

Appendix 2-9

Excerpts from *Mobility 2030—2009 Amendment*

8. Dallas North Tollway Corridor

Highway Segments: FT1 1900, FR1 1900, FR1 1910, FT1 1910, FR1 1930, FT1 1930, FT1 1935

GENERAL DESCRIPTION

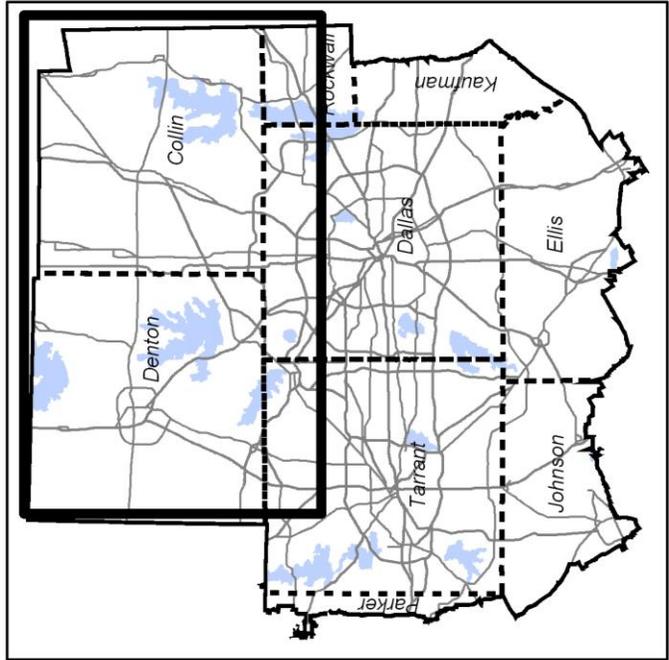
Proposed improvements to the Dallas North Tollway (DNT) corridor include expansion of the current DNT facility between Royal Lane and SH 121, and new construction of the DNT Extension Phase 4 between US 380 and FM 121 near the Collin/Grayson County line. The North Texas Tollway Authority (NTTA) is the responsible agency for projects along the DNT corridor.

Continued strong growth in north Dallas, Addison, and Plano, particularly in terms of employment, warrants the expansion of the DNT to 8 general purpose toll lanes (plus auxiliary lanes) between

Royal Lane and SH 121. However, right-of-way in this portion of the corridor is severely constrained, in many cases by high-rise office buildings, and feasibility studies are underway to determine cost-effective and low-disruption solutions for adding new capacity. This expansion is anticipated to open by 2019.

Construction of the DNT Extension Phase 3 between SH 121 and US 380 in Frisco is complete.

Overview Map



Detail Map



Corridor 8

DNT Extension Phase 4 will construct 6 general purpose toll lanes (plus auxiliary lanes) and 4 frontage road lanes (plus auxiliary lanes near ramp locations and cross streets) between US 380 and FM 121 through the rapidly-growing cities of Prosper and Celina. Alignment identification is still under study by the NTTA. Construction is planned to proceed in phases with frontage roads between US 380 and FM 428, and tollway main lanes between US 380 and the Outer Loop open to traffic by 2019. Completion of

frontage roads from FM 428 to FM 121 and tollway main lanes from the Outer Loop to FM 121 is expected by 2025. Coordination is currently underway with the newly-formed Grayson County Regional Mobility Authority (GCRMA) to determine if the DNT could link to a proposed north-south toll road alternative for SH 289 (Preston Road) that would terminate at US 82 between Gainesville and Sherman.

Estimated Total Project Cost: **\$857.6 million**

RECOMMENDED IMPROVEMENTS

Dallas North Tollway Corridor			
Highway Segments	Limits	Project Description	Cost
FT1 1900 FR1 1900 FT1 1910 FR1 1910	FM 121 to US 380	6 general purpose toll lanes + auxiliary lanes. 6 frontage road lanes (plus auxiliary lanes near ramp locations and cross streets).	\$310 million
FT1 1920 FR1 1920 FT1 1925 FR1 1925	US 380 to SH 121	6 general purpose toll lanes + auxiliary lanes. 6 frontage roads lanes (plus auxiliary lanes near ramp locations and cross streets).	\$336.6 million
FT1 1930	SH 121 to Parker Road	Expand existing facility to 8 general purpose toll lanes + auxiliary lanes.	\$211 million
FT1 1935	Parker Road to Royal Lane	South of Legacy Drive – 8 general purpose toll lanes + auxiliary lanes.	

Contacts:

Chad McKeown
North Central Texas Council of Governments
616 Six Flags Drive, Centerpoint Two
P.O. Box 5888
Arlington, Texas 76005-5888

North Texas Tollway Authority
P.O. Box 260729
Plano, Texas 75026-0729
Phone: (214) 461-2000

Supporting Documents:

Mobility 2025: The Metropolitan Transportation Plan, 2004 Update, NCTCOG, January 2004.

Mobility 2025: The Metropolitan Transportation Plan, Amended April 2005, NCTCOG, April 2005.

Mobility 2030: The Metropolitan Transportation Plan for the Dallas-Fort Worth Area, NCTCOG, January 2007.

Mobility 2030 - 2009 Amendment Corridor Fact Sheets Summary

Fact Sheet ID	Location	Limits	Highway Segment ID	Lane Summary		Operational Between*	Responsible Agency	YOE Total Project Cost
				Existing	Proposed (2030)			
Dallas-Fort Worth Regional Outer Loop System								
1	IH 35	FM 3002 to Regional Outer Loop (FM 156) Regional Outer Loop (FM 156) to Loop 288	FT1 1100, FR1 1100 FT1 1105, FR1 1105, HM1 8320	4	8	2026 - 2030	TxDOT Dallas (CDA)	\$140,056,000
				4	8 + 4 (HOV-M/C)	2026 - 2030		\$266,326,000
2	IH 35W	Loop 288 to IH 35E/IH 35W IH 35/IH 35E to Loop 288	FT1 1110, FR1 1110 FT1 1112, FR1 1112, HM1 8325, HM1 8330 FT1 1115, FR1 1115, HM1 8300 FT1 1117, FR1 1117, HM1 8300	4	10 + 4 (HOV-M/C)	2026 - 2030	TxDOT Dallas (CDA)	\$645,800,000
				4	6 + 2 (HOV-M/C)	2026 - 2030		\$625,945,000
3	Loop 9	Loop 288 to SH 114 SH 114 to Eagle Parkway Eagle Parkway to SH 170	FT1 1120, FR1 1120, HM1 8300 FT1 1122, FR1 1122 FT1 1130, FR1 1130, HM1 8100, HM1 8300 FT1 2400, FR1 2400, FT1 2430, FR1 2430, FT1 2440, FR1 2440, FT1 2450, FR1 2450	4	6 + 4 (HOV-M/C)	2026 - 2030	TxDOT Fort Worth (CDA)	\$187,758,000
				4	6 + 4 (HOV-M/C)	2026 - 2030		\$124,684,000
4	Outer Loop (Eastern Subregion)	US 287/Regional Outer Loop to IH 20/SH 190 US 175 to IH 30 IH 30 to US 380 US 380 to US 75	FT1 1130, FR1 1130, HM1 8100, HM1 8300 FT1 2400, FR1 2400, FT1 2430, FR1 2430, FT1 2440, FR1 2440, FT1 2450, FR1 2450 FT1 2465, FR1 2465, IN1 25001 FT1 2470, FR1 2470, FT1 2475, FR1 2475, FT1 2480, FR1 2480 FT1 2485, FR1 2485, FT1 2490, FR1 2490, FT1 2495, FR1 2495 FT1 2500, FR1 2500 FT1 2505, FR1 2505, FT1 2510, FR1 2510, FT1 2515, FR1 2515	0	6 (TOLL)	2026 - 2030	TxDOT - Dallas (CDA)	\$5,756,213,000
				0	6 (TOLL)	2026 - 2030		\$1,263,676,000
5	Outer Loop (Western Subregion)	US 75 to Dallas North Tollway Dallas North Tollway to IH 35 SH 199 to IH 20 IH 20 to US 377 US 377 to SH 121/FM 917 SH 121/FM 917 to IH 35W/FM 917	FT1 1800, FR1 1800, IN1 18001 FT1 1805, FR1 1805 FT1 1807, FR1 1807 FT1 1810, FR1 1810 FT1 1820, FR1 1820, FT1 1830, FR1 1830, FT1 1840, FR1 1840	0	6 (TOLL)	2020 - 2025	TxDOT Dallas (CDA)	\$1,448,262,000
				0	6 (TOLL)	2026 - 2030		\$1,909,422,000
6	SH 170	IH 35W/FM 917 to US 287/Loop 9 SH 199/Regional Outer Loop to US 81/US 287 US 81/US 287 to IH 35W	FT1 1800, FR1 1800, IN1 18001 FT1 1805, FR1 1805 FT1 1807, FR1 1807 FT1 1810, FR1 1810 FT1 1820, FR1 1820, FT1 1830, FR1 1830, FT1 1840, FR1 1840	0	6 (TOLL)	2020 - 2025	NITTA	\$849,486,000
				0	6 (TOLL)	2026 - 2030		\$1,323,944,000
7	SH 360	Regional Outer Loop/Loop 9 to US 67 US 67 to FM 2258	FT1 2165, FR1 2165 FT1 2170, FR1 2170, IN1 21701 FT1 2670, FR1 2670 FT1 2675	0	6 (TOLL)	2026 - 2030	TxDOT Fort Worth (CDA)	\$1,125,328,000
				0	6 (TOLL)	2026 - 2030		\$731,756,000
8	Dallas North Tollway	Loop 288 to SH 114 SH 114 to Eagle Parkway Eagle Parkway to SH 170	FT1 1900, FR1 1900, FT1 1910, FR1 1910 FT1 1920, FR1 1920, FT1 1925, FR1 1925 FT1 1930 FT1 1935	0	6 (TOLL)	2020 - 2025	TxDOT Dallas (CDA)	\$935,374,000
				6 (TOLL)	6 (TOLL)	2010 - 2019		\$344,772,000
8	Dallas North Tollway	US 380 to SH 121 SH 121 to Parker Road Parker Road to Royal Lane	FT1 1900, FR1 1900, FT1 1910, FR1 1910 FT1 1920, FR1 1920, FT1 1925, FR1 1925 FT1 1930 FT1 1935	6 (TOLL)	6 (TOLL)	2020 - 2025	NITTA	\$305,000,000
				6 (TOLL)	8 (TOLL)	2020 - 2025		\$689,056,000
				0	6 (TOLL)	2020 - 2025		\$310,000,000
				6 (TOLL)	6 (TOLL)	2007		\$336,598,000
				6 (TOLL)	8 (TOLL)	2010 - 2019		\$211,000,000

*Some facilities are staged and may have improvements completed prior to date listed. See Corridor Fact Sheets for more detail.
 FT - Freeway/Tollway; FR - Frontage; ART - Arterial; (HOV-M/C) - Concurrent Managed Lanes; (HOV-M/R) - Reversible Managed Lanes; (HOV-M/C/D) - Managed Collector Distributor Lanes; (CDA) - Comprehensive Development Agreement

Appendix 2-10

Air Quality Analysis Supporting Information

Air Quality Analysis Supporting Information

Dallas North Tollway Extension Phase 4B/5A (DNT 4B/5A)

CONGESTION MANAGEMENT PROCESS (CMP)

The operational management 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, which was adopted by the North Central Council of Governments' (NCTCOG) Regional Transportation Council (RTC). They would be included in the financially constrained Metropolitan Transportation Plan (MTP) and future resources would be earmarked for their implementation. The proposed DNT 4B/5A was developed from the NCTCOG operational CMP, which meets all requirements of 23 Code of Federal Regulations (CFR) 500.109.

The CMP element of the plan would carry 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 implementation level, travel demand reduction strategies and commitments would be added to the regional Transportation Improvement Program (TIP) or included in the construction plans. The regional TIP would provide for programming of these projects at the appropriate time with respect to the SOV facility implementation and project specific elements. Committed congestion reduction strategies and operational improvements considered to be beneficial include the addition of lanes and new roadways. The Texas Department of Transportation (TxDOT), under the Congestion Mitigation and Air Quality Improvement Plan (CMAQ) program, would manage these projects, which are included in the regional CMP and TIP. Individual CMP projects in the area are listed in **Table 1**.

Table 1. CMP/Operational Improvements in the Corridor

Street / Name	City or County	Implementing Agency	Project Type	Year of Implementation	Total Project Cost
Dallas North Tollway from US 380 to FM 428	Collin County	Collin County	New Roadway	2008	\$7,000,000
Outer Loop from Denton County Line to Rockwall County Line	Collin County	NCTCOG	New Roadway	2009	\$6,250,000
SH 289 from US 380 Interchange to North of FM 1461/BUS 289D	Collin County	TxDOT Dallas	Addition of Lanes	2011	\$32,325,481
SH 289 from North Dallas FM 1461/BUS 289D to FM 455 in Celina	Collin County	TxDOT Dallas	Addition of Lanes	2011	\$34,750,000
SH 289 from FM 455 to North Bu 289C, North of Celina	Collin County	TxDOT Dallas	Addition of Lanes	2009	\$8,660,890
SH 289 from North Business 289C, North of Celina to North CR 60/CR 107 (Grayson C/L)	Celina	TxDOT Dallas	Addition of Lanes	2020	\$603,466
BNSF Passenger Rail from Denton / Collin County Line to North Frisco	Collin County	NCTCOG	Rail Transit	2009	\$1,875,000
SH 289 from US 380 to Panther Creek	Frisco	TxDOT Dallas	Addition of Lanes	2009	\$22,664,279
Source: NCTCOG - TIPINS Web site, November, 2010.					

1
2 In an effort to relieve traffic congestion and the need for single occupant vehicle (SOV) lanes in
3 the region, TxDOT and the NCTCOG will continue to promote appropriate congestion
4 management strategies through the CMAQ program, the CMP, and the MTP. The congestion
5 reduction strategies considered for the proposed DNT 4B/5A would help alleviate congestion in
6 the SOV study boundary, but would not eliminate it. Therefore, the proposed DNT 4B/5A is
7 justified. The CMP analysis for added SOV capacity projects in the Transportation Management
8 Areas (TMA) is on file and available for review at the NCTCOG.

9

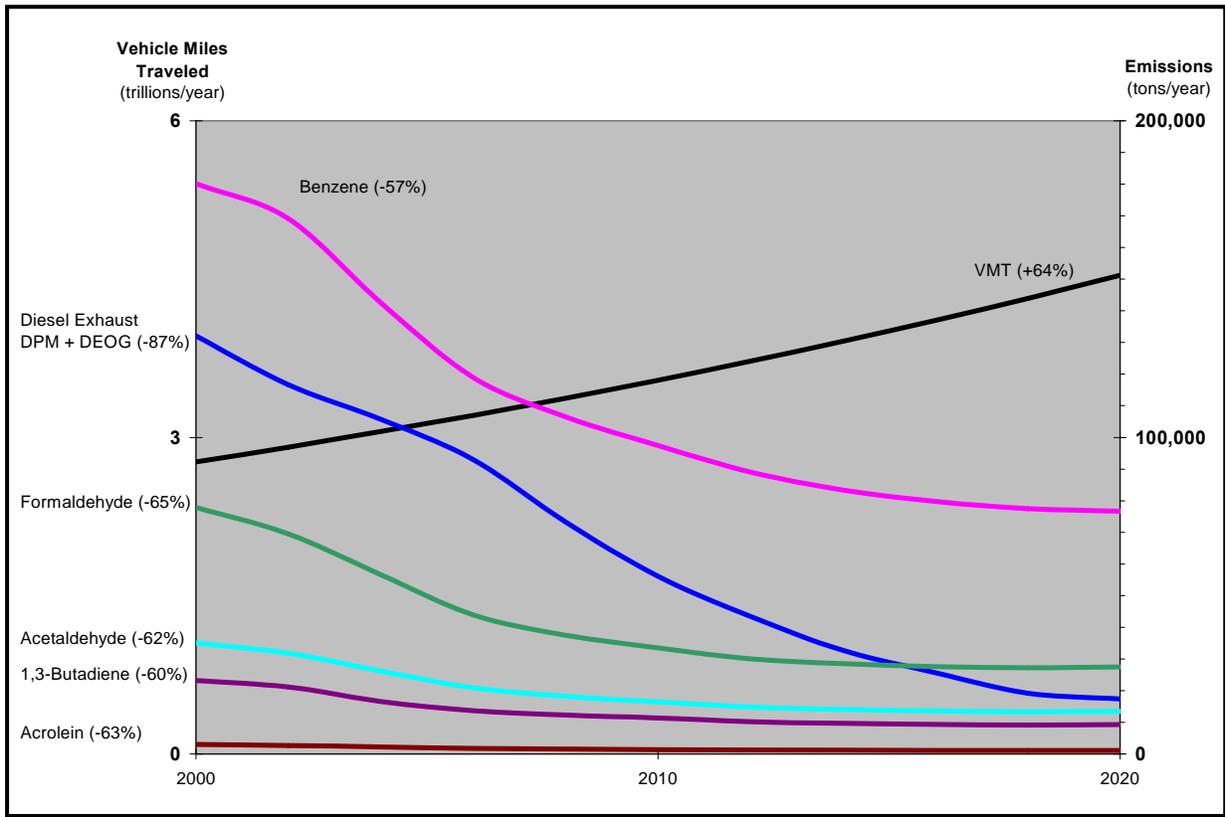
10 **MOBILE SOURCE AIR TOXICS (MSAT)**

11 The Environmental Protection Agency (EPA) is the lead federal agency for administering the
12 CAA and has certain responsibilities regarding the health effects of MSAT. The EPA issued a
13 Final Rule on *Controlling Emissions of Hazardous Air Pollutants from Mobile Sources*
14 (66 Federal Register 17229, March 29, 2001). This rule was issued under the authority in
15 Section 202 of the Clean Air Act (CAA). In its rule, the EPA examined the impacts of existing
16 and newly promulgated mobile source control programs, including its reformulated gasoline
17 (RFG) program, its national low emission vehicle (NLEV) standards, its Tier II motor vehicle
18 emissions standards and gasoline sulfur control requirements, and its proposed heavy duty
19 engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between
20 2000 and 2020, the Federal Highway Administration (FHWA) projects that even with a 64%
21 increase in vehicle miles traveled (VMT), these programs would reduce on-highway emissions
22 of benzene, formaldehyde, 1,3-butadiene, acrolein, and acetaldehyde by 57% to 65%, and
23 would reduce on-highway diesel particulate matter (DPM) emissions by 87%, as shown in
24 **Figure 1**, below.

25

1

Figure 1. VMT vs. MSAT Emissions, 2000-2020



2

3

4

5

6

7

Notes: For on-road mobile sources. Emissions factors were generated using MOBILE6.2. MTBE proportion of market for oxygenates is held constant, at 50%. Gasoline RVP and oxygenate content are held constant. VMT: Highway Statistics 2000, Table VM-2 for 2000, analysis assumes annual growth rate of 2.5%. "DPM + DEOG" is based on MOBILE6.2-generated factors for elemental carbon, organic carbon and SO4 from diesel-powered vehicles, with the particle size cutoff set at 10.0 microns.

8

9

10

Source: FHWA Interim Guidance on Air Toxic Analysis in NEPA Documents, February 3, 2006. *National trend information is provided as background. For specific locations, the trend lines may be different, depending on local parameters defining vehicle mix, fuels, meteorology and other factors."

11

12

13

14

15

16

17

18

19

20

21

22

In an ongoing review of MSAT, the EPA finalized additional rules under authority of Clean Air Act (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, the EPA adopted the following new requirements to significantly lower emissions of benzene and the other MSAT 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.

1 Beginning in 2011, petroleum refiners must meet an annual average gasoline benzene content
2 standard of 0.62% by volume for both reformulated and conventional gasoline nationwide. The
3 national benzene content of gasoline in 2007 is about 1% by volume. EPA standards to reduce
4 NMHC exhaust emissions from new gasoline-fueled vehicles will become effective in phases.
5 Standards for light-duty vehicles and trucks (equal to or less than 6000 pounds [lbs]) become
6 effective during the period of 2010 to 2013, and standards for heavy light-duty trucks (6,000 to
7 8,000 lbs) and medium-duty passenger vehicles (up to 10,000 lbs) become effective during the
8 period of 2012 to 2015. Evaporative requirements for portable gas containers become effective
9 with containers manufactured in 2009. Evaporative emissions must be limited to 0.3 grams of
10 hydrocarbons per gallon per day.

11
12 The EPA has also adopted more stringent evaporative emission standards (equivalent to
13 current California standards) for new passenger vehicles. The new standards became effective
14 in 2009 for light vehicles and in 2010 for heavy vehicles. In addition to the reductions from the
15 2001 rule, the new rules will significantly reduce annual national MSAT emissions. For example,
16 the EPA estimates that emissions in the year 2030, when compared to emissions in the base
17 year prior to the rule, will show a reduction of 330,000 tons of MSAT (including 61,000 tons of
18 benzene), reductions of more than 1,000,000 tons of volatile organic compounds (VOC), and
19 reductions of more than 19,000 tons of PM_{2.5} (i.e., particulate matter 2.5 microns in diameter, or
20 smaller). Please note that the EPA has not updated MOBILE6.2 emissions factors to capture
21 the February 2007 Rule emission reductions; therefore, it is not possible to reflect these
22 emission reductions in the quantitative MSAT analysis provided below.

23
24
25 **Monitored Levels of MSAT near the Project Area**

26
27 The Collin and Denton County areas monitor for various air pollutants using an established air
28 monitoring network. This network of monitors measures air quality and determines the levels of
29 the various pollutants in the air. Not all monitors sample for the same pollutants, and not all
30 monitors have 1 year of complete data to compile an annual average for any given pollutant. For
31 these reasons, data from multiple monitors must be examined in order to analyze the pollution
32 concentrations within the proposed DNT 4B/5A project area, as shown in **Table 2**. Air quality
33 monitors are located between approximately 10.0 miles and 23.25 miles from the proposed DNT
34 4B/5A. The closest monitoring station for nitrogen oxides (NO_x) and ozone (O₃) used for
35 National Ambient Air Quality Standard (NAAQS) compliance is located 10.22 miles from the
36 proposed DNT 4B/5A. The official monitor data is found on the EPA's national air quality monitor
37 Web site (www.epa.gov/air/data).

Table 2. Local Monitor Data

Monitor ID (TCEQ / EPA)	2008 1-Hour Annual Average NO _x (ppm)	2008 8-Hour 4th max - O ₃ (ppm) Standard is a 3 year average which must be 0.075 ppm or less	2008 24-Hour 2 nd -Quarterly Annual Lead (ug/m ³)	2008 24-Hour Annual Average PM _{2.5} (ug/m ³)	2008 24-Hour Annual Average PM ₁₀ (ug/m ³)	2008 24-Hour Annual Average Acetaldehyde (ppbC)	2008 24-Hour Annual Average Acrolein (ppbC)	2008 24-Hour Annual Average Benzene (ppbC)	2008 24-Hour Annual Average 1,3 Butadiene (ppbC)	2008 24-Hour Annual Average Formaldehyde (ppbC)	Approximate Distance (miles) from Proposed Project
480850003	N/A	N/A	0.160	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11
480850005	N/A	0.079	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12
480850007	N/A	N/A	0.100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10
480850009	N/A	N/A	1.190	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22
48-121-0034-43218-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.066	N/A	23
48-121-0034-45201-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.097	N/A	N/A	23
481210034	0.007	0.084	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23
481211032	N/A	0.08	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10

Note: EPA disclaimer regarding these data: "Readers are cautioned not to infer a qualitative ranking order of geographic areas based on Air Data reports. Air pollution levels measured in the vicinity of a particular monitoring site may not be representative of the prevