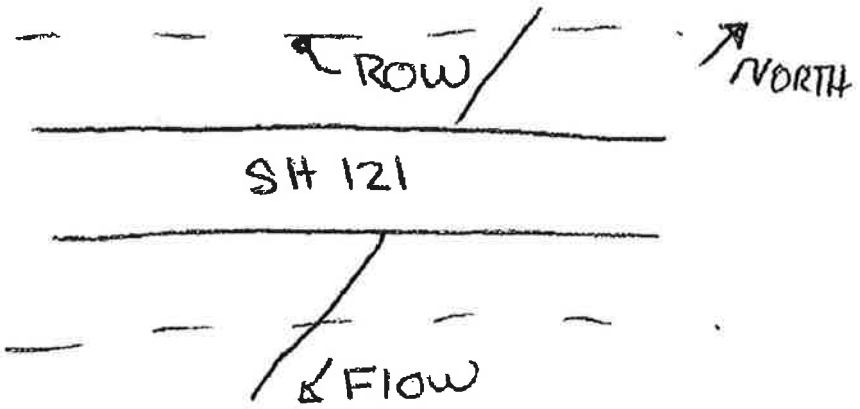
N/A

Stream Data Form (continued)

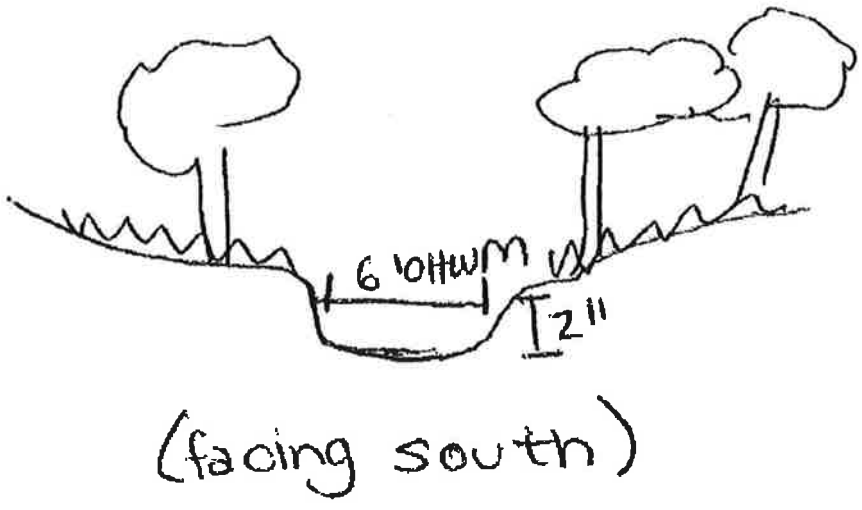
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Stream Data Form #: 16
Project: SH 121
CSJ: 0549-03-018, 0549-03-021

Stream Data Form

Surveyor(s): ML, WS
Date of Field Work: 06/18/2009
USGS Stream Name: Desert Creek
County/State: Collin

Stream Type: Ephemeral (Intermittent) Perennial

Stream Flow Direction: South
OHWM Width (ft): 35 ft inside ROW; 15 ft outside ROW
OHWM Height (in): 4

Stream bottom composition (bedrock, gravel, sand, silt, clay, organic): gravel

Water Quality:

Clear Slightly Turbid Turbid Very Turbid

Color of water if other than clear: No water present

Aquatic Habitat: Indicate all types present within ROW/project limits.

Sand bar (Sand/Gravel/beach/bar) Mud bar Gravel riffles

Overhanging trees/shrubs Deep pool/hole/channel Aquatic vegetation

Other:

Aquatic Organisms: List all species observed. This would include waterfowl, fish, snakes, turtles, frogs, invertebrates, etc.

Riparian Vegetation: List species observed.

Pecan, Johnson grass, ragweed, sugarberry, greenbriar, cedar elm, Vitis sp, black walnut, Poison ivy, and Virginia creeper

T&E Species/Suitable Habitat: List T&E species observed or which species the habitat is suitable for.

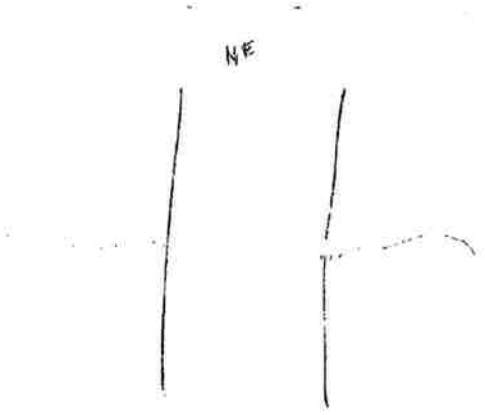
N/A

Stream Data Form (continued)

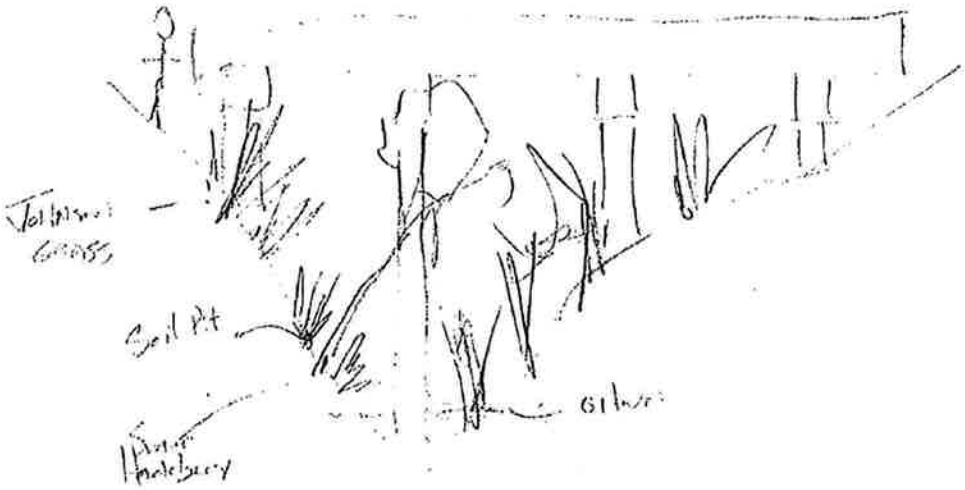
Please provide a plan and section view sketch of the stream channel.
Sketch should include:

- directional arrow;
- width of channel from top of bank to top of bank; and,
- width of stream from water edge to water edge.

Plan View



Section View



Appendix B

Woodland Data Forms

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TxDOT WOODLANDS DATA FORM

GENERAL

Project/Site	SH 121/Woodland form location #1			**Date**	6-18-09
CSJ	0549-03-018, 0549-03-021	**Investigator**	ML, WS	**County**	Collin
Filename					
Project Scope					
Widen two lane rural highway to four lane divided roadway					
Description of Wooded Site (riparian, upland, fence line, overstory/understory, disturbed, diverse, etc.)					
Fence line					
Is Site Unusual or Typical of Others in the Area?	Typical				

SPECIES DESCRIPTION

Species by Order of Dominance		
Common Name	**Taxonomic Name**	**Range of Sizes (dbh)**
Eastern red cedar	*Juniperus virginiana*	3-6 inches
Acreage of Trees to be Removed	.13 acre	
Density per Acre	Along fence – 10 ft apart (436 trees per acre)	
Remarks, Description of any Unique, Large, or Mature Trees (≥20" dbh)		

HABITAT VALUE

Is the Site Adjacent to Water?	No
Is the Site in a Developed Area?	Residential on opposite side of road
Do Plants Produce Nuts, Berries, or Acorns?	
No	
Land Use in the Project Area.	
Along edge of field, residential on other side of SH 121	
Evidence or Sightings of Wildlife in the Project Area?	
No	
Remarks	

TxDOT WOODLANDS DATA FORM

GENERAL

Project/Site	SH 121/Woodland form location #2			**Date**	6-18-09
CSJ	0549-03-018, 0549-03-021	**Investigator**	ML, WS	**County**	Collin
Filename					
Project Scope					
Widen two lane rural highway to four lane divided roadway					
Description of Wooded Site (riparian, upland, fence line, overstory/understory, disturbed, diverse, etc.)					
Riparian – Tributary to Clemons Creek					
Is Site Unusual or Typical of Others in the Area?	Typical				

SPECIES DESCRIPTION

Species by Order of Dominance		
Common Name	**Taxonomic Name**	**Range of Sizes (dbh)**
Eastern red cedar	*Juniperus virginiana*	6-10 inches; some saplings
Cottonwood	*Populus deltoides*	6-10 inches
Cedar elm	*Ulmus crassifolia*	6-10 inches
Sugarberry	*Celtis laevigata*	6-10 inches
Black willow	*Salix nigra*	6-10 inches
Acreage of Trees to be Removed	.3 acre	
Density per Acre	5 ft – 10 ft apart (1,742 – 436 trees per acre)	
Remarks, Description of any Unique, Large, or Mature Trees (≥20" dbh)		
The area contains densely wooded and sparsely wooded areas, so tree impacts vary.		

HABITAT VALUE

Is the Site Adjacent to Water?	Yes
Is the Site in a Developed Area?	Residential nearby
Do Plants Produce Nuts, Berries, or Acorns?	
Yes	
Land Use in the Project Area.	
Rural	
Evidence or Sightings of Wildlife in the Project Area?	
Rabbit	
Remarks	

TxDOT WOODLANDS DATA FORM

GENERAL

Project/Site	SH 121/Woodland form location #3			**Date**	6-18-09
CSJ	0549-03-018, 0549-03-021	**Investigator**	ML, WS	**County**	Collin
Filename					
Project Scope					
Widen two lane rural highway to four lane divided roadway					
Description of Wooded Site (riparian, upland, fence line, overstory/understory, disturbed, diverse, etc.)					
Upland					
Is Site Unusual or Typical of Others in the Area?	Typical				

SPECIES DESCRIPTION

Species by Order of Dominance		
Common Name	**Taxonomic Name**	**Range of Sizes (dbh)**
Cedar elm	*Ulmus crassifolia*	3-6 inches
Sugarberry	*Celtis laevigata*	2-6 inches
Honey locust	*Gymnocladus dioica*	4-6 inches
Acreage of Trees to be Removed	.08 acre	
Density per Acre	3 to 4 ft apart (2,722)	
Remarks, Description of any Unique, Large, or Mature Trees (≥20" dbh)		

HABITAT VALUE

Is the Site Adjacent to Water?	No
Is the Site in a Developed Area?	No
Do Plants Produce Nuts, Berries, or Acorns?	
Yes	
Land Use in the Project Area.	
Commercial across SH 121; rural/fields	
Evidence or Sightings of Wildlife in the Project Area?	
No	
Remarks	

TxDOT WOODLANDS DATA FORM

GENERAL

Project/Site	SH 121/Woodland form location #4			Date	6-18-09
CSJ	0549-03-018, 0549-03-021	Investigator	ML, WS	County	Collin
Filename					
Project Scope					
Widen two lane rural highway to four lane divided roadway					
Description of Wooded Site (riparian, upland, fence line, overstory/understory, disturbed, diverse, etc.)					
Fence line					
Is Site Unusual or Typical of Others in the Area?	Typical				

SPECIES DESCRIPTION

Species by Order of Dominance		
Common Name	Taxonomic Name	Range of Sizes (dbh)
Cedar elm	*Ulmus crassifolia*	6-8 inches (some saplings)
Sugarberry	*Celtis laevigata*	6-8 inches (some saplings)
American elm	*Ulmus americana*	6-8 inches (some saplings)
Acreage of Trees to be Removed	.08 acre	
Density per Acre	Approximately 4 ft apart along fenceline (2,722 trees per acre)	
Remarks, Description of any Unique, Large, or Mature Trees (≥20" dbh)		

HABITAT VALUE

Is the Site Adjacent to Water?	No
Is the Site in a Developed Area?	Rural
Do Plants Produce Nuts, Berries, or Acorns?	
Yes	
Land Use in the Project Area.	
Rural	
Evidence or Sightings of Wildlife in the Project Area?	
No	
Remarks	

TxDOT WOODLANDS DATA FORM

GENERAL

Project/Site	SH 121/Woodland form location #5			**Date**	6-18-09
CSJ	0549-03-018, 0549-03-021	**Investigator**	ML, WS	**County**	Collin
Filename					
Project Scope					
Widen two lane rural highway to four lane divided roadway					
Description of Wooded Site (riparian, upland, fence line, overstory/understory, disturbed, diverse, etc.)					
Fence line					
Is Site Unusual or Typical of Others in the Area?	Typical				

SPECIES DESCRIPTION

Species by Order of Dominance		
Common Name	**Taxonomic Name**	**Range of Sizes (dbh)**
Sugarberry	*Celtis laevigata*	8-10 inches
Acreage of Trees to be Removed	.08 acre	
Density per Acre	Approximately 6 ft apart along fence (1,210 trees per acre)	
Remarks, Description of any Unique, Large, or Mature Trees (≥20" dbh)		

HABITAT VALUE

Is the Site Adjacent to Water?	No
Is the Site in a Developed Area?	Rural
Do Plants Produce Nuts, Berries, or Acorns?	
Yes	
Land Use in the Project Area.	
Rural/fields	
Evidence or Sightings of Wildlife in the Project Area?	
No	
Remarks	

TxDOT WOODLANDS DATA FORM

GENERAL

Project/Site	SH 121/Woodland form location #6			**Date**	6-18-09
CSJ	0549-03-018, 0549-03-021	**Investigator**	ML, WS	**County**	Collin
Filename					
Project Scope					
Widen two lane rural highway to four lane divided roadway					
Description of Wooded Site (riparian, upland, fence line, overstory/understory, disturbed, diverse, etc.)					
Riparian					
Is Site Unusual or Typical of Others in the Area?	Typical				

SPECIES DESCRIPTION

Species by Order of Dominance		
Common Name	**Taxonomic Name**	**Range of Sizes (dbh)**
Eastern red cedar	*Juniperus virginiana*	4"
Sugarberry	*Celtis laevigata*	10", 6", 20", 24", 12", 16", 16", 12"
Honey locust	*Gymnocladus dioica*	1-2"
American elm	*Ulmus americana*	36", 18", 20", 18"
Chinaberry	*Melia azedarach*	4"
Live oak	*Quercus virginiana*	8"
Bois d'arc	*Maclura pomifera*	16", 16"
Acreage of Trees to be Removed	.2 acre	
Density per Acre	5 ft – 10 ft apart (1,742 – 436 trees per acre)	
Remarks, Description of any Unique, Large, or Mature Trees (≥20" dbh)		
A few large American elms greater than 20" dbh.		

HABITAT VALUE

Is the Site Adjacent to Water?	Yes
Is the Site in a Developed Area?	Rural
Do Plants Produce Nuts, Berries, or Acorns?	
Yes	
Land Use in the Project Area.	
Rural/field	
Evidence or Sightings of Wildlife in the Project Area?	
No	
Remarks	

TxDOT WOODLANDS DATA FORM

GENERAL

Project/Site	SH 121/Woodland form location #7			**Date**	6-18-09
CSJ	0549-03-018, 0549-03-021	**Investigator**	ML, WS	**County**	Collin
Filename					
Project Scope					
Widen two lane rural highway to four lane divided roadway					
Description of Wooded Site (riparian, upland, fence line, overstory/understory, disturbed, diverse, etc.)					
Upland near Tributary to Sister Grove Creek					
Is Site Unusual or Typical of Others in the Area?	Typical				

SPECIES DESCRIPTION

Species by Order of Dominance		
Common Name	**Taxonomic Name**	**Range of Sizes (dbh)**
Eastern red cedar	*Juniperus virginiana*	6-10"
Pecan	*Carya illinoinensis*	10-16"
Sugarberry	*Celtis laevigata*	8-20"
Honey locust	*Gymnocladus dioica*	10-16"
American elm	*Ulmus americana*	6-16"
Acreage of Trees to be Removed	.04 acre	
Density per Acre	6 ft apart (1210 trees per acre)	
Remarks, Description of any Unique, Large, or Mature Trees (≥20" dbh)		

HABITAT VALUE

Is the Site Adjacent to Water?	No
Is the Site in a Developed Area?	No
Do Plants Produce Nuts, Berries, or Acorns?	
Yes	
Land Use in the Project Area.	
Rural/agriculture	
Evidence or Sightings of Wildlife in the Project Area?	
No	
Remarks	

TxDOT WOODLANDS DATA FORM

GENERAL

Project/Site	SH 121/Woodland form location #8			Date	6-18-09
CSJ	0549-03-018, 0549-03-021	Investigator	ML, WS	County	Collin
Filename					
Project Scope					
Widen two lane rural highway to four lane divided roadway					
Description of Wooded Site (riparian, upland, fence line, overstory/understory, disturbed, diverse, etc.)					
Riparian – Pilot Grove Creek					
Is Site Unusual or Typical of Others in the Area?	Typical				

SPECIES DESCRIPTION

Species by Order of Dominance		
Common Name	Taxonomic Name	Range of Sizes (dbh)
American elm	*Ulmus americana*	3-8"
Box elder	*Acer negundo*	10"
Green ash	*Fraxinus pennsylvanica*	8-14"
Acreage of Trees to be Removed	.5 acre	
Density per Acre	9 ft apart (538 trees per acre)	
Remarks, Description of any Unique, Large, or Mature Trees (≥20" dbh)		

HABITAT VALUE

Is the Site Adjacent to Water?	Yes
Is the Site in a Developed Area?	No
Do Plants Produce Nuts, Berries, or Acorns?	
No	
Land Use in the Project Area.	
Agricultural	
Evidence or Sightings of Wildlife in the Project Area?	
No	
Remarks	

TxDOT WOODLANDS DATA FORM

GENERAL

Project/Site	SH 121/Woodland form location #9			**Date**	6-18-09
CSJ	0549-03-018, 0549-03-021	**Investigator**	ML, WS	**County**	Collin
Filename					
Project Scope					
Widen two lane rural highway to four lane divided roadway					
Description of Wooded Site (riparian, upland, fence line, overstory/understory, disturbed, diverse, etc.)					
Riparian					
Is Site Unusual or Typical of Others in the Area?	Typical				

SPECIES DESCRIPTION

Species by Order of Dominance		
Common Name	**Taxonomic Name**	**Range of Sizes (dbh)**
Cedar elm	*Ulmus crassifolia*	4-6
Sugarberry	*Celtis laevigata*	8
American elm	*Ulmus americana*	12-18
Bois d'arc	*Maclura pomifera*	6-10"
Pecan	*Carya illinoinensis*	8-11
Acreage of Trees to be Removed	.4 acre	
Density per Acre	8 ft apart (680 trees per acre)	
Remarks, Description of any Unique, Large, or Mature Trees (≥20" dbh)		

HABITAT VALUE

Is the Site Adjacent to Water?	Yes
Is the Site in a Developed Area?	No
Do Plants Produce Nuts, Berries, or Acorns?	
Yes	
Land Use in the Project Area.	
Rural	
Evidence or Sightings of Wildlife in the Project Area?	
No	
Remarks	

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Appendix C

Wetland Data Forms

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WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: SH 121 at tributary to Clemons Creek City/County: Collin Sampling Date: 06/18/09
Applicant/Owner: TxDOT State: TX Sampling Point: 1
Investigator(s): DVG, JM Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): bank Local relief (concave, convex, none): concave Slope (%):5
Subregion (LRR): J Lat: 33.2879 Long: -96.5535 Datum: NAD 1983
Soil Map Unit Name: Austin silty clay, 3 to 5 percent slopes, eroded NWI classification: None

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: A storm water pond constructed to collect street runoff from a subdivision directly feeds this tributary. It is located on the north side of SH 121, whereas this wetland is located on the south side. This tributary, as shown on the USGS quad map, was originally designated as an intermittent stream. The creation of the pond has provided a continual source of water to this once intermittent creek. This sampling point is not in a wetland because the soil criteria are not met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: N/A)			
1. None			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: N/A)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5 ft. radius)			
1. *Leersia oryzoides*	15	Yes	OBL
2. *Rumex crispus*	15	Yes	FACW
3. *Typha latifolia*	15	Yes	OBL
4. *Andropogon glomeratus*	15	Yes	FACW+
5. *Sorghum halepense*	20	Yes	FACU
6. *Cynodon dactylon*	20	Yes	FACU+
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: N/A)			
1. None			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC –): 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide Supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
The vegetation criteria is met because the dominant species for OBL, FACW and FAC exceeds 50%.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 4/1	100					clay	No redox features

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5) **(LRR F)**
- __ 1 cm Muck (A9) **(LRR F, G, H)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ 2.5 cm Mucky Peat or Peat (S2) **(LRR G,H)**
- __ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR I, J)**
- __ Coast Prairie Redox (A16) **(LRR F, G, H)**
- __ Dark Surface (S7) **(LRR G)**
- __ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- __ Reduced Vertic (F18)
- __ Red Parent Material (TF2)
- __ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:

While the soil was typical of of Austin silty clay, 3-5% slopes, eroded, no hydric soil indicators were observed. The soil criteria is not met because the soil does not contain hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- __ Surface Water (A1)
- __ High Water Table (A2)
- X Saturation (A3)
- __ Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Water-Stained Leaves (B9)
- __ Salt Crust (B11)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Dry-Season Water Table (C2)
- __ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- __ Presence of Reduced Iron (C4)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- __ Surface Soil Cracks (B6)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Drainage Patterns (B10)
- __ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ FAC-Neutral Test (D5)
- __ Frost-Heave hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? Yes X No ____ Depth (inches): surface

(includes capillary fringe)

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

The hydrology criteria is met because the area contains a primary indicator of saturation.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: SH 121 at trib. to Sister Grove Creek (Brinlee) City/County: Collin Sampling Date: 06/18/09
Applicant/Owner: TxDOT State: TX Sampling Point: 2
Investigator(s): DVG, JM Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): bank Local relief (concave, convex, none): concave Slope (%):5
Subregion (LRR): J Lat: 33.3178 Long: -96.504 Datum: NAD 1983
Soil Map Unit Name: Houston Black Clay NWI classification: PFOIC

Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: This sampling point is not in a wetland because the soil criteria are not met.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft radius)			
1. *Gleditsia triacanthos*	10	Yes	FAC
Salix nigra	20	Yes	FACW+
2.			
3. *Juniperus virginiana*	5	Yes	FACU-
Ulmus crassifolia	10	Yes	FAC
4.			
5. *Celtis laevigata*	20	Yes	FAC
	65	= Total Cover	
Sapling/Shrub Stratum (Plot size: N/A)			
None			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5 ft radius)			
1. *Rumex crispus*	10	Yes	FACW
2. *Lemna trinervis*	15	Yes	OBL
Potamogeton nodosus	15	Yes	OBL
3. *Sagittaria sp*	15	Yes	OBL*
4. *Leersia oryzoides*	15	Yes	OBL
5. *Ambrosia artemisiifolia*	5	Yes	FACU-
6. *Sorghum halepense*	5	Yes	FACU
7. *Smilax bona-nox*	10	Yes	FAC
8. *Toxicodendron radicans*	10	Yes	FAC
9.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: N/A)			
None			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC –): 11* (A)

Total Number of Dominant Species Across All Strata: 14* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 79% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptations[1] (Provide Supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
(*FACW to OBL) The vegetation criteria is met because the dominant species for OBL, FACW and FAC exceed 50%.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR 6/2	100					silty clay	No redox features observed
10-12	10YR 5/1	100					silty clay	No redox features observed

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5) **(LRR F)**
- __ 1 cm Muck (A9) **(LRR F, G, H)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Sandy Mucky Mineral (S1)
- __ 2.5 cm Mucky Peat or Peat (S2) **(LRR G,H)**
- __ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Loamy Mucky Mineral (F1)
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR I, J)**
- __ Coast Prairie Redox (A16) **(LRR F, G, H)**
- __ Dark Surface (S7) **(LRR G)**
- __ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- __ Reduced Vertic (F18)
- __ Red Parent Material (TF2)
- __ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No X

Remarks:
While the soil was typical of of Trinity clay, occasionally flooded, no hydric soil indicators were observed. The soil criteria is not met because the soil does not contain hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- __ Surface Water (A1)
- __ High Water Table (A2)
- X Saturation (A3)
- __ Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Water-Stained Leaves (B9)
- __ Salt Crust (B11)
- __ Aquatic Invertebrates (B13)
- __ Hydrogen Sulfide Odor (C1)
- __ Dry-Season Water Table (C2)
- __ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- __ Presence of Reduced Iron (C4)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- __ Surface Soil Cracks (B6)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Drainage Patterns (B10)
- __ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ FAC-Neutral Test (D5)
- __ Frost-Heave hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): _____

Water Table Present? Yes ____ No X Depth (inches): _____

Saturation Present? Yes X No ____ Depth (inches): surface

(includes capillary fringe)

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
n/a

Remarks:
The hydrology criteria is met because the area contains a primary wetland hydrology indicator.

Appendix D

Citation from State Transportation Improvement Program and Metropolitan Transportation Plan

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DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0364-02-017	SH 121	R	LEWISVILLE	TXDOT-DALLAS	**$19,000,000**

LIMITS FROM: TARRANT COUNTY LINE
LIMITS TO: DENTON COUNTY LINE NEAR DENTON CREEK
TIP DESCRIPTION: CONVERT 4 LANE DIVIDED TO 10 LANE FREEWAY WITH 2 TO 3/4 LANE FRONTAGE ROADS
REMARKS: REVISE FUNDING; RTR 121-DA2 FUNDS

REV DATE: 08/2011
MPO PROJECT ID: 11239
FUNDING CATEGORY: 12
MTP REFERENCE: FT1-11.50.1

PENDING FHWA APPROVAL

Project History: CATEGORY 2 FUNDS IN FY 2014 AND APPENDIX D

Total Project Cost Information:

Preliminary Engineering	$250,000
Right Of Way:	$19,000,000
Construction:	$106,218,984
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$125,468,984**

Cost of Approved Phases: **$19,000,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Category 12:	$15,200,000	$1,900,000	$0	$1,900,000	$0	$19,000,000
Funding by Share:	$15,200,000	$1,900,000	$0	$1,900,000	$0	**$19,000,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	KAUFMAN	0495-01-058	SP 557	E,R	TERRELL	TERRELL	**$491,474**

LIMITS FROM: FM 148
LIMITS TO: IH 20 IN TERRELL
TIP DESCRIPTION: CONSTRUCT 0 TO 2 LANE EASTBOUND FRONTAGE ROAD
REMARKS: ADD PROJECT TO TIP/STIP; LOCAL CONTRIBUTION PAID BY TERRELL

REV DATE: 08/2011
MPO PROJECT ID: 83224
FUNDING CATEGORY: LC
MTP REFERENCE: FT1-34.10.1

PENDING FHWA APPROVAL

Project History: CONSTRUCTION PHASE IN APPENDIX D

Total Project Cost Information:

Preliminary Engineering	$391,474
Right Of Way:	$100,000
Construction:	$2,868,545
Construction Engineering	$112,500
Contingencies:	$105,000
Indirects:	$72,750
Bond Financing:	$0
Total Project Cost:	**$3,650,269**

Cost of Approved Phases: **$491,474**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Local Contribution:	$0	$0	$0	$0	$491,474	$491,474
Funding by Share:	$0	$0	$0	$0	$491,474	**$491,474**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	COLLIN	0549-03-018	SH 121	E,R	MELISSA/ANNA	TXDOT-DALLAS	**$9,450,000**

LIMITS FROM: SH 5
LIMITS TO: EAST OF FM 455
TIP DESCRIPTION: WIDEN 2 LANE RURAL HIGHWAY TO 4 LANE DIVIDED ROADWAY
REMARKS: FUNDED WITH DFW RTR-CC2 FUNDS

REV DATE: 07/2010
MPO PROJECT ID: 20176
FUNDING CATEGORY: RTR
MTP REFERENCE: RSA1-209.1

Project History:

Total Project Cost Information:

Preliminary Engineering	$4,250,000
Right Of Way:	$5,200,000
Construction:	$29,375,660
Construction Engineering	$2,753,612
Contingencies:	$0
Indirects:	$2,994,553
Bond Financing:	$0
Total Project Cost:	**$44,573,825**

Cost of Approved Phases: **$9,450,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
RTR:	$0	$0	$8,080,000	$1,370,000	$0	$9,450,000
Funding by Share:	$0	$0	$8,080,000	$1,370,000	$0	**$9,450,000**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

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DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	COLLIN	0549-03-021	SH 121	E	MELISSA/ANNA	TXDOT-DALLAS	**$6,250,000**

LIMITS FROM: EAST OF FM 455
LIMITS TO: CR 635 (FANNIN COUNTY LINE)
TIP DESCRIPTION: ENGINEERING ONLY FOR WIDENING OF TWO LANE RURAL HIGHWAY TO FOUR LANE DIVIDED ROADWAY
REMARKS: PE ONLY FUNDED WITH DFW RTR-CC1 FUNDS

REV DATE: 07/2010
MPO PROJECT ID: 20076
FUNDING CATEGORY: RTR
MTP REFERENCE: RSA1-209.0

Project History:

Total Project Cost Information:

Preliminary Engineering	$6,250,000
Right Of Way:	$0
Construction:	$34,023,652
Construction Engineering	$1,531,064
Contingencies:	$2,211,537
Indirects:	$1,663,757
Bond Financing:	$0
Total Project Cost:	**$45,680,010**

Cost of Approved Phases: **$6,250,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
RTR:	$0	$0	$5,000,000	$1,250,000	$0	$6,250,000
Funding by Share:	$0	$0	$5,000,000	$1,250,000	$0	**$6,250,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DENTON	0718-01-064	FM 156	E,R	JUSTIN	TXDOT-DALLAS	**$2,400,000**

LIMITS FROM: SH 114
LIMITS TO: N JUSTIN CITY LIMIT (N OF FM 407)
TIP DESCRIPTION: WIDEN 2 LANE RURAL TO 4 LANE DIVIDED URBAN CROSS SECTION
REMARKS:

REV DATE: 07/2010
MPO PROJECT ID: 20121
FUNDING CATEGORY: RTR
MTP REFERENCE: NRSA1-DAL118

Project History:

Total Project Cost Information:

Preliminary Engineering	$1,200,000
Right Of Way:	$1,200,000
Construction:	$31,865,982
Construction Engineering	$1,740,833
Contingencies:	$3,481,666
Indirects:	$1,891,705
Bond Financing:	$0
Total Project Cost:	**$41,380,186**

Cost of Approved Phases: **$2,400,000**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
RTR:	$0	$0	$2,020,000	$380,000	$0	$2,400,000
Funding by Share:	$0	$0	$2,020,000	$380,000	$0	**$2,400,000**

DISTRICT	COUNTY	CSJ	HWY	PHASE	CITY	PROJECT SPONSOR	YOE COST
DALLAS	DALLAS	0918-00-002	US 75	C	DALLAS	DART	**$1,886,039**

LIMITS FROM: DALLAS CBD
LIMITS TO: SH 121
TIP DESCRIPTION: INTEGRATED CORRIDOR MANAGEMENT SYSTEMS PROJECT
REMARKS: FEDERAL 5306 FUNDING

REV DATE: 07/2010
MPO PROJECT ID: 12424.10
FUNDING CATEGORY: SECTION 5306
MTP REFERENCE: ITS2-004, ITS2-005, ITS2-006
NOX (LBS/DAY):
VOC (LBS/DAY):

Project History:

Total Project Cost Information:

Preliminary Engineering	$0
Right Of Way:	$0
Construction:	$1,886,039
Construction Engineering	$0
Contingencies:	$0
Indirects:	$0
Bond Financing:	$0
Total Project Cost:	**$1,886,039**

Cost of Approved Phases: **$1,886,039**

Authorized Funding by Category/Share:

	Federal	State	Regional	Local	Local Contribution	Funding By Category
Section 5306:	$1,519,310	$3,775	$0	$362,954	$0	$1,886,039
Funding by Share:	$1,519,310	$3,775	$0	$362,954	$0	**$1,886,039**

PHASE: C=CONSTRUCTION, E = ENGINEERING, R = ROW, T = TRANSFER

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Proposed Regionally Significant Arterials
TxDOT Dallas District

MTP ID	COUNTY	STREET NAME	FROM STREET NAME	TO STREET NAME	2012 LANES	2020 LANES	2030 LANES	2035 LANES	OPERATIONAL BETWEEN	CSJ_1	CSJ_2	COG_1	COG_2	YOE ESTIMATED COST
RSA1- 80.0	Dallas	Valley View Lane	SH 161 on ramp	Alpha Road	6	6	6	6	N/A			11057.00		
RSA1- 80.5	Dallas	Valley View Lane	Alpha Road	IH 635 Midway ramps	4	4	4	4	N/A					
RSA1- 81.0	Dallas	MacArthur Blvd	Northgate Drive	Rochelle Blvd	4	4	4	4	N/A			1715.00		
RSA1- 81.1	Dallas	MacArthur Blvd	SH 161	Northgate Drive	6	6	6	6	N/A	8052-18-001		3079.00		
RSA1- 81.2	Dallas	MacArthur Blvd	SH 183 frontage EB	Shady Grove Road	4	4	4	4	N/A					
RSA1- 81.3	Dallas	MacArthur Blvd	SH 161	Belt Line Road	6	6	6	6	N/A	8052-18-001		3079.00		
RSA1- 81.4	Dallas	MacArthur Blvd	Rochelle Blvd	SH 183 frontage WB	6	6	6	6	N/A			1715.00		
RSA1- 81.5	Dallas	MacArthur Blvd	Oakdale Road	Trinity Pkwy/Hunter Ferrell	4	6	6	6	2012-2020			81310.00		$1,659,840
RSA1- 81.6	Dallas	MacArthur Blvd	Trinity Pkwy	IH 30 frontage WB	2	4	4	6	2030-2035	0918-45-793		81310.00		$29,462,160
RSA1- 81.7	Dallas	MacArthur Blvd	IH 30 frontage EB	SH 180/Main Street	4	4	6	6	2020-2030					$7,425,600
RSA1- 81.8	Dallas	MacArthur Blvd	Shady Grove Road	Oakdale Road	6	6	6	6	N/A					
RSA1- 82.0	Dallas	Skillman Street	Audelia Road/Whitehurst Drive	Northwest Hwy	6	6	6	6	N/A					
RSA1- 82.2	Dallas	Skillman Street	IH 635 frontage NB	Forest Lane	6	6	6	6	N/A					
RSA1- 83.0	Dallas	Rowlett Road	Belt Line Road/Broadway	Roan Road	4	6	6	6	2012-2020	0918-45-227		1492.00	83032.00	$3,712,800
RSA1- 83.1	Dallas	Rowlett Road	Roan Road	Miller Road	6	6	6	6	N/A	0918-45-227		1492.00	83032.00	
RSA1- 83.2	Dallas	Rowlett Road	Miller Road	Century Drive	4	6	6	6	2012-2020	0918-45-807				$1,113,840
RSA1- 83.3	Dallas	Rowlett Road	Century Drive	SH 190	6	6	6	6	N/A					
RSA1- 83.4	Dallas	Firewheel Pkwy	SH 190	SH 78/Lavon Drive	4	4	4	4	N/A					
RSA1- 84.0	Dallas	SH 310	Illinois Avenue E	Loop 12	6	6	6	6	N/A					
RSA1- 84.05	Dallas	SH 310	Loop 12	IH 20 frontage WB	4	4	4	4	N/A					
RSA1- 84.1	Dallas	SH 310	IH 20 ramps EB	IH 45 ramp NB	4	4	4	4	N/A					
RSA1- 84.2	Dallas	SH 310	Budd Street	Overton Road	2/2	2/2	2/2	2/2	N/A					
RSA1- 84.25	Dallas	SH 310	Overton Road	Illinois Avenue	6	6	6	6	N/A					
RSA1- 84.3	Dallas	S M Wright Pkwy	Grand Avenue	US 175	N/A	6	6	6	2012-2020					$3,385,200
RSA1- 84.4	Dallas	S M Wright Pkwy	US 175	Budd Street	4	6	6	6	2012-2020	0092-01-052				$764,400
RSA1- 85.0	Dallas	Avenue B/Avenue D couplet	Nona Street/SH 66	1st Street	4/3	4/3	4/3	4/3	N/A					
RSA1- 85.1	Dallas	Avenue B/Forest Lane couplet	State Street	Garland Lane	3/3	3/3	3/3	3/3	N/A					
RSA1- 85.2	Dallas	Avenue B/Avenue D couplet	Garland Avenue	9th Street	4/4	4/4	4/4	4/4	N/A					
RSA1- 85.3	Dallas	Avenue B/Avenue D couplet	9th Street	Glenbrook Drive	3/3	3/3	3/3	3/3	N/A					
RSA1- 85.4	Dallas	Avenue B/Avenue D couplet	Glenbrook Drive	5th Street	4/4	4/4	4/4	4/4	N/A					
RSA1- 91.0	Dallas	Big Town Blvd	US 80	Samuell	6	6	6	6	N/A					
RSA1- 91.1	Dallas	Big Town Blvd	Samuell	Forney	4	4	4	4	N/A					
RSA1- 92.0	Dallas	Bruton Road	Buckner Blvd	Jim Miller Road	6	6	6	6	N/A					
RSA1- 93.0	Dallas	Arapaho Road	US 75	Greenville Avenue	6	6	6	6	N/A					
RSA1- 94.0	Dallas	Walnut Street	SH 78	5th Street	4	4	4	4	N/A					
RSA1- 95.0	Dallas	Park Lane	US 75	Greenville Avenue	4	5	5	5	N/A	0918-45-181				
RSA1- 96.0	Dallas	Mockingbird Lane	US 75	McMillan Avenue	6	6	6	6	N/A					
RSA1- 96.1	Dallas	Mockingbird Lane	IH 35E	Airdrome Drive	6	6	6	6	N/A					
RSA1- 96.2	Dallas	Airdrome Drive	Mockingbird Lane	Marsh Lane	4	4	4	4	N/A					
RSA1- 97.0	Dallas	Carl Road	Northgate Drive	SH 183	4	4	4	4	N/A					
RSA1- 98.0	Dallas	Houston Street	Elm Street	Jackson Street	5	5	5	5	N/A					
RSA1- 98.1	Dallas	Houston Street	Jackson Street	Wood Street	5	5	5	5	N/A					
RSA1- 98.2	Dallas	Houston Street	Wood Street	Young Street	5	5	5	5	N/A					
RSA1- 99.0	Dallas	O'Conner Road	SH 356	Rock Island Road	4	4	4	4	N/A					
RSA1- 200.0	Collin	SH 289	Hedgcoxe Road	Legacy Drive	6	6	6	6	N/A					
RSA1- 201.0	Collin	SH 289	US 289/US 380 ramps	FM 3537	2	6	6	6	2012-2020	0091-04-041	0091-05-041	81218.00		$9,413,040
RSA1- 201.1	Collin	SH 289	FM 3537	Hedgcoxe Road	6	6	6	6	N/A					
RSA1- 202.0	Collin	SH 289	US 380 ramps	FM 1461	2	6	6	6	2012-2020	0091-04-050				$6,573,840
RSA1- 202.05	Collin	SH 289	FM 1461	BU 289 N of Celina	2	4	4	6	2030-2035					$156,439,920
RSA1- 202.1	Collin	SH 289	BU 289 N of Celina	Grayson CR 60 (Grayson County line)	2	2	4	4	2020-2030	0091-03-021				$20,267,520
RSA1- 208.0	Collin	SH 5/McDonald Street	SH 121	Tennessee Street	2	2	4	4	2020-2030					$33,808,320
~~RSA1- 208.1~~	~~Collin~~	~~SH 5/McDonald Street~~	~~Tennessee Street~~	~~Spur 399~~	~~4~~	~~4~~	~~4~~	~~4~~	~~N/A~~					
RSA1- 209.0	Collin	SH 121	1.33 mi N of SH 160 (Fannin County line)	FM 455	2	2	4	4	2020-2030	0549-03-018				$62,025,600
RSA1- 209.1	Collin	SH 121	FM 455	SH 5 (N)	2	4	4	4	2012-2020	0549-03-018				$15,637,440

* Facility is staged and may have improvements completed prior to the date listed.
Source: North Central Texas Council of Governments

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Appendix E

Farmland Conversion Impact Rating Form

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U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request	4. Sheet 1 of _____
1. Name of Project **SH 121 from SH5 to Fannin**	5. Federal Agency Involved **FHWA**	
2. Type of Project **widen highway**	6. County and State **Collin, Texas**	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS	2. Person Completing Form
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☐ NO ☐		4. Acres Irrigated / Average Farm Size
5. Major Crop(s)	6. Farmable Land In Government Jurisdiction Acres: %	7. Amount of Farmland As Defined in FPPA Acres: %
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS

PART III *(To be completed by Federal Agency)*	Alternative Corridor For Segment			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	75			
B. Total Acres To Be Converted Indirectly, Or To Receive Services	75			
C. Total Acres In Corridor	150	0	0	0
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime And Unique Farmland				
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*				
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))* — Maximum Points				
1. Area In Nonurban Use — 15	14			
2. Perimeter In Nonurban Use — 10	8			
3. Percent Of Corridor Being Farmed — 20	15			
4. Protection Provided By State And Local Government — 20	0			
5. Size of Present Farm Unit Compared To Average — 10	5			
6. Creation Of Nonfarmable Farmland — 25	0			
7. Availability Of Farm Support Services — 5	5			
8. On-Farm Investments — 20	10			
9. Effects Of Conversion On Farm Support Services — 25	0			
10. Compatibility With Existing Agricultural Use — 10	0			
TOTAL CORRIDOR ASSESSMENT POINTS — 160	57	0	0	0
PART VII *(To be completed by Federal Agency)*				
Relative Value Of Farmland (From Part V) — 100				
Total Corridor Assessment (From Part VI above or a local site assessment) — 160	57	0	0	0
TOTAL POINTS *(Total of above 2 lines)* — 260	57	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☑

5. Reason For Selection:

Signature of Person Completing this Part: DATE 6/5/09

NOTE: Complete a form for each segment with more than one Alternate Corridor

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Appendix F

Public Involvement Package

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Texas Department of Transportation – Dallas District
Public Involvement Summary

Public Meeting Held at the
First Melissa Baptist Church on
May 15, 2007

State Highway 121
Roadway Reconstruction and Widening
From: SH 5
To: CR 635 (Fannin County Line)
CSJ: 0549-03-018 and 0549-03-021
Collin County, Texas

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Attachments

Attachment A – Sign-In Sheets
Attachment B – Handouts/Displays
Attachment C – Written Comment Forms

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Public Meeting Written Summary
State Highway 121
Roadway Reconstruction and Widening
CSJ: 0549-03-048 and 0549-03-021
Collin County, Texas

District/County:	Dallas District/Collin County
Highway/Limit:	From SH 5 To Fannin County Line (Eastline Road)
Meeting Date:	Tuesday, May 15, 2007 @ 6:00 p.m.
Location:	Melissa Baptist Church 2600 SH 121, Melissa, Texas 75454

Proceedings Summary

On May 15, 2007, a Public Meeting was conducted by the Texas Department of Transportation (TxDOT) in cooperation with Collin County. The purpose of the meeting was to present the proposed roadway improvements to SH (State Highway) 121 from SH 5 to Eastline Road (Fannin County Line). The meeting was held at the Melissa Baptist Church, 2600 SH 121, Melissa, Texas 75454.

The meeting began at 6:00 pm as an open house in the main meeting area of the facility. No general announcements or oral presentation was made. One hundred and thirty three (133) private citizens signed in at the meeting. Eighteen (18) people in attendance were either Texas Department of Transportation employees, elected officials or city employees. Six consulting engineering staff were in attendance. Sign-in sheets are located in **Appendix A**.

Maps, drawings, Right-of-Way Relocation Assistance Booklets, and other information about the project were on display, showing the project location, recommended alternatives, and detailing the need and purpose. Project personnel were available to assist in orientation and interpretation of the drawings and other materials on display and discuss possible mobility and environmental effects of the proposed project.

Handouts/Displays

Comment forms were in both English and Spanish. Preliminary geometric layouts were placed on tables for review by the public. Texas Department of Transportation staff and members of the LAN consultant team were available to answer questions. Nine (9) boards were displayed to depict the project location, typical sections, photos of the existing roadway and depictions of the two types of roadways that are proposed, 4-lane urban and 4-lane rural. These items are located in **Appendix B.**

Proposed Improvements

The limit of the proposed project is from State Highway (SH) 5 in Melissa, Texas to the Fannin County Line. The proposed project is located in the northern portion of Collin County. The highway passes through two incorporated cities, Melissa and Anna and one unincorporated town, Westminster. The proposed improvements include widening the roadway from a two-lane rural highway to a four-lane divided roadway. The proposed project length is 15.1 miles.

The proposed project is to improve traffic mobility, reduce traffic congestion and stimulate economic development. The existing facility would not provide sufficient capacity for the projected growth in the area. Widening and increasing the number of through traffic lanes would improve mobility.

The project would include a four lane divided highway, containing 12-ft travel lanes, 10-ft outside shoulders and a 40-ft grass median. From SH 5 to the future Outer Loop (3,300-ft north of CR 420), the section would be an urban curb-and-gutter section. From the future Outer Loop (3,300-ft north of CR 420) to Eastline Road (Fannin County line), the project would be a rural, four lane divided highway, containing 12-ft travel lanes, 10-ft outside shoulders and a 40-ft grass median and grass-lined ditches. The existing ROW width varies from approximately 120-ft wide to approximately 134-ft wide at stream crossings and roadway intersections. The proposed ROW width varies from 134-ft to 170-ft.

The surrounding terrain is level to gently rolling and contains predominantly rural areas. Approximately 80 percent of the land use within the proposed project is agricultural, either row crop or rangeland. The proposed project crosses 16 jurisdictional waters of the United States (U.S.), which include named waterways, Fitzhugh Branch, Clemons Creek, Stiff Creek, Brinlee Branch, Sister Grove Creek, Pilot Grove Creek, Desert Creek and many unnamed tributaries. No wetlands were detected within the proposed project area.

Notices of the Public Meeting were published in the following major newspapers:

Newspaper Notices

The public meeting notice was printed in the Prosper Press on April 4 and April 18, 2007, in Al Dia (Spanish) on March 30 and April 20, 2007, in the McKinney Courier-Gazette in March 30 and April 19, 2007 and in the Celina Record on March 30 and April 19, 2007.

Summary of Comments from Public

Written Comments Received at Public Meeting

Thirty-One (31) comment forms were received, either at the meeting or through the mail. Comment forms are located in **Appendix C**.

W1 - The planned Road will take 60 feet off the front of my property, which is 3 lots of 1 acre with my house on the centre lot. Currently I am permitted to build 2 houses on each acre lot, this plan will remove that option, will make the 2-1acre lots worthless as they won't be large enough for septic tanks. I will lose all the trees along the front take so long to grow. My privacy will be severely diminished, noise will be up. Even planning this means selling now and getting its value will be impossible. I will be unable to get my mortgage changed, in fact mortgage company will probably veto it. Noise will be a problem. I counsel people in my house and this plan may severely impact my ability to do so in safety and privacy. I bought the property because it was well back from the road. It also will put my cat in danger. At this moment, any plans I have had to do anything on the property are on hold as I don't know what you will end up doing. The garage at front is now on hold too. Maybe I should try to get it zoned commercial and just move. Across the road it just fields and cows are there about once every 2 months 60 feet off that does not reach the trees. Trees in North Dallas are precious.
Marianne Hagen, 10515 Highway 121, Anna, Texas 75409.

Response: *The proposed project would result in a traffic noise impact at several locations along the project 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. None of the above noise abatement measures would be both feasible and reasonable; therefore, no abatement measures are proposed for this project.*

Many alignment alternatives were evaluated including new alignment considerations. The roadway has been studied to minimize ROW takes using an alternative analysis process. Future added capacity is necessary for anticipated future demand on the roadway. The minimum ROW is proposed to accommodate that future demand.

Trees would only be removed as necessary during construction. Minor limb trimming may be required to promote safety during construction. Every effort would be made to preserve trees where they neither compromise safety nor substantially interfere with the project's construction.

W2 – This project appears to take about 150,000 sq ft. of frontage from my property. It also will take about 200 young pecan trees, 400 - plus young cedar trees, and an irrigation

system on each of these pecan trees which are just beginning to bear. I also have ~2500' of pipe fence fronting on this property and a gate opener and a landscaped entrance which would be taken in a 60' widening on the north side of 121. It would appear more logical to take the needed 60' on the south side in this area of 121 and them go to the north side at the are where 424 intersects 121. This would miss the Circle V on the south side and miss several homes on 121 on the north side. There are no houses or major improvements on the south side of 121 from the proposed urban 4 lane until you get to the CR 424 intersection of 121. Then Circle V is on the south side. I request that someone contact me and take a close look at this situation.
Wanda Hamilton, 12223 State Highway 121 N., Anna, Texas 75409.

Response: *Many alignment alternatives were evaluated including new alignment considerations. The roadway has been studied to minimize ROW takes using an alternative analysis process. Future added capacity is necessary for anticipated future demand on the roadway. The minimum ROW is proposed to accommodate that future demand.*

Tree Impacts Trees would only be removed as necessary during construction. Minor limb trimming may be required to promote safety during construction. Every effort would be made to preserve trees where they neither compromise safety nor substantially interfere with the project's construction. More detail concerning the project and additional opportunities to comment would be an essential component of the upcoming Public Hearing for the SH 121 project.

W3 – No curbs on medians. Curb = death.
Richard McComack Jr. (no address provided).

Response: *The urban section, with the use of curb-and-gutter configuration is the optimum configuration in this situation. Future added capacity is necessary for anticipated future demand on the roadway. The minimum ROW is proposed to accommodate that future demand.*

W4 – CR 420 is now CR 1220.
Ellen Hartley, P.O. Box 324, Melissa, Texas 75451.

Response: *Comment noted.*

W5 – Not to interfere with property at all. To pay full value of property. Put back new fence and all trees and not affect a good well and or buy the whole property. 2 house for asking price or not to use my side of the property.
Johnny Turner, 8505 CR 528, Anna, TX 75409 or 1425 San Carlos Dr., Anna, TX 75495; 903-482-6381.

Response: *TxDOT ROW acquisition rules stipulate that adequate time be provided to potential impacted persons. The rules, policies, and procedures for relocating individuals, families, businesses, farms, and nonprofit organizations displaced by TxDOT ROW acquisition including methods for providing relocation services and for making moving and/or replacement housing cost payments are found in the TxDOT Right of Way Manual (Vol. 3-Relocation Assistance, revised September 2007).*

Many alignment alternatives were evaluated including new alignment considerations. The roadway has been studied to minimize ROW takes using an alternative analysis process. Future added capacity is necessary for anticipated future demand on the roadway. The minimum ROW is proposed to accommodate that future demand.

Trees would only be removed as necessary during construction. Minor limb trimming may be required to promote safety during construction. Every effort would be made to preserve trees where they neither compromise safety nor substantially interfere with the project's construction.

Important and essential property features such as water wells and utilities are generally replaced in kind as appropriate when a TxDOT project would impair their intended use.

W6 – Please do NOT make 121 a toll road. The people in our area cannot afford tolls. The commute is already doo expensive. With the rise in gas, an added expense of tolls will create a great hardship for too many.
Cynda Felini, PO Box 638, Westminster, TX 75485 75485;
writerprintcess@yahoo.com; **469-667-6696.**

Response: *Comment noted. At this time there is no plan to make SH 121 a toll road in this area.*

W7 – Please provide final grades and elevations at the intersection of State Hwy 121 and State Hwy 160. Also, provide drainage detail in the area of this intersection.
Jack R. Weston, 15155 SH 160, Blue Ridge, TX 75424; 214-585-3613.

Response: *Comment noted. More detail concerning the project and additional opportunities to comment would be an essential component of the upcoming Public Hearing for the SH 121 project.*

W8 – I would like to know if it is possible to buy a copy of the Collin County GIS map dated 2002 Collin County Thoroughfare (information services) displayed on easel at meeting. P.S. All people explaining right-of-way questions were courteous and very capable – well done!
Charles M. Brazeal, 2705 Creek Crossing Dr., McKinney, TX 75070;
zealllp@aol.com; **214-544-3596**.

Response: *Comment noted. Please contact Collin County Public Works Department at* 972-548-3700 *to inquire about map purchases.*

W9 – What number of deaths occurred in the years prior to the turn lane being put in? Why do you wish to do away with the turn lanes in between the lights? There are a lot of vehicles that utilize it for safer turning without slowing up the traffic.
Vicky McCormack, 2438 SH 121, Melissa, TX 75454; vmccomack@msn.com**; 972-838-2128.**

Response: *Left and right-turn lanes are provided throughout the proposed project are various locations. The existing urban section has a constant left-turn lane. The proposed increase in traffic lanes makes the use of the constant left-turn lane unsafe.*

W10 – Please email me the project information map.
David Cox, PO Box 977, McKinney, TX 75070; dcox@careycoxcompany.com**; 972-562-8003.**

Response: *Comment noted. More detail concerning the project and additional opportunities to comment would be an essential component of the upcoming Public Hearing for the SH 121 project.*

W11 – We really need these printed materials. Happy to pay for them, we own 50 Ac commercial on corner of 121 & FM 545 (Liberty) purchased from Hillwood. Please advise, Thx.
Tim Hughes, 16000 Dallas Pkwy, Ste. 225, Dallas, TX 75248; thughes@falconcompanies.com**; 972-404-8382.**

Response: *Comment noted. More detail concerning the project and additional opportunities to comment would be an essential component of the upcoming Public Hearing for the SH 121 project.*

W12 – Creekside is not currently part of Melissa (unannexed). The creek in recent years has become more active & swift during storms. Your roadway will greatly increase runoff. Please study to see if federal flood planes will rise for 100 yr floods, also check to make sure erosive forces under & down stream are controlled. If those erosive forces will shift flood plains please inform us!
Gary Russell, 5380 Creekside, Melissa, TX 75454; 214-882-7660.

Response: *According to the FEMA Flood Insurance Rate Map (FIRM) (Flood Hazard Boundary Map Community Panel Nos. 48085C0175G, 48085C0200G, 48085C0100G, revised January 19, 1996), the proposed project would cross Zone A (the approximate*

100-year flood plain boundary). However, no base flood elevation or flood hazard factors have been determined. The hydraulic design practices for this project would be in accordance with current TxDOT design policy and standards. The highway facility would permit conveyance of the design-year flood levels, inundation of the roadway being acceptable, without causing substantial damage to the highway, stream or other property. Collin County is a participant in the National Flood Insurance Program (NFIP). The City of Melissa is not a participant in the NFIP. The proposed project would not increase the base flood elevation to a level that would violate the applicable floodplain regulations or ordinances, therefore, no coordination with either the FEMA or the local floodplain administrator would be required.

W13 – Widening needs to start sooner than 2017. Also at 581 where our property is located, County is widening & paving road. The state part of that road is to narrow & a hazard. We can't make turn if car is coming to a stop sign with our long trailer and truck. Your access road is too narrow.
Bucky Buckley, 13730 CR 577, Anna, TX 75409; 972-924-2611.

Response: *Many alignment alternatives were evaluated including new alignment considerations. The roadway has been studied to minimize ROW takes using an alternative analysis process. Future added capacity is necessary for anticipated future demand on the roadway. The minimum ROW is proposed to accommodate that future demand.*

W14 - When does the road have to be 450' wide?
Albert Womack, 11247 CR 507, Anna, TX 75409; 972-924-2214.

Response: *The minimum ROW is proposed to accommodate that future demand. Many alignment alternatives were evaluated including new alignment considerations. The roadway has been studied to minimize ROW takes using an alternative analysis process.*

Future added capacity is necessary for anticipated future demand on the roadway. From TxDOT Design Manual: "In rural areas, median sections are normally wider than in urban areas. For multi-lane rural highways without access control, a median width of 76 ft [22.8 m] is desirable to provide complete shelter for trucks at median openings (crossovers). These wide, depressed medians are also effective in reducing headlight glare and providing a horizontal clearance for run-off-the-road vehicle encroachments."

W15 – Regarding property at 121/SH 5/ Fannin Rd.: Please protect 1) Small well at 121/Fannin (NW Corner – 1305 McKinney St.). 2) Deep (woodbone) well at house just north of the Beverage store. 3) Stock pond behind house on N. McKinney Street (1309 McKinney St.). Pros: 1) Light at 121/Fannin and 121/SH5. 2) Improved corner @ 1305 McKinney St. site. Anti: toll road. Regarding property at 121/McDonald St./Hwy 5 split at Fannin Rd.: Pros: 1)Leaving crossover in front of the Beverage store (1305 McKinney

St.) in addition to light at Fannin Rd. and Hwy. 5 south. . This crossover is extremely helpful moving farm machinery across Hwy 5 to 121. Anti: light at new intersection where we have to make stop to turn left onto Hwy 5 and on NB side as well. Note: small well at back of house at 1309 McKinney St. (in addition to 2 other wells seated on another comment form).
Diane Miller, PO Box 126, Melissa, TX 75454; parrishill@att.net**; 972-838-2388.**

Response: *Important and essential property features such as water wells and utilities are generally replaced in kind as appropriate when a TxDOT project would impair their intended use. Many alignment alternatives were evaluated including new alignment considerations. The roadway has been studied to minimize ROW takes using an alternative analysis process. Future added capacity is necessary for anticipated future demand on the roadway. The minimum ROW is proposed to accommodate that future demand. More detail concerning the project and additional opportunities to comment would be an essential component of the upcoming Public Hearing for the SH 121 project.*

W16 - Glad you are moving forward aggressively. I am partner of Melissa Liberty I-II. We own 50 acres from FM 545 to Liberty Dr. on north side of 121. Currently Washington Dr. is proposed to split our TR into 2 parcels and T into 121. It is imperative you address traffic access off 121 onto Washington from both directions. We will be severely affected by only accessing our development from 545 or Liberty or R in R out only from WB 121. We are planning retail, commercial project and delivery trucks will also be an issue. Navigating the side; please call me to review our present conditions in more detail.
Tim Hughes, 16000 Dallas Pkwy, Ste. 225, Dallas, TX 75248;
thughes@falconcompanies.com**; 972-404-8382.**

Response: *More detail concerning the project and additional opportunities to comment would be an essential component of the upcoming Public Hearing for the SH 121 project. Many alignment alternatives were evaluated including new alignment considerations. The roadway has been studied to minimize ROW takes using an alternative analysis process. Future added capacity is necessary for anticipated future demand on the roadway. The minimum ROW is proposed to accommodate that future demand.*

W17 – Strongly oppose the 455 interchange! The feeder roads are too far out - Too much land is eaten up at the 455-121 intersection –bridge - feeder roads. The two sections of 455 need to be re-joined together. Cheaper - (bridge cost)- is not the best way always.
Martha Jo Soule, PO Box 1263, Alma, TX 75409; mjsoule@dfwair.net**; 972-924-2411.**

Response: *FM 455 was modified as a result of the May 2007 public meeting. Alternatives were analyzed and developed that removed the circular ramp configurations and frontage roads. Improvements were made to the overall geometry of the intersection* 10 *to minimize the ROW requirements as well as accommodate the increasing traffic volumes.*

W18 – It appears that our restaurant, The Circle V, will basically be unaffected by the widening of S.H. 121; however, it is imperative that we have a cross- over or turn lane(s) to provide access to our restaurant. We discussed this with Mayor Kenneth Pelham, who mentioned a median cut to provide this access. Anything less would mean certain failure for our family business. Thank you for your consideration.
Mary Valverde, 12546 S.H. 121 N., Anna, TX 75409; 972-924-2202.

Response: *The restaurant is currently located very near the ROW line, making improvements that do not impact the restaurant is not feasible or practicable. Many alternatives were considered with goal to minimize impact and the least impacting alternative was selected. More detail concerning the project and additional opportunities to comment would be an essential component of the upcoming Public Hearing for the SH 121 project.*

W19 – My main concern is the corner clip on the northwest corner of intersection of Hwy 121 & Berry Rd. The proposed ROW will take most of my driveway for employee and customer parking. A 12" water main will have to be relocated at CR 507 going west the intersections. I will have water lines affected. All four corners of Hwy 121 & Berry Rd, I have lines & valves & meters. Some of the waterlines on the drawings are not correct. I will be glad to go over them with someone.
Allen Knight, North Collin Water Supply, PO Box 343, Melissa, TX 75454; aknight@northcollinwsc.com**; 972-837-2331 or 214-212-9308 cell**

Response: *More detail concerning the project and additional opportunities to comment would be an essential component of the upcoming Public Hearing for the SH 121 project.*

W20 – Please consider the planting of many trees upon completion of the project. Not only would it be good for the environment, it is also eye pleasing (pretty). Thank you! Please seriously consider this request if not already approved.
Gregg Farlow, 2611 Katie Trail, Melissa, TX 75454; gafarlow@yahoo.com**; 214-773-4133.**

Response: *Comment noted.*

W21 – Intersection at 121 and 455 is 200' too wide. **Do not use loops!! Use standard on & off ramps. This will be less costly to State and surface owner will be happier.
Steve Soule, PO Box 1263, Anna, TX 75409; 972-924-2411.

Response: *FM 455 was modified as a result of the May 2007 public meeting. Alternatives were analyzed and developed that removed the circular ramp configurations and frontage roads. Improvements were made to the overall geometry of the intersection*

to minimize the ROW requirements as well as accommodate the increasing traffic volumes.

W22 – Why would you curb anything? It will all change before you can even begin to maintain it. The intersection at 455/121/475 seems too expensive. Most of the spaces are too large. The intersection could be lined up better with 455 & 475.
Bob West, 7586 E FM 455, Anna, TX 75409; 214-676-3025.

Response: *Future added capacity is necessary for anticipated future demand on the roadway. The minimum ROW is proposed to accommodate that future demand. The urban section, with the use of curb-and-gutter configuration is the optimum configuration in this situation.*

FM 455 was modified as a result of the May 2007 public meeting. Alternatives were analyzed and developed that removed the circular ramp configurations and frontage roads. Improvements were made to the overall geometry of the intersection to minimize the ROW requirements as well as accommodate the increasing traffic volumes.

W23 - Barry Rd. Intersection – Your easement on the east side seem excessive. It is taking up Kims Corner & the Sonic. At Kims there is plenty of space & there is gas tanks underground & it looks like you are taking too much real estate. Kims has been here for a long time and is a fixture here. I think you need to take this into consideration.
Jerry Conklin, 16 Brookhollow; 214-801-1393.

Response: *Many alignment alternatives were evaluated including new alignment considerations. The roadway has been studied to minimize ROW takes using an alternative analysis process. Future added capacity is necessary for anticipated future demand on the roadway. The minimum ROW is proposed to accommodate that future demand. More detail concerning the project and additional opportunities to comment would be an essential component of the upcoming Public Hearing for the SH 121 project. There would be four commercial displacements and eight residential displacements associated with the proposed project. TxDOT offers relocation assistance to all individuals, families, businesses, farmers, ranchers and nonprofit organizations displaced as a result of a State highway or other transportation project. No displaced residence shall be required to move permanently from his or her residence until at least one comparable replacement dwelling is made available to the person. The specific relocation sites of the displacees would not be known until TxDOT initiates the ROW acquisition process which cannot occur until FHWA approval of the project's environmental document and completion of the public involvement process.*

W24 – I hope you will establish a project website where project updates are posted. It would also be nice if rural property owners were given the opportunity to pay for left turn access into their property.
Kurt Zimmerman; kurt.zimmermann@verizon.net**; 972-423-8786.**

Response: *Comment noted.*

W25 – Median would be better several with turning lanes for access to properties within the area. Concrete, not asphalt , not grass.
Debra Lee Molaison Darnell, 15837 SH 121 N. Blue Ridge, TX 75424; 972-548-4040, 972-658-4461, 972-658-6108 (David).

Response: *Left and right-turn lanes are provided throughout the proposed project are various locations. The existing urban section has a constant left-turn lane. The proposed increase in traffic lanes makes the use of the constant left-turn lane unsafe.*

W26 – No curbs on road. Dangerous for flip overs in accident.
Rick Dulit, no address.

Response: *Future added capacity is necessary for anticipated future demand on the roadway. The minimum ROW is proposed to accommodate that future demand. The urban section, with the use of curb-and-gutter configuration is the optimum configuration in this situation.*

W27 – We are concerned about the area 455 North to county road 507. We understand the need for feeder roads due to the dangerous intersection of 455 & 121, but why do you need the additional area between the new highway and the feeder roads? It seems you could tighten up the right a way and still address the safety issues. How will you handle the intersection of CR 507 and 121? Will it be a red light, stop sign, or what?
Alan Walters, Anna School Board, 11248 CR 507, Anna, TX 75409; 972-924-2445.

Response: *FM 455 was modified as a result of the May 2007 public meeting. Alternatives were analyzed and developed that removed the circular ramp configurations and frontage roads. Improvements were made to the overall geometry of the intersection to minimize the ROW requirements as well as accommodate the increasing traffic volumes. More detail concerning the project and additional opportunities to comment would be an essential component of the upcoming Public Hearing for the SH 121 project.*

From TxDOT Design Manual: "In rural areas, median sections are normally wider than in urban areas. For multi-lane rural highways without access control, a median width of 76 ft [22.8 m] is desirable to provide complete shelter for trucks at median openings (crossovers). These wide, depressed medians are also effective in reducing headlight glare and providing a horizontal clearance for run-off-the-road vehicle encroachments."

The intersection of CR507 and 121 is proposed to have a two-way stop sign. If additional traffic or safety concerns develop, the area will be re-assessed for additional improvements.

W28 – 455 & 121 needs to be re drawn. Intersection is too large, too wide, too complex. Need to be redesigned to reconnect both 455's.
Saundra Griffin, WKG Enterprise, 5864 E GM 455, Anna, TX 75409; 972-924-3749.

Response: *FM 455 was modified as a result of the May 2007 public meeting. Alternatives were analyzed and developed that removed the circular ramp configurations and frontage roads. Improvements were made to the overall geometry of the intersection to minimize the ROW requirements as well as accommodate the increasing traffic volumes.*

W29 - Concerned about noise levels at FM 455 as 121 crosses Sister Grove Creek. Even today, noise from 121 can be heard in Wild Rose Farms. More lanes with more traffic will only generate more noise. Some sort of wall may be needed there.
Keith Simpson, 11465 Wild Rose Lane, Anna, TX; keith@ksimpson.org**; 972-924-2597.**

Response: *The proposed project would result in a traffic noise impact at several locations along the project 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. None of the above noise abatement measures would be both feasible and reasonable; therefore, no abatement measures are proposed for this project.*

W30 – Use a road surface material that is less noisy than the current "new & improved" surface that was used most recently (the old surface was much quietcr). Intersection at 455 & 121 is much too elaborate. This is not a major intersection. The current design uses too much land. The higher road elevation will mean more noise as well. There needs to be more coordination between these major projects (e.g., outer loop). I don't care if they're being managed by different people; they need to work together ultimately.
Kelly Simpson, 11465 Wild Rose Lane, Anna, TX 75409; 972-924-2597.

Response: *The proposed project would result in a traffic noise impact at several locations along the project 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. None of the above noise abatement measures would be both feasible and reasonable; therefore, no abatement measures are proposed for this project.

FM 455 was modified as a result of the May 2007 public meeting. Alternatives were analyzed and developed that removed the circular ramp configurations and frontage roads. Improvements were made to the overall geometry of the intersection to minimize the ROW requirements as well as accommodate the increasing traffic volumes.

The major developments planned within the project area and Collin County are continuing to become more urbanized. Local planning goals for the City of Melissa are to have more commercial development along SH 121 and this corridor continues to serve as the primary commercial area. The proposed project would improve traffic mobility, reduce traffic congestion and stimulate economic development.

W31 - I own Kims Korner at the corner of 121 & Berry Rd. We are a single store family operation that has been in Melissa since 1983. The proposed right-of-way for the right turn lane at that intersection will take both of my high-rise signs, my underground fuel tanks, my diesel island, part of our regular gas island/canopy, and all of our vacuum at our car wash. Obviously, this would be devastating to our business and could put us out of business. I would appreciate someone calling me to discuss options & possible solutions. Thank you for your time & help.
Kevin Slaughter, 2837 Acton Place, Birmingham, AL 35243; 205-969-2065.

Response: *Many alignment alternatives were evaluated including new alignment considerations. The roadway has been studied to minimize ROW takes using an alternative analysis process. Future added capacity is necessary for anticipated future demand on the roadway. The minimum ROW is proposed to accommodate that future demand.*

TxDOT ROW acquisition rules stipulate that adequate time be provided to potential impacted persons. The rules, policies, and procedures for relocating individuals, families, businesses, farms, and nonprofit organizations displaced by TxDOT ROW acquisition including methods for providing relocation services and for making moving and/or replacement housing cost payments are found in the TxDOT Right of Way Manual (Vol. 3-Relocation Assistance, revised September 2007).

There would be four commercial displacements and eight residential displacements associated with the proposed project. TxDOT offers relocation assistance to all individuals, families, businesses, farmers, ranchers and nonprofit organizations

displaced as a result of a State highway or other transportation project. No displaced residence shall be required to move permanently from his or her residence until at least one comparable replacement dwelling is made available to the person. The specific relocation sites of the displaces would not be known until TxDOT initiates the ROW acquisition process which cannot occur until FHWA approval of the project's environmental document and completion of the public involvement process. More detail concerning the project and additional opportunities to comment would be an essential component of the upcoming Public Hearing for the SH 121 project.

Recommendations

TxDOT has thoroughly analyzed all verbal and written comments received from the public. The project should continue to proceed forward for further development.

NOTE: This document is to serve only as a summary to the Public Meeting Proceedings and TxDOT Responses given to the public's inquiry. Please see the attached written comment forms for a more detailed version.

APPENDIX A

SIGN IN SHEETS

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SH 121 PUBLIC MEETING
From SH 5 to Fannin County
First Melissa Baptist Church
May 15, 2007

Elected Position or Agency you Represent	Name	Mailing Address	Phone #	Email
	HUGH HURST	2070 CR 367 MELISSA	972-	837-1004
Melissa VFD	David Wright	901 SH 121 Melissa	972-	837-1268
	Lynda Wright	1117 Secretary Ridge Dr Anna TX 75013	972-	375-2654
	Louis Lautzenheiser	1164 Yellow Bridge Van Alstyne	972	716-9011

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SH 121 PUBLIC MEETING
From SH 5 to Fannin County
First Melissa Baptist Church
May 15, 2007

Elected Position or Agency you Represent	Name	Mailing Address	Phone #	Email
	BRUCE GEORGI	295 SALMAN LAKE DR.	214-924-7573	bbgeorgi@yahoo.com
TXDOT	Stan Hall	TXDOT - DALLAS	2-320-6155	shall@dot.state.tx.us
	DOUG BRUMMETT	15966 Hwy 121 N. Blue Ridge	214) 733-7271	dmbrummett@earthlink.net
	Gary Hughes	8145 FM 2862 Anna	972 924 2239	
	Sandy Jacob	PO Box 118886 Carl. Tx 75011	214 770-2572	——
	[illegible]	9262 CR 419 Anna, TX 75409	972 837-2489	
	Robert IVEY	402 FISHERMAN TRL MELISSA	972 837-1125	
	Robyn Root	PO Box 517 McKinney, TX 75070	972-547-7425	rroot@mckinneytexas.org
	Maria G. Cisneros	5307 Creekside Melissa, Tx 75454	(972) 837-2041	
	~~Derek Johnson~~			
	North Texas Tool	15211 State Hwy 121 Anna	972-752-5705	
	Mary Valverde	STATE HWY 121 ANNA	972-9242202	
	STEVE SOULE	P.O. Box 1263, ANNA, TX. 75409	972-924-2411	
	Carol Bell	P.O BOX 302 Blue Ridge		
	Andy Bell	PO Box 302 Blue Ridge		
	Alan Walters	11248 CR 507 Anna TX	972-924-2445	AlanWalters@Gamestop.com
	Becky Settje	4965 Brook Lane, Anna TX	972 924-3577	settjetexas@dfwair.net

Texas Department of Transportation

SH 121 PUBLIC MEETING
From SH 5 to Fannin County
First Melissa Baptist Church
May 15, 2007

Elected Position or Agency you Represent	Name	Mailing Address	Phone #	Email
	Betty & LARRY DONALDSON	14702 DONALDSON DR ANNA, TX 75409	972-752-4520	bdonaldsonc@aol.com
	DAVID COX	PO BOX 977 WILLINNEY TX 75070	9725628007 ~~FAX~~	
	Fred Lewis	2040 Spanish Oak Tel.	972-632-6179	FL12004@msn.com
	Martha Drexel Henry Drexel	1011 Coleman McKinney 75069	972-547-9408	
	Kevin Slaughter	PO BOX 8 Melissa, TX 75454	972-837-2422	
	DAN Boone	8428 CR 527 ANNA TEX 75409	9725242235	
	BRAD HUNSTABLE	5430 LBJ FWY, DALLAS TX 75240	972-201-2935	
	Bently Powell	P.O. Box 2408 Wylie Tx 75098	972-442-5405	North Texas Municipal Water
	KEVIN SPAETH	510 Hilltop Anna, TX 75409	214-205-3214	kevins.ccac@ymcadallas.org
	TIM HUGHES	16000 DALLAS Pkwy ste 222 DB 75248	9724048382	thughes@falconcompanies.com
	Martha JoSoule	PO BOX 1263, Anna, TX 75409	972-924-2411	mjsoule@dfwair.net
	David Darnell	15837 St Hwy 121N	9726584461	Darnell@Dar160.com
	Debbie Darnell	15837 St. Hwy 121N	9726586108	Debbie.Darnell@FB01.com
	SHAWN BHAGAT	2415 W. NORTHWEST HWY, #105 DALLAS, TX 75220	214 350-0453	Sbhagat105@AOL.com

Texas Department of Transportation

SH 121 PUBLIC MEETING
From SH 5 to Fannin County
First Melissa Baptist Church
May 15, 2007

Elected Position or Agency you Represent	Name	Mailing Address	Phone #	Email
	Joe Kelley	14668 Hwy 121 N. Anna Tx 75409	972-752-5471	Kelley@1SP.com
	Rich Larkins	221 N Tennessee McKinney TX 75070	972-547-7438	rlarkins@mckinneytx.org
	D.J Womack	11247 County Road 507 Anna Tx 75409-8800	972 924-2214	AE or DJWomack@msn.com
	Don Rudd	4125 Holbrook Paris, Tx 75462	903-784-3161	DRudd@suddenlink.net
	Melanie Russell	5380 Creekside Rd, 75459	9728372365	
	Debbie Messenger	14755 CR 525 Anna 75409	972.924.2271	
	Sterling Bartlett	16038 Hwy 121 Blue Ridge	469 396814	
	Becky Airhart-Smith	7172 Old Valdosta Rd. Blue Ridge, TX	972-752-5041	bas-hss@msn.com
	Frances Airhart	7295 CR 506 Blue Ridge, TX	972-752-5041	———
	Kelly Simpson	11465 Wild Rose Ln Anna, TX	972-924-2597	Kelly@Simpsonhome.net
	Kelley Burgess	11758 CR509 Anna TX 75409	972-924-4254	kelley_burgess@hotmail.com
	RANDY KAISER	1614 CRANBERRY DR MELISSA TX	214.704.2491	RKAISER@CITYOFMELISSA.COM
	Kurt Zimmerman	4004 Valdez Ct Plano, TX 75074	972.423.8786	kurt.zimmermann@verizon.net

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SH 121 PUBLIC MEETING
From SH 5 to Fannin County
First Melissa Baptist Church
May 15, 2007

Elected Position or Agency you Represent	Name	Mailing Address	Phone #	Email
	Becky Quinn	5396 Fm 545 Melissa	(9)837-4144	mequinn@flash.net bquinn@flash.net
	Jerry Conklin	16 Brookhollow	214-801-139?	JConklin@rexar.net
	Ken Brantley	6725 Lakeshore Dr Dallas 75214	2148265853	KXBrad70@txglobal.net
	Diane Miller	POBox 126, Melissa Tx 75454	972-564-7982 972-838-2388	ParrisHill@att.net
	DAN TROTT	1619 Gravelberry Dr., MELISS	9/838-4300	dtrott@cityofmelissa.com
	Rudy Priebe	39 Country Ridge Mel	9/838 2907	
	Becky Buckley	13730 CR577 ANNA 75409	972 924-2611	
	Susan Wright	6911 FM 2933 Melissa TX 75454		
	Saundra Huffman	5864 E FM 455 Anna, TX	972-924-3149	
	ROBERT WEST	7586 E FM 455 ANNA, TX	214 676-3015	rlawest@sbcglobal.net
	Doug Gillespie	7600 Sunset Lane ANNA TX		
	Otis Dedrick	330 Cambridge dr. Fairview	4699669725	
	Dwain Gnus	3840 CAROLD LANE MELISSA	9728574227	DWAIN@CAROLD.COM
	Keith Simpson	11465 Wild Rose Lane, Anna	972-924-2597	Keith@KSimpson.org
	Karen Walters	11248 CR 507 Anna, Tx 75409	972-924-2445	

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SH 121 PUBLIC MEETING
From SH 5 to Fannin County
First Melissa Baptist Church
May 15, 2007

Elected Position or Agency you Represent	Name	Mailing Address	Phone #	Email
	[illegible]	717 Finch McKinney	214-707-8557	[illegible]
	Mike Jones	2503 Lee McKinney	972-569-7727	michaelJones@eBBY.com
	Michelle Wickliffe	9747 S.H. 121 N. Anna	972 838 2595	mwickliffe@hotmail.com
	Rick DeVito	3819 Wolf Creek Ln	469 328 0078	RIX76D@AOL
	Bob Walner	1812 Lakeshore Ct	214-726-0830	walner2@tx.rr.com
	Tamara Kinney	1171 CR 4140 Bonham	903-[illegible]-5874	tamara@gateway homebuilders.com
	John Tauch	2704 Loftsmoor Ln	972-359-7008	Jtauch@dallas.isd
	Bill Reynolds	2502 Dewberry Ct Melissa	972 837 9146	
	Larry Simmons	3819 Pleasant Run	214-803-4882	LARRYSIMMONSC21@HUGES.NET
	Gregg Farlow	2611 Katie Trail	214-773-4133	gafarlow@yahoo.com
	Bobbi Hoenigman	PO Box 342 Melissa TX	972-[illegible]-2645	bobbi@allpoints-travel.com
	Rick Hoenigman	" " " " "	" " " "	
	James & Judy Sterling	8711 CR 513 Anna, TX 75409	972 924 4531	
	B + S. Ivey	402 Fisherman Tr. Melissa	972-8371125	
	Rustin Stewart	220 N. Tennessee McKinney	972-547-7500	rstewart@mckinneytexas.org
	Jim Hargis	2138 Calhar Dr. Melissa TX	214-325-1821	Jim@calhar.com

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SH 121 PUBLIC MEETING
From SH 5 to Fannin County
First Melissa Baptist Church
May 15, 2007

Elected Position or Agency you Represent	Name	Mailing Address	Phone #	Email
Collin County Commissioner	Joe Jaynes	210 S. McDonald St., #626, McKinney Texas, 75069	817-548 4631	jjaynes@co.collin.tx.us
	Albert C. Womack	1247 CR 507 Anna TX 75409	9729242214	
	Sabrina Cain	4600 Greenville Ave #200 Dls 75206	214-691-6216	scain@hwell.com
	Marianne Hagen	10575 Highway 121. 75409	9729244455	
	Kyra Huddleston	3204 Hamilton Melissa 75454	972 838 9861	
	Gary Russell	5380 Creekside Melissa Tx	972 837 2365	Indelibleimages@yahoo.com
	Vicki McCormack	2438 State Hwy 121 Melissa tx	972-838-2188	Vmccomack@msn.com
	Dee Gentry	10280 Hwy 121N Anna, Tx	972-924-8162	DGENTRYM@aol.com
	Aletta Baxter	120 C.R 343, Melissa Tx	972 838-4370	
	Carolyn Gidney	9675 S.H. 121 Anna 75409	972-837-4538	
	Ramsey Gidney	9675 S-H. 121 Anna 75409	" " "	
	John + Kim Tauch	8756 CR 508 Anna TX 75409	214 641 1804	Kimtauch@tx.rr.com
	Wanda Hamilton	12223 St Hwy 121 N., Anna 75409	972-924-2419	wanda_h26@yahoo.com
	Aaron + Lisa Walker	1627 Eastwood Rd. Melissa Tx	972-837-2634	
	Johnny Turner	8505 CR 528 Anna TEX	903-482-6381	
	Candi Hughes	8145 Fm 2862 Anna 75409	972-924-2239	Candi.Hughes@COR.gov
	[illegible signature]	14821 Hwy 121 N Anna		rdmays@earthlink.net

Texas Department of Transportation

SH 121 PUBLIC MEETING
From SH 5 to Fannin County
First Melissa Baptist Church
May 15, 2007

Elected Position or Agency you Represent	Name	Mailing Address	Phone #	Email
	CHARLES M BRAZEAL	2705 CREEK CROSSING DR McKINNEY 75070	214 544 3596	ZEALLLP@aol.com
	Ed Bartlett	840 Bartlett Rd Melissa 75454	972-838-2506	——
	MARK WALLIS	2801 Berry View Ct Melissa 75454	9837-4604	markwallis@sbcglobal.net
	Andy Anderson	P.O. Box 696 WESTMINSTER, TX 75485	972-752-9985	AndyA@dfwAir.net
	ALLEN KNIGHT	P.O. Box 343 MELISSA, TX 75454	972-837-2331	AKNIGHT@NORTHCOLLINSC.COM
City of Anna	Kenny Jenks	PO Box 776 Anna 75409	972-924-3325	KJENKS@annatexas.GOV
City of Anna	Kenneth Pelham	PO Box 776 Anna 75409	"	mayorofanna@annatexas.GOV
	JACK WESTON	15155 SH 160 Blue Ridge 75424	214-585-3613	jweston@MCKINNEYTEXAS.ORG
City of Melissa	Sharon Weideman	4 Shady Bend Dr 75454	214 9240224	Sweideman@cityofmelissa.com
	Ellen Hartley	P.O. Box 324 Melissa 75454	972-837-2826	ehartley@att.net
	GARY HARTLEY	✓ ✓	✓	✓
	C.E. Wilson	9510 CR 582 ANNA, TX	972-752-5624	
	James Brown			
	Sam Luscombe	Box 427 ANNA TX 75409	972-837-4423	SURVEYSAM@MSN.COM
	Sandy Card	POB 63 Melissa TX 75454	9728372847	
	CHARLES E CARD	PO BOX 63 MELISSA TX 75454	972 837 2847	
	Mike Justice	Melissa	972-907-1111	

Texas Department of Transportation©

SH 121 PUBLIC MEETING
From SH 5 to Fannin County
First Melissa Baptist Church
May 15, 2007

Elected Position or Agency you Represent	Name	Mailing Address	Phone #	Email
Collin County Commissioner	Joe Jaynes	210 S. McDonald St., #626, McKinney Texas, 75069	817-548 4631	jjaynes@co.collin.tx.us
	W6 Meredith	PO Box 831424	214-532-6287	—
	[illegible] Winkle	4005 [illegible] McKinney, Tx 75069	214-544-2856	WAWinkle@swbell.net
	Robert Cantwell	10515 HIGHWAY 121	972 924 4455	
	Carol [illegible]			
	[illegible] Cline	2523 Quail R. Dr. Melissa Tx 75454	978.838.9283	
	Cynda Felini	PO Box 635, Westminster 7985 FM 2862 TX 75485		
	Michael Felini	" " "		
	[illegible]	1164 Yello Bud. [illegible]	903 364 2695	
	BARBARA GIBSON	P.O. Box 3522, McKinney, Tx 75070	972 752-9196	barbara.gibson@blockbuster.com
	Richard McDonald	2438 SH HWY 121 N MELISSA TX 75454	972 838 2128	FishPaw@Hotmail.com
	[illegible]	21 Country [illegible] Melissa 75454	214/551-0794	
	Marge Dunn	P.O. BOX 409 Melissa 75454	9/838 2010	
	Tina Helmbergen	15 Brookhollow Cir. Melissa, Tx	972-569-0615	info@lonestarpartybarn.com
	JEFF DALE	3502 SH 121	9838 4100	
	ROY DALE	3502 SH 121	9838 4100	
	Jim Luscombe	1320 CR 366	838-2321	

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APPENDIX B

HANDOUTS/DISPLAYS

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SH 121 Public Meeting
From SH 5 to the
Collin County Line
First Melissa Baptist Church
May 15,2007

Open House 6pm-7pm

The Texas Department of Transportation (TxDOT), in cooperation with Collin County, will conduct a Public Meeting for the purpose of soliciting public comments on the proposed improvements to State Highway (SH) 121 from SH 5 in the City of Melissa to East Line Road on the Collin County line. The corridor is approximately 14 miles in length. The roadway would be modified to meet current TxDOT design standards. The roadway is proposed to be improved by widening the existing two-lane roadway to a four-lane facility as follows:

a. From SH 5 to the planned Outer Loop (approximately one half mile northeast of County Road 420), four 12-foot wide travel lanes with curb and gutter and a raised 40-foot wide median is proposed.
b. From the Outer Loop to Collin County Line (East Line Road), four 12-foot wide travel lanes, 10-foot outside shoulders, and a 48-foot wide median with grass-lined drainage ditches is proposed.

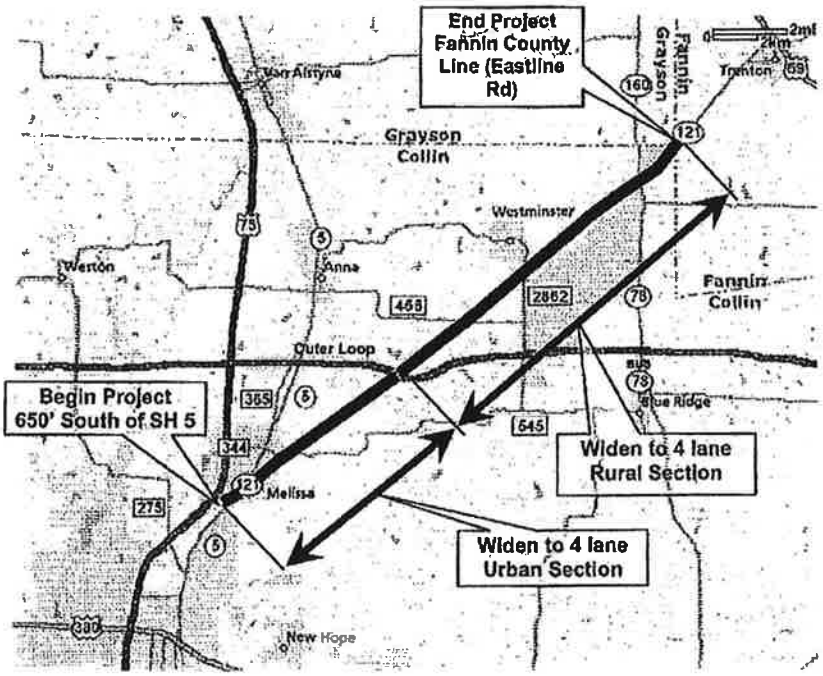
Maps, drawings, and other information about the project on display at this meeting allow interested persons to learn more about the proposed project. Project personnel are available to assist in orientation and interpretation of the drawings and other material on hand, and discuss possible mobility and environmental effects of the proposed project.

All interested persons are invited to express their views on this proposed project. Written comments may be submitted in person via the comment forms available here, or by mail to:

Lockwood, Andrews & Newnam, Inc.
Attention: Joe Atwood, PE
1320 S. University Drive, Suite 450
Fort Worth, TX 76107

SH 121 Public Meeting
From SH 5 to the
Collin County Line
First Melissa Baptist Church
May 15,2007

Project Location Map (not to scale):



Project Information

Preliminary Projected Construction Cost: $90M

Construction after 2012

Collin County and TxDOT working on an accelerated schedule

Texas Department of Transportation

SH 121 PUBLIC MEETING
From SH 5 to Fannin County
First Melissa Baptist Church
May 15, 2007

Elected Position or Agency you Represent	Name	Mailing Address	Phone #	Email
Collin County Commissioner	Joe Jaynes	210 S. McDonald St., #626, McKinney Texas, 75069	817-548 4631	jjaynes@co.collin.tx.us

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PUBLIC INPUT

Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: _____ Phone:_____

Elected Position (if applicable)_____

Mailing Address & email

_____

_____

Comments

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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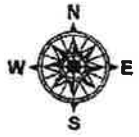
Texas Department of Transportation

TEXAS 121

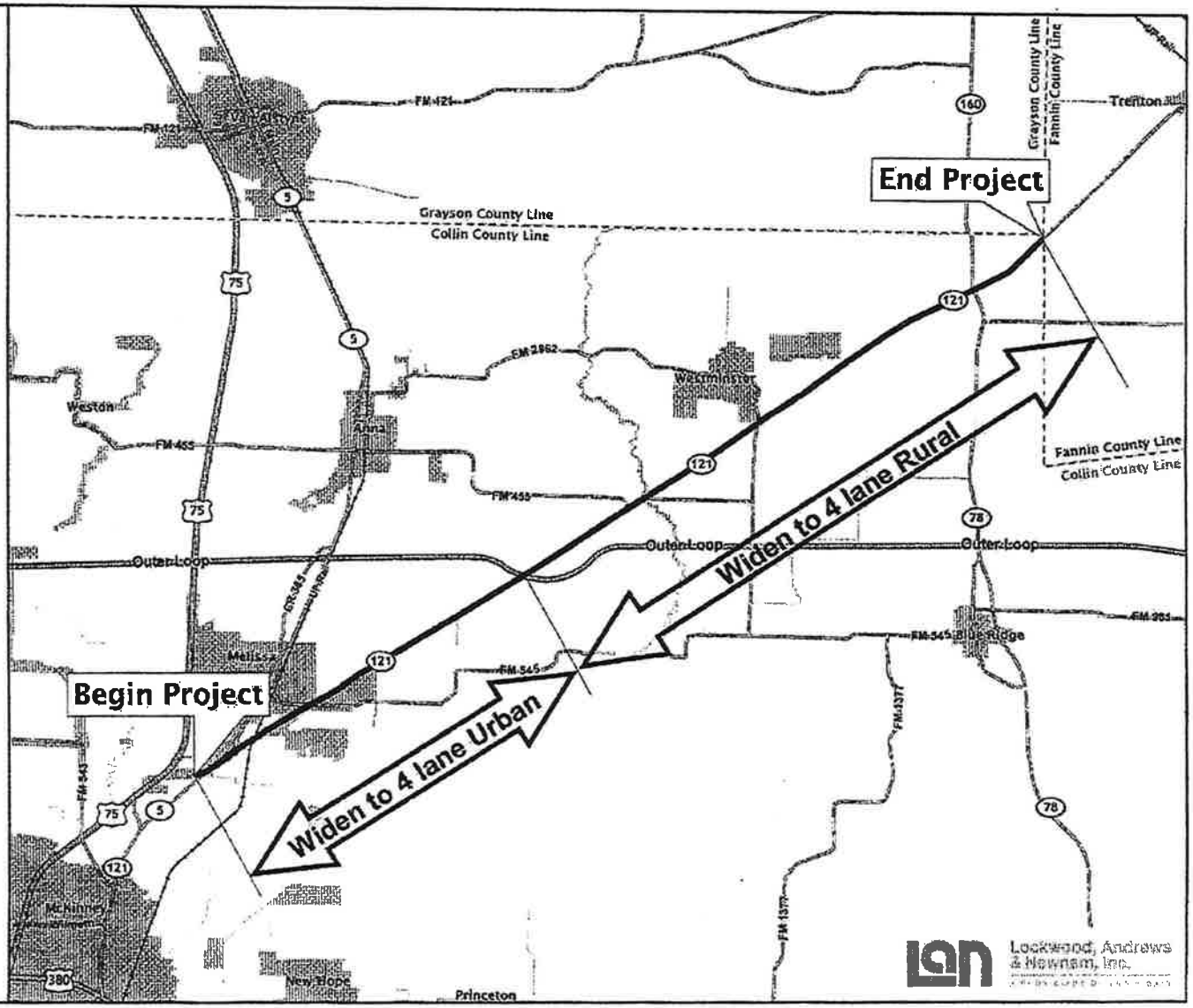
Project Information Map

From 650' South of SH 5 to Fannin County Line (Eastline Rd)



SH 121 Project Limits

- $90 M Construction Cost
- Construction after 2012
- Collin County and TxDOT Working on Accelerated Schedule

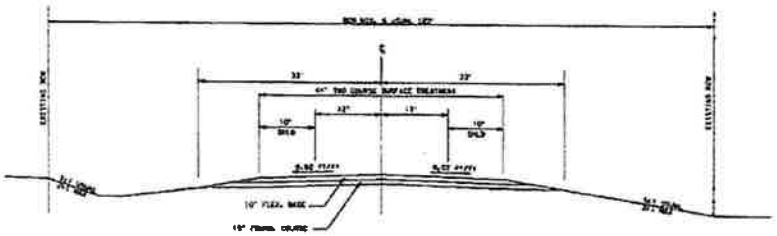


PROPOSED ROAD SECTIONS

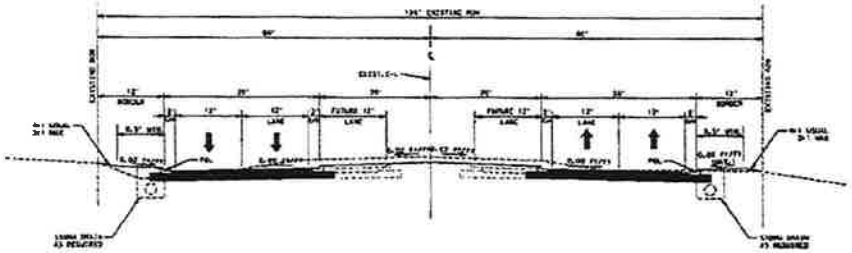
- 4 LANE URBAN

- MAY WIDEN TO 6 LANES
- UNDERGROUND STORM DRAINS
- FROM SH 5 TO OUTER LOOP
- 45 MPH

EXISTING SECTION



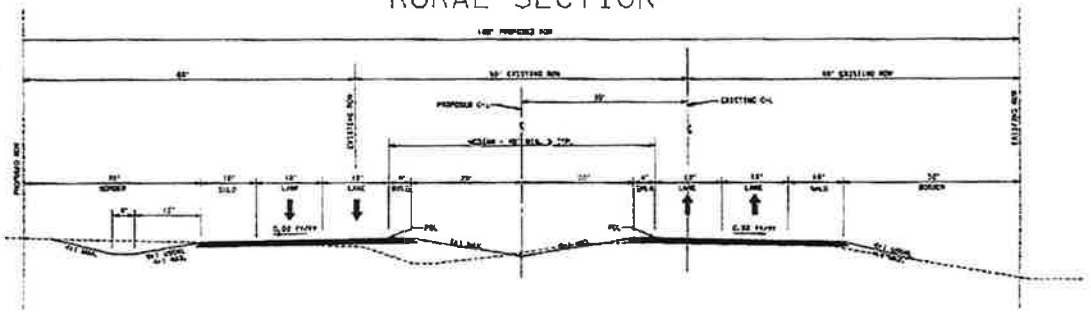
URBAN SECTION



- 4 LANE RURAL

- 48' MEDIAN
- 60' ADDITIONAL ROW
- FROM OUTER LOOP TO EASTLINE ROAD
- 70 MPH

RURAL SECTION



Texas Department of Transportation

Lockwood, Andrews & Newnam, Inc.
A LEO A. DALY COMPANY

Texas Department of Transportation

TEXAS 121

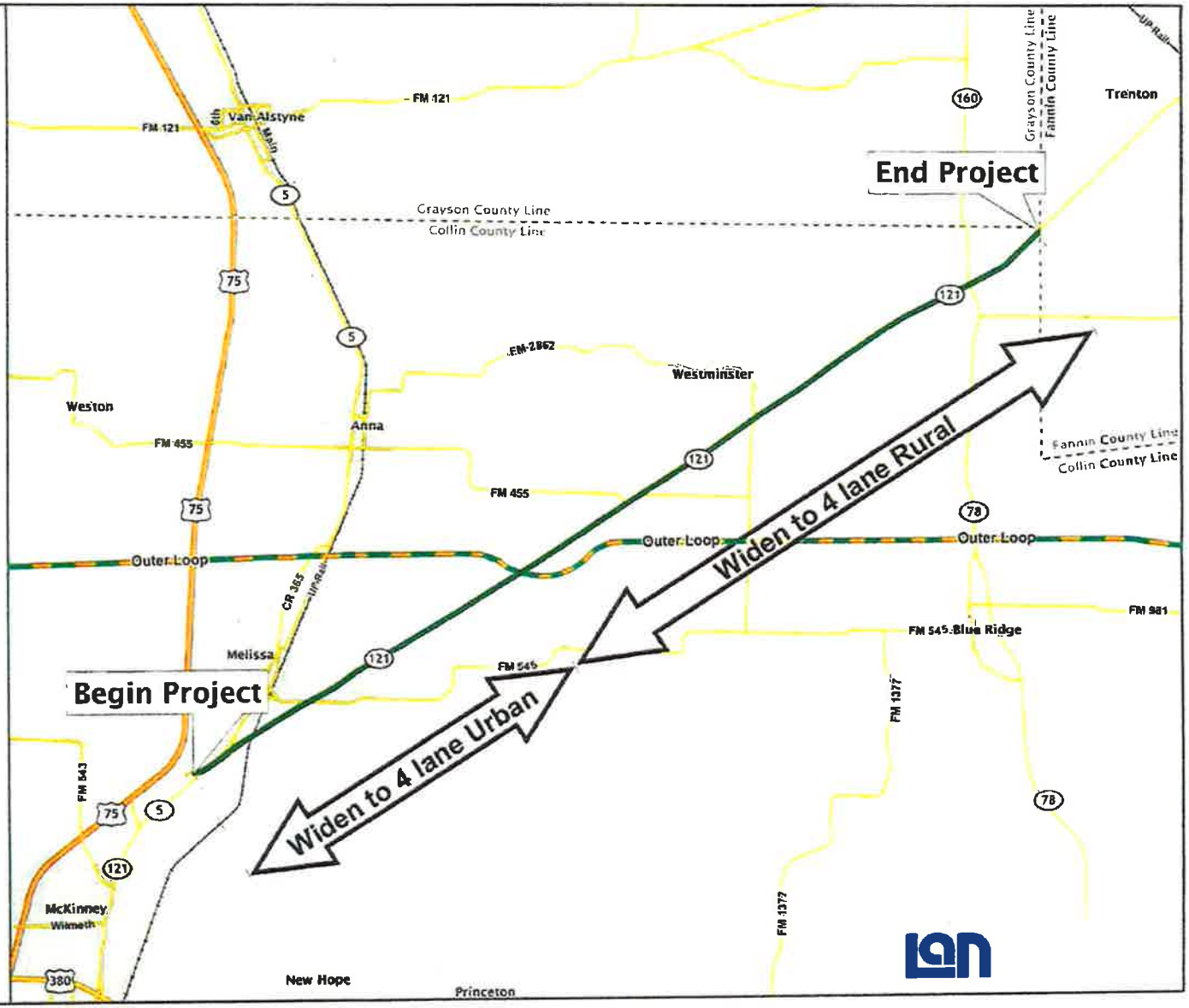
Project Information Map

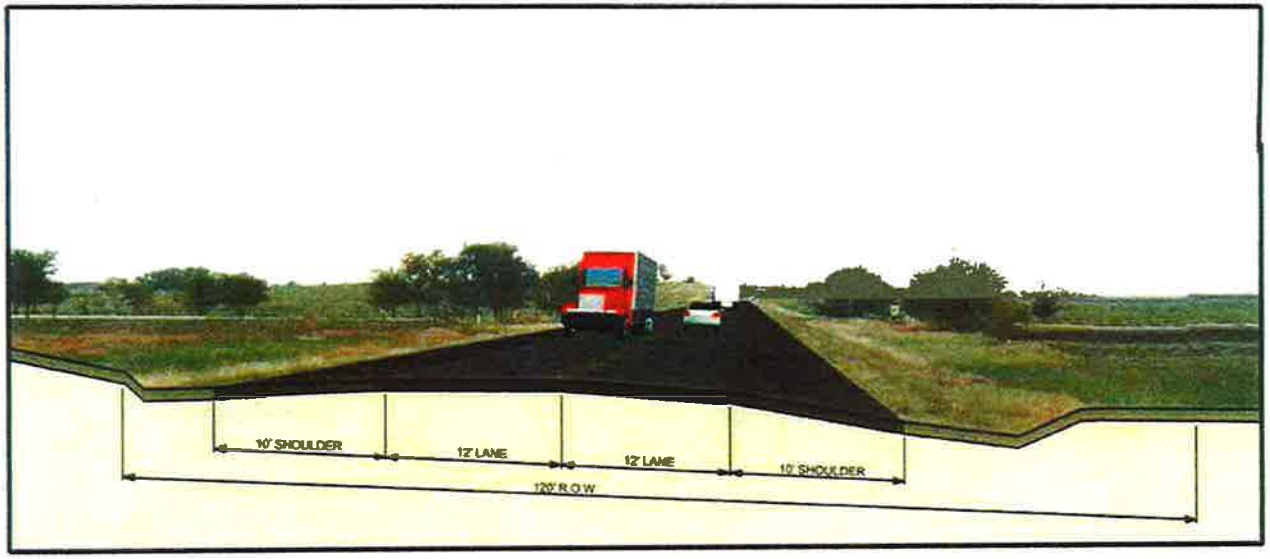
From 650' South of SH 5 to Fannin County Line (Eastline Rd)

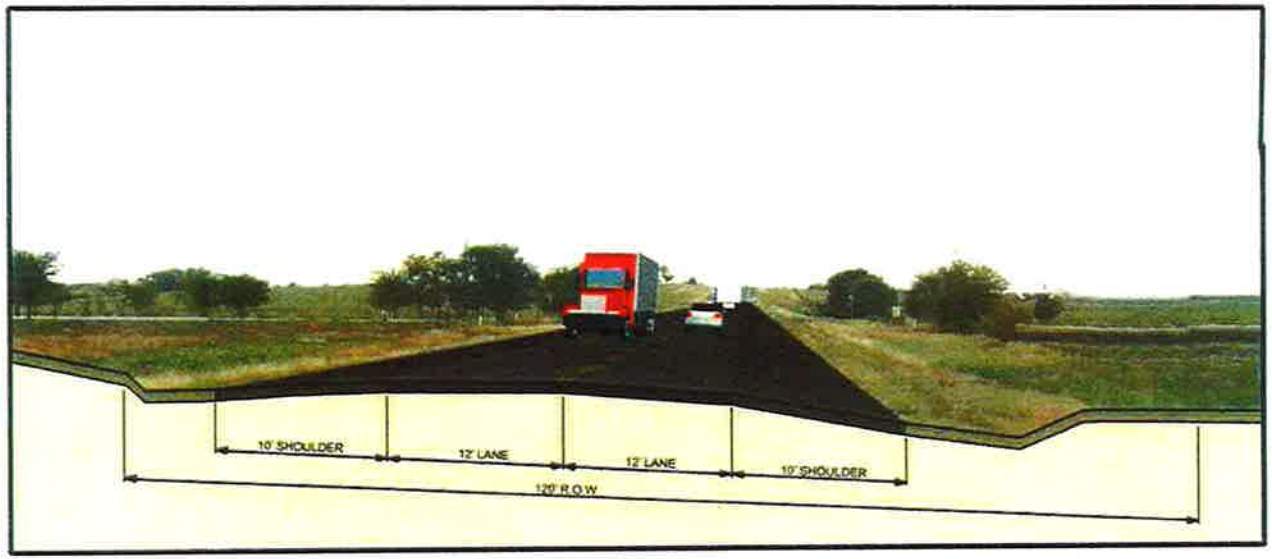
N W E S

SH 121 Project Limits

- $90 M Construction Cost
- Construction after 2012
- Collin County and TxDOT Working on Accelerated Schedule




10' SHOULDER
12' LANE
12' LANE
10' SHOULDER
120' R.O.W.


10' SHOULDER
12' LANE
12' LANE
10' SHOULDER
120' R.O.W

PROPOSED ROAD SECTIONS

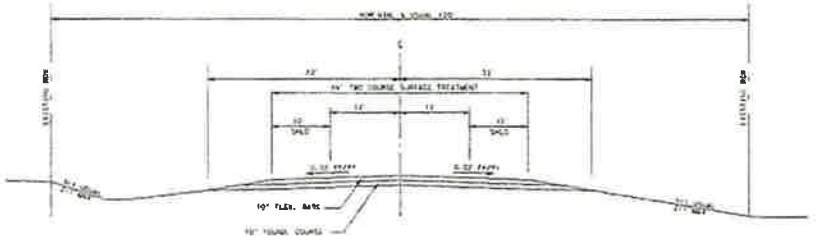
4 LANE URBAN

- MAY WIDEN TO 6 LANES
- UNDERGROUND STORM DRAINS
- FROM SH 5 TO OUTER LOOP
- 45 MPH

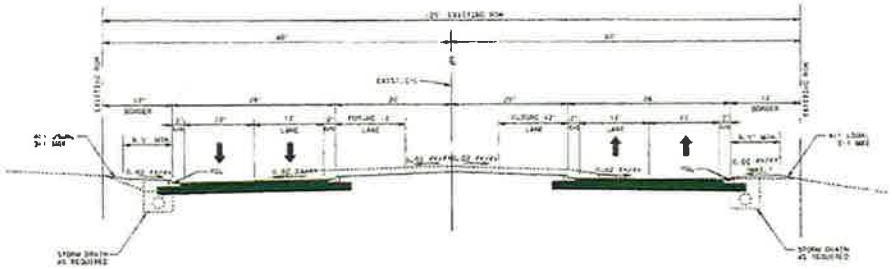
4 LANE RURAL

- 48' MEDIAN
- 60' ADDITIONAL ROW
- FROM OUTER LOOP TO EASTLINE ROAD
- 70 MPH

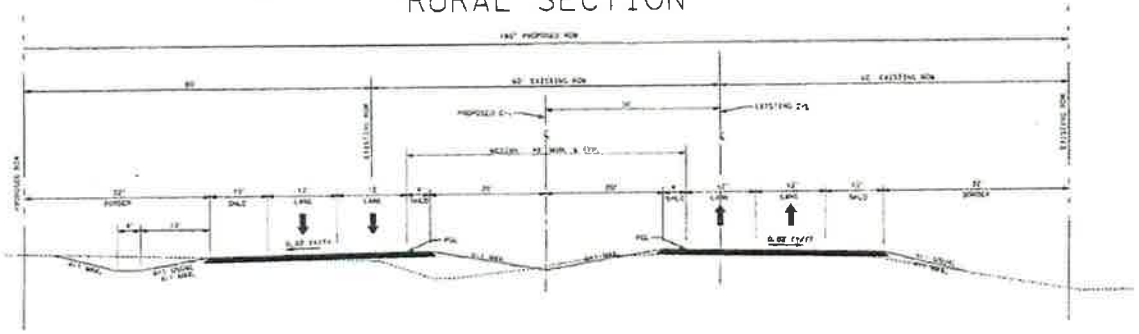
EXISTING SECTION



URBAN SECTION



RURAL SECTION



Texas Department of Transportation

Lockwood, Andrews & Newnam, Inc.
A LEO A. DALY COMPANY

When will construction Begin?

- Funding is not committed to the project
- County and State are working toward Funding Agreement
- Meanwhile TxDOT is Working to Obtain:
  - –Public Support
  - –Preferred Design
  - –Environmental Clearance

When will you buy my property?

ROW purchase requires 4 items before TxDOT begins:

- Funding
- Public Hearing
- Environmental Assessment
- Schematic Design

TxDOT is At Least **1 year** Away from Completing tasks.

Schedule

- Public Meeting – Tonight
- Schematic Design – 4 Months
- Environmental Document – 5 Months
- Public Hearing – 7 Months
- Environmental Clearance – 9 Months

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APPENDIX C
WRITTEN COMMENTS

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PUBLIC INPUT

Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Marianne Hagen **Phone:** 972 924 4455

Elected Position (if applicable) _____

Mailing Address & email 10515 Highway 121, Anna 75409

_____

Comments The planned road will take 60' off the front of my property, which is 3 lots of 1 acre, with my house on the centre lot. Currently I am permitted to build 2 houses on each acre lot. This plan will remove that option, will make the 2 1 acre lots worthless as they won't be large enough for septic tanks. I will lose all the trees ~~bordering~~ the front that take so long to grow. My privacy will be severely diminished, noise will be up. Even planning this means selling now + getting its value will be impossible

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

~~It~~ I will be unable to get my mortgage changed, in fact mortgage company will probably veto it.

Noise will be a problem

I ~~don't~~ counsel people in my house + this plan may severely →

impact my ability to do so in safety + privacy.

I bought the property because it was well back from the road. It also will put my cat in danger. At this moment, any plans I have had to do anything on the property are on hold as I don't know what you will end up doing. The garage at front is new on hold too. Maybe I should try to get it zoned commercial & just move. Across the road is just fields - + cows are there about once every 2 months - 60' off that does not wreck the trees. Trees in North Dallas are precious

PUBLIC INPUT

Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Wanda Hamilton Phone: 972-924-2417

Elected Position (if applicable) _____

Mailing Address & email
17223 State Hwy 121 N.
Anna, Tx 75409

Comments

This project appears to take about 150,000 sq ft of frontage from my property. It also will take ~200 young pecan trees, ~400 ft young cedar trees, and an irrigation system on each of these pecan trees which are just beginning to bear. I also have ~2500' of pipe fence fronting on this property and a gate & opener and landscaped entrance which would be taken in a 60' widening on the north side of 121. It would appear more logical to take the (over)

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

needed 60' on the south side in this area of
121 and then go to the north side at the area
where 424 intersects 121. This would miss the
Circle V on the south side and miss several
homes on 121 on the north side. There are no
houses or ~~on~~ major improvements on the
south side of 121 from the proposed urban
4 lane until you get to the 424 intersection &
121, Then Circle V is on the south side.

I request that someone contact me and
take a closer look at this situation.

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Richard McCormack JR Phone: 972 838 2128

Elected Position (if applicable) _____

Mailing Address & email

_____

_____

Comments

NO CURBS ON MEDIANS

~~CURB~~

CURB = Death

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Ellen Hartley Phone: 972-837-2826

Elected Position (if applicable) _____

Mailing Address & email P.O. Box 324
Melissa, TX 75454

Comments

CR 420 is Now ~~CR 1220~~ CR 1220

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: JOHNNY TURNER Phone: 903-482-6381

Elected Position (if applicable) _____

Mailing Address & email 8505 CR 528 ANNA TX. 75409 OR 1425 SAN CARLOS DR. 75495

Comments NOT TO INTERFARE WITH PROPERTY AT ALL TO PAY FULL VALUE OF PROPERTY PUT BACK NEW FENCE & ALL TREES AND NOT TO EFFECT A GOOD WELL AND OR BUY THE WHOLE PROPERTY & HOUSE FOR ASKING PRICE OR NOT TO USE MY SIDE OF THE PROPERTY

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Cynda Felini **Phone:** 469-667-6696

Elected Position (if applicable) _____

Mailing Address & email PO Box 638; Westminster, TX 75485
writerprincess@yahoo.com

Comments

Please do NOT make 121 a toll road. The people in our area cannot afford tolls. The commute is already too expensive. With the rise in gas, an added expense of tolls will create a great hardship for too many.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

PUBLIC INPUT

Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Jack R. Weston Phone: (214) 585-3613

Elected Position (if applicable) _____

Mailing Address & email
15155 State Hwy 160
Blue Ridge, Tx 75424

Comments

Please provide final grades and elevations at the intersection of State Hwy 121 and State Hwy 160. Also, provide drainage detail in the area of this intersection.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

PUBLIC INPUT

Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: CHARLES M. BRAZEAL Phone (214) 544-3596

Elected Position (if applicable) N/A

Mailing Address & email
2705 CREEK CROSSING DR
MCKINNEY TX 75070-4718
ZEALLLP@AOL.COM

Comments

WOULD LIKE TO KNOW IF IT IS POSSIBLE TO BUY A COPY OF THE COLLIN COUNTY GIS. MAP DATED 2002 COLLIN COUNTY THOUROFARE (INFORMATION SERVICES) DISPLAYED ON EASEL AT MEETING

P.S. ALL PEOPLE EXPLAING RIGHT OF WAY QUESTIONS WERE COURTEOUS AND VERY CAPABLE — WELL DONE!

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Vicki McComack **Phone:** 972-838-2128

Elected Position (if applicable) _____

Mailing Address & email
2438 State Hwy 121
Melissa TX 75454
VMCComack@msn.com

Comments

What number of deaths occurred in the ~~prior~~ years prior to the turn Lane being put in. Why do you wish to do away with the turn lanes in between the lights? There are allot of vehicles that utilize it for safer turning ~~and~~ without slowing up the traffic.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: DAVID COX Phone: 972 562 8003

Elected Position (if applicable) _____

Mailing Address & email
PO BOX 977
MCKINNEY TX 75070
dcox@careycoxcompany.com

Comments
PLEASE EMAIL ME THE PROJECT INFORMATION MAP.
THANKS!

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Tim Hughes Phone 972.404.8382

Elected Position (if applicable) _____

Mailing Address & email 16000 Dallas Pkwy ste 225 Dls 75248
thughes@falconcompanies.com

Comments

We really need those printed materials—
Happy to pay for them, we own 50 ac
commercial on corner of 121 + FM 545 (Liberty)
purchased from Hillwood — please advise, TRX

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Gary Russell Phone: 214 882 7660

Elected Position (if applicable) _____

Mailing Address & email 5380 Creekside
Melissa Tx 75454

Comments

Creekside is not currently part of Melissa (UnAnnexed) The creek in recent years has become more active & swift during storms. Your Road Way will greatly increase run off. Please Study to see if federal flood planes will rise for 100yr floods, also check to make sure erosive forces under & down stream are controled. If those erosive forces will shift Flood Planes Please Inform us!

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

Last Sentence! Look

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Marianne Hage **Phone:** _____

Elected Position (if applicable) _____

Mailing Address & email 10515 Highway 121

Comments My 2nd page. There is an onramp which will make my privacy + ~~[illegible]~~ Counselling Situation worse. And takes more property as far as I can see. It seems I will lose 1/6 of the property approx.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Ducky Duckley **Phone:** 972 924-2611

Elected Position (if applicable) _____

Mailing Address & email
13730 CR 577
ANNA, TX 75409

Comments

widening needs to start sooner than 2012 -
also at 581 where our property is located
County is widening + paving roads the state
part of which road is so narrow + a hazard
we can be made turns if car coming to
stop sign with our large trailers
+ tractor your access road is so narrow

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
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Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Albert Womack Phone: 972 924 2210

Elected Position (if applicable)____________________

Mailing Address & email
11247 CR 507
Anna TX 75409

Comments
why does the Roads have to be 450 ft. wide

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Diane Miller **Phone:** 972 838-2388

Elected Position (if applicable) _____

Mailing Address & email PO Box 126 Melissa Tx 75454
Parrishhill@att.net

Comments

Re: Property @ 121 / Hwy 5 (McKinney St) / Fannin Rd: Please Protect:
① Small well @ 121 / Fannin (NW corner) (1305 McKinney St)
near Beverage Store sign
② Deep (Woodbine) Well @ house just north of the Beverage Store
③ Stock pond behind house on (1309 McKinney ST) McK St.
Pro: light @ 121 / Fannin + 121 / 5
Pro: improved corner @ 1305 McK St. site
Anti: Toll Rd

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Tim Hughes Phone: 972.404.8382

Elected Position (if applicable) _____

Mailing Address & email
16000 Dallas Pkwy Ste 225 Dallas 75248
thughes@falconcompanies.com

Comments GLAD YOUR MOVING FORWARD AGGRESSIVELY — I am partner of Melissa Liberty I & II, we own 50ac from FM 545 to Liberty Dr. on NORTH SIDE OF 121. CURRENTLY WASHINGTON DR IS PROPOSED TO split over to INTO 2 PARCELS & T INTO 121; IT IS IMPERATIVE YOU ADDRESS TRAFFIC ACCESS OFF 121 ONTO WASHINGTON FROM BOTH DIRECTIONS, WE WILL BE SEVERELY AFFECTED BY ONLY ACCESSING OUR DEV. FROM 545 OR LIBERTY OR RIGHT ONLY FROM WB 121; WE ARE PLANNING RETAIL, COMMERCIAL PROJECT & DELIVERY TRUCKS WILL ALSO BE AN ISSUE

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

NAVIGATING THE SITE; PLEASE CALL ME TO REVIEW OUR PLANS IN MORE DETAIL THANK YOU; GLAD TO HELP!

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Martha Jo Soule **Phone:** 972-924-2411

Elected Position (if applicable) _____

Mailing Address & email PO Box 1263, Anna, Tx 75409
mjsoule@dfwair.net

Comments Strongly oppose the 455 interchange!
The feeder roads are too far out - Too much land is eaten up at the 455-121 intersection - bridge - feeder roads -

The two sections of 455 need to be re-joined together.

Cheaper - (bridge cost) - is not the best way always.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Mary Valverde Phone: 972.924.2202

Elected Position (if applicable) _____

Mailing Address & email
12546 S. H. 121 N.
Anna, TX 75409

Comments

It appears that our restaurant, The Circle V, will basically be unaffected by the widening of S.H. 121; however, it is imperative that we have a cross-over or turn lane(s) to provide access to our restaurant. We discussed this with Mayor Kenneth Pelham, who mentioned a median cut to provide this access. Anything less would mean certain failure for our family business.
Thank you for your consideration.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: ALLEN KNIGHT (NORTH COLLIN WATER SUPPLY) Phone: OFF. 972-837-2531 CELL 214-212-9308

Elected Position (if applicable) _____

Mailing Address & email
P.O. BOX 343 MELISSA, TX 75454
AKNIGHT@NORTHCOLLINWSC.COM

Comments

MY MAIN CONCERN IS THE CORNER CLIP ON THE NORTHWEST CORNER OF THE INTERSECTION OF HWY 121 & BERRY RD. THE PROPOSED ROW WILL TAKE MOST OF MY DRIVEWAY FOR EMPLOYEE & CUSTOMER PARKING. A 12" WATER MAIN WILL HAVE TO BE RE-LOCATED. AT THE INTERSECTIONS, I WILL HAVE WATER LINES AFFECTED. ALL FOUR CORNERS OF HWY 121 & BERRY RD I HAVE LINES & VALVES & METERS. SOME OF THE WATER LINES ON THE DRAWINGS ARE NOT CORRECT. I WILL BE GLAD TO GO OVER THEM WITH SOMEONE

1R 507 GOING WEST

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Gregg Farlow Phone: 214-773-4133

Elected Position (if applicable) N/A

Mailing Address & email

2611 Katie Trail

Melissa, TX. 75454 email: gafarlow@yahoo.com

Comments

Please consider the planting of many trees upon completion of the project. Not only would it be good for the environment, it is also eye pleasing (pretty). Thank you!

Please seriously consider this request if not already approved.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: STEVE SOULE Phone: 972-924-2411

Elected Position (if applicable) _____

Mailing Address & email
P.O. Box 1263
ANNA, TX. 75409

Comments

Entire section at 121 and 455 is 200' too wide.
** DO not use loops !! USE Standard on 2 of ramps. This will be less costly to STATE and Surface owner will be happier

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Bob Cust Phone: 214 676 3025

Elected Position (if applicable) _____

Mailing Address & email 7586 E FM 455
Anna, TX 75409

Comments

why would you even change anything? It will all change before you can even begin to maintain it.

The intersection at 455/121/75 seems to expansive. Most of the spaces are too large. The intersections could be lined up better with 455 & 75.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Jerry Conklin Phone: 214-801-1393

Elected Position (if applicable) _____

Mailing Address & email
16 Brookhollow

Comments

Barry Rd. Intersection -
Your easement on the east side seem excessive. It is taking up Kims Corner & the Sonic. AT Kims there is pleaty of space & there is gas tanks underground & it ~~do~~ looks ~~funny~~ like you are taking too much real estate. Kims has been here for a long time and is a Fixture here. I think you need to take this into consideration.

Please drop comments in the Comment Drop Box, or mail them to:
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Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Kurt Zimmerman Phone: 972.423.8786

Elected Position (if applicable)

Mailing Address & email

Kurt.Zimmermann@verizon.net

Comments

I hope you will establish a project website where project updates are posted.

It would also be nice if rural property owners were given the opportunity for left turn access into their to pay for property.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Debra Lee Molaison Darnell **Phone:** 972 548-4040
972658-4461
972658-6108
DAVID

Elected Position (if applicable) _____

Mailing Address & email 15837 St - Hwy 121 N
Blue Ridge TX 75424

Comments

Median would be better served with turning lanes for access to properties within the area.

Concrete, Not asphalt.

Not grass

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Rick DeWitt Phone:_____

Elected Position (if applicable)_____

Mailing Address & email

_____

_____

Comments

NO CURBS ON ROAD
DANGEROUS FOR FLIP
OVERS. IN ACCIDENT.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Alan Walters Phone: 972-924-2445

Elected Position (if applicable) Anna School Board

Mailing Address & email 11248 CR 507
Anna TX 75409

Comments

We are concerned about the area 455 North to county road 507. We understand the need for feeder roads due to the dangerous intersection of 455 + 121, but why do you need the additional area between the new Highway and the feeder roads? It seems you could tighten up the rightaway and still address the safety issues. How will you handle the intersection of CR 507 and 121? Will it be a red light, stop sign, or what?

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

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Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Saunda Griffin Phone: 972 924-3749

Elected Position (if applicable)

Mailing Address & email
W K G Enterprise
5864 E FM 455
Anna, TX 75409

Comments

455 + 121 needs to be re drawn. Intersection is too large too wide too Complex.

Need to be redesigned to reConnect both 455's

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

PUBLIC INPUT

Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Keith Simpson Phone: 972-924-2597

Elected Position (if applicable) _____

Mailing Address & email
11465 Wild Rose Lane, Anna, TX
Keith@KSimpson.org

Comments

Concerned about noise levels at FM455 as 121 crosses Sister Grove Creek. Even today, noise from 121 can be heard in Wild Rose Farms. More lanes with more traffic will only generate more noise. Some sort of wall may be needed there.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

PUBLIC INPUT

Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Kelly Simpson Phone: 972-924-2597

Elected Position (if applicable) _____

Mailing Address & email
11465 Wild Rose Ln Anna, TX 75409

Comments

Use a road surface material that is less noisy than the current "new + improved" surface that was used most recently (the old surface was much quieter)

Intersection at 455 + 121 is much too elaborate. This is not a major intersection. The current design uses too much land. The higher road elevation will mean more noise, as well.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

There needs to be more coordination between these major projects (e.g., outer loop). I don't care if they're being managed by different people; they need to work together ultimately

PUBLIC INPUT

Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Diane Miller **Phone:** 972 838 2388

Elected Position (if applicable) ______

Mailing Address & email PO Box 126, Melissa Tx 75454
ParrisHill@att.net

Comments

Re: 121/McDonald St/ Hwy 5 split @ Fannin Rd 1305 McKinney St
Pro: leaving cross over in front of The Beverage Store in addition to light @ Fannin Rd & Hwy 5 south
Anti: light @ new intersection where have to make stop to turn left onto Hwy 5 NorthBound side as well

Note: small well @ back of house @ 1309 McKinney St (in addition to 2 other wells noted on another comment form) - Noted on map

This cross over is extremely helpful moving farm machinery across Hwy 5 to 121

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

PUBLIC INPUT

Comment Form

Improvements to SH 121
From SH 5 to
Fannin County Line (Eastline Road)

May 15, 2007

First Melissa Baptist Church
2600 SH 121, Melissa, Texas 75454

Name: Kevin Slaughter Phone (205) 969-2065

Elected Position (if applicable) _____

Mailing Address & email
2837 Acton Place
Birmingham, AL 35243

Comments

I own Kim's Korner at the corner of 121 & Barry Rd. We are a single store family operation that has been in Melissa since 1983. The proposed right-of-way for the right turn lane at that intersection will take both of my high-rise signs, my underground fuel tanks, my diesel island, part of our regular gas island canopy, and all of our vacuums at our carwash. Obviously, this would be devastating to our business and could put us out of business. I would appreciate someone calling me to discuss options & possible solutions. Thank you for your time & help.

Please drop comments in the Comment Drop Box, or mail them to:
Lockwood, Andrews & Newnam, Inc.
1320 So. University Drive, Suite 450
Fort Worth Texas 76107
Attention: Joseph Atwood, P.E.

Sincerely,

K. Slaughter

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Appendix G

County Historical Commission Letter

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Texas Department of Transportation

P.O. BOX 133067 • DALLAS, TEXAS 75313-3067 • (214) 320-6100

January 27, 2009

Eric Nishimoto
Collin County Historical Commission
210 S. McDonald St, Suite 626
McKinney, TX 75069

RE: Three bridge replacements at Sister Grove Creek, Pilot Grove Creek and Desert Grove Creek associated with proposed State Highway 121 roadway project from Melissa to the Fannin C/L, Collin County, Texas (CSJ: 0549-03-018).

Dear Mr. Nishimoto;

The Texas Department of Transportation (TxDOT) has authorized a project that may result in effects to three bridges; the first on Sister Grove Creek located on SH 121approximately ¼ mile north of the intersection of SH 121 and FM 455. The second is the Pilot Grove Creek Bridge approximately ½ mile north of the intersection of SH 121 and CR526/CR527. The third is the Desert Grove Creek bridge ¼ mile north of the intersection of SH 121 and SH 160/SH 78. Project location maps and photos of each bridge are attached.

The referenced bridges were built in 1962. These bridges were included in the State Historic Bridge Inventory (Sister Grove Creek Bridge #18-043-0-0549-03-021, photo 1; Pilot Grove Creek Bridge #18-043-0-0549-03-020, photos 2, 3; Desert Grove Creek Bridge #18-043-0-0549-03-019, photo 4), a statewide study of historic bridges that TxDOT conducted in cooperation with the Texas Historical Commission. Because the bridges did not meet the criteria for statewide significance, they have been determined as not eligible for listing in the National Register of Historic Places.

While the bridges do not have known state significance, we do recognize that they may have other local/regional historical associations. If you feel that the bridges are significant at a local or regional level, please provide us with written information concerning the history of the bridges and their role in your community's history. We request that you send us your response no later than February 27, 2009.

If you feel that the bridges do not have any local/regional significance, then please endorse this letter and return it to us by February 27, 2009. This endorsement will signify your concurrence that the bridges are not historically significant. Typically, if we do not receive a response within 30 days, we assume concurrence with the findings of the State Historic Bridge Inventory; however, for this project TxDOT requests that you submit this letter via mail or fax (214-320-4470) if you concur with the findings of the State Historic Bridge Inventory.

Please feel free to call our environmental consultant, Greg Wood of Lockwood Andrews and Newman, Inc., at (210) 499-5082 if you have any questions or need additional information.

Sincerely,

District Advance Project
Development Engineer

Attachments

Endorsement to the Texas Department of Transportation

_____ _____

County Historical Commission Chairperson Date

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Appendix H

Texas Parks & Wildlife Coordination Letters

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TEXAS PARKS & WILDLIFE

Life's better outside.™

February 11, 2011

Stirling J. Robertson, Ph. D.
Biological Resources Branch
Environmental Affairs Division
Texas Department of Transportation
125 E. 11th Street
Austin, TX 78701-2483

RE: Proposed Widening SH 121: From SH 5 to East of FM 455, Collin County (CSJ 0549-03-018 and 0549-03-021)

Dear Dr. Robertson:

The Texas Parks and Wildlife Department (TPWD) has reviewed the Environmental Assessment (EA) for the proposed project referenced above.

Please be aware that a written response to a TPWD recommendation or informational comment received by a state governmental agency on or after September 1, 2009 may be required by state law. For further guidance, see the Texas Parks and Wildlife Code, Section 12.0011, which can be found online at http://www.statutes.legis.state.tx.us/Docs/PW/htm/PW.12.htm#12.0011. Please refer to TPWD project number 6270 in any return correspondence regarding this project.

Project Description

The project is 14.3 miles in length and involves reconstruction and widening of the existing undivided 2-lane facility to a divided 4-lane facility. The existing facility includes variable pavement widths of 58 feet to 44 feet wide and is within a typical 120-foot right-of-way (ROW) which extends up to 270 feet wide at intersections. The proposed facility would contain a 40-foot wide grassed median, no shoulders in the urban section, and 10-foot outside and 4-foot inside shoulders in the rural section. The proposed typical ROW would be 120 feet for the urban section except at bridges and intersections, and the proposed typical ROW would vary from 180 feet to 210 feet wide in the rural section, except where the ROW would expand up to 480 feet wide at intersections. Six existing bridges would be replaced and 6 proposed bridges would be constructed in parallel to accommodate additional lanes. The project would require approximately 158 acres of additional right-of-way (ROW).

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.state.tx.us

Invasive Species – Zebra Mussels (*Dreissena polymorpha*)

The zebra mussel, a highly invasive aquatic species, has been found in Sister Grove Creek of the Trinity River Basin. Efforts are underway to try to eradicate and prevent further spread to other areas of the Trinity River Basin. The project would include bridge construction at Sister Grove Creek as well as construction at tributaries of Sister Grove Creek and other streams within the Trinity River Basin totaling 16 crossings. Because the project occurs at Sister Grove Creek there is potential for construction equipment and/or temporary fills to become contaminated.

The zebra mussel larval and post-larval forms are known to spread to other waters, as they can survive several days out of water before being carried to other waters. Post-larval zebra mussels attach to hard surfaces, such as boats. The larvae, called veligers, are microscopic and are visually undetectable, thus they are unknowingly carried to other waters via live wells, bait buckets, scuba equipment, and anything that carries small amounts of water.

Request: TPWD requests that the Texas Department of Transportation (TxDOT) implement special Best Management Practices (BMPs) for this project to prevent unintentional spread of zebra mussels to other waters. Inland Fisheries Division biologist, Bruce Hysmith of the Lake Texoma Fisheries Station has provided the following BMPs. He can be reached at 903-786-2389 for additional information or assistance regarding zebra mussels:

- Please contact Bruce prior to project construction to check the status of zebra mussels in Sister Grove Creek. Although post-larval forms may not be visible at the site, undetectable larval forms may be present.

- TxDOT district staff and project construction personnel should be informed of the serious threat of zebra mussel spread to other waters and should be able to identify zebra mussels. Information regarding the zebra mussel can be found on-line at http://www.invasivespeciesinfo.gov/aquatics/zebramussel.shtml and http://fl.biology.usgs.gov/Nonindigenous_Species/Zebra_mussel_FAQs/zebra_mussel_faqs.html

- *For fill material that will be reused in another waterway following exposure to waters or substrate of Sister Grove Creek and its tributaries*

  If temporary fill material is to be reused in other waters, it should be de-contaminated by stockpiling the material in an open flat field and periodically grading it level, exposing it to as much sunlight as possible.

Two weeks of turning this material over, through periodic grading and exposing, should kill any zebra mussel larvae in the fill material.

- *For equipment that comes into contact with water in Sister Grove Creek and its tributaries, and will be sent to another location near a stream/wetland/waterway*

  Contaminated equipment should be sprayed clean with 140° F water under pressure followed by spraying with a 10% chlorine solution, followed by a final spray wash of clean water at 140° F and allowed to air dry while in route to another site.

  If this equipment is to remain idle at least a week before reuse, then the equipment should be sprayed with clean water, material and standing water should be cleaned from nooks and cranny's on the equipment, and the equipment should be allowed to dry for one week. Be sure to drain any pockets of water. Decontamination treatment does not need to be implemented if the material and/or equipment will be used on a project far removed from a stream, as the zebra mussel larvae will not survive drying and exposure to sunlight.

State Fish and Wildlife Resources

Special features, natural communities, and rare species that are not listed as threatened or endangered are tracked by TPWD. Although not afforded protection by law, TPWD actively promotes rare species conservation. TPWD considers it important to evaluate and if necessary, minimize impacts to rare species and habitats to reduce the likelihood of endangerment.

The proposed project would impact 328.8 acres of vegetation including 160.4 acres maintained ROW grasses, 119.5 acres mixed native and introduced pasture, 37.2 acres upland woodland, and 11.7 acres riparian habitat.

Although the EA indicates that no native prairie remnants are within or immediately adjacent to the project area, the project is located within a region historically supporting native tallgrass prairie and native grassland species occur within the agricultural pasture cover type of the project area. The condition of such pastures cannot be determined from the data presented. Without field data collected from multi-location sampling surveys, the proportion of the pasture that exhibit native characteristics cannot be fully captured and interpreted. With approximately 119.5 acres of permanent conversion of grassland/pasture to transportation use, the loss of native species and habitat associated with the pastures is of concern. The potential for restoration of degraded habitat within such grasslands would also be lost where there is conversion to transportation use.

Native rangeland that is not subjected to intense grazing can provide suitable habitat for grassland birds and other wildlife. America's grasslands are diminishing due to habitat fragmentation and loss as a result of development, conversion to non-native pastures, and woody encroachment. Where the study area contains native rangeland habitat, there is potential for the site to support local populations of grassland birds, many of which are facing population declines.

The TxDOT-TPWD Memorandum of Understanding (MOU) includes riparian habitat and native prairies as habitat types to be considered for non-regulatory mitigation. For this project, TxDOT has not offered non-regulatory compensatory mitigation for loss to native prairie or riparian habitat.

> Recommendation: Because the project would impact 11.7 acres riparian habitat and 119.5 acres mixed native and introduced pasture grasslands, TPWD **strongly recommends** TxDOT reconsider and provide non-regulatory mitigation on an acre-to-acre basis for impact to these resources. A mitigation effort for native grasslands could include planting solely native herbaceous species within the ROW including the grassed median and omitting non-native bermudagrass (*Cynodon dactylon*) and weeping lovegrass (*Eragrostis curvula*) from the seed mix. Bermudagrass (*Cynodon dactylon*) and weeping lovegrass (*Eragrostis curvula*) are not native and exhibit invasive characteristics, as indicated at the TexasNonNatives.org website http://www.texasnonnatives.org/MENUTexnonnative.htm. Introduction of non-native species into native landscapes should be prevented. Additional measures for native grassland and riparian habitat mitigation could include in-lieu fee agreements with local communities or non-profit organizations for conservation projects.

If you have any questions, please contact me at (903) 322-5001.

Sincerely,

Karen B. Hardin
Wildlife Habitat Assessment Program
Wildlife Division

kbh:6270

Texas Department of Transportation

P.O. BOX 133067 • DALLAS, TEXAS 75313-3067 • (214) 320-6100

April 11, 2011

CSJ: 0549-03-018 & 0549-03-021
SH 121: From SH 5 to CR 635
Collin County

Ms. Karen B. Hardin
Texas Parks and Wildlife Department
Wildlife Habitat Assessment Program - Wildlife Division
4200 Smith School Road
Austin, Texas 78744-3291

Dear Ms. Hardin:

I am providing response to your comments submitted on February 11, 2011 for the above referenced project. Listed below are TPWD's comments and TxDOT's responses.

TPWD Request: TPWD requests that the Texas Department of Transportation (TxDOT) implement special Best Management Practices (BMPs) for this project to prevent unintentional spread of zebra mussels to other waters. Inland Fisheries Division biologist, Bruce Hysmith of the Lake Texoma Fisheries Station has provided the following BMPs. He can be reached at 903-786-2389 for additional information or assistance regarding zebra mussels:

- Please contact Bruce prior to project construction to check the status of zebra mussels in Sister Grove Creek. Although post-larval forms may not be visible at the site, undetectable larval forms may be present.

- TxDOT district staff and project construction personnel should be informed of the serious threat of zebra mussel spread to other waters and should be able to identify zebra mussels. Information regarding the zebra mussel can be found on-line at http://www.invasivespeciesinfo.gov/aquatics/zebramussel.shtml and http://fl.biology.usgs.gov/Nonindigenous_Species/Zebra_mussel_FAQs/zebra_mussel_faqs.html

- *For fill material that will be reused in another waterway following exposure to waters or substrate of Sister Grove Creek and its tributaries*

If the temporary fill material is to be reused in other waters, it should be de-contaminated by stockpiling the material in an open flat field and periodically grading it level, exposing it to as much sunlight as possible. Two weeks of turning this material over, through periodic grading and exposing, should kill any zebra mussel larvae in the fill material.

- *For equipment that comes into contact with water in Sister Grove Creek and its tributaries, and will be sent to another project near a stream/wetland/waterway*

  Contaminated equipment should be sprayed clean with 140 F water under pressure followed by spraying with a 1000 chlorine solution, followed by a final spray wash of clean water at 140 F and allowed to air dry while in route to another job site.

  If this equipment is to remain idle at least a week before reuse, then the equipment should be sprayed with clean water, material and standing water should be cleaned from nooks and cranny's on the equipment, and the equipment should be allowed to dry for one week. Be sure to drain any pockets of water. Decontamination treatment does not need to be implemented if the material and/or equipment will be used on some road project far removed from a stream, as the zebra mussel larvae will not survive drying and exposure to sunlight.

TxDOT Response: No mollusks of any species were identified in Sister Grove Creek during field surveys. TxDOT will only perform necessary work within the waters of Sister Grove Creek during the construction of this project. TPWD's request for TxDOT to implement the above mentioned special Best Management Practices (BMPs) for this project to prevent unintentional spread of zebra mussels to other waters will be incorporated into the final design plans. The contractor will be notified (via the EPIC sheet and pre-construction meeting) of the potential to unintentionally spread the zebra mussel larval to other waters.

TPWD Request: Because the project would impact 11.7 acres of riparian habitat and 119.5 acres mixed native and introduced pasture grasslands, TPWD **strongly recommends** TxDOT reconsider and provide non-regulatory mitigation on an acre-to-acre basis for impact to these resources. A mitigation effort for native grasslands could include planting solely native herbaceous species within the ROW including the grassed median and omitting non-native bermudagrass (*Cynodon dactylon*) and weeping lovegrass (*Eragrostis curvula*) from seed mix. Bermudagrass (*Cynodon dactylon*) and weeping lovegrass (*Eragrostis curvula*) are not native and exhibit invasive characteristics, as indicated at the TexasNonNatives.org website http://www.texasnonnatives.org/MENUTexnonnative.htm. Introduction of non-native species into native landscapes should be prevented. Additional measures for native grassland and riparian habitat mitigation could include in-lieu fee agreements with local communities or non-profit organizations for conservation projects.

TxDOT Response: TxDOT's seed mixtures utilized in non-regulatory mitigation areas contain both native grasses species and introduced species. The seed mixes are derived from diverse criteria which includes The Natural Resources Conservation Service's "critical area" seeding list, erosion control capability, mature height and commercial availability. These seed mixtures tend to hold up better on lightly maintained land than a monoculture containing only one or two species. The overall appearance of the ROW improves with an array or native and introduced species. The native grasses offer roadside aesthetics and work well to stabilize the soil, while the introduced species offer great protection from sediment movement caused by storm water runoff. Avoidance and minimization efforts were employed during the proposed project's development. The Dallas District does not propose to provide non-regulatory mitigation on an acre-to-acre basis nor in-lieu fee agreements.

If you have any questions regarding this project please contact Robert Hall, TxDOT Dallas District at 214-320-6157 or Robert.Hall@txdot.gov.

Sincerely,

H. Stan Hall, P.E.
District Advance Project
Development Engineer

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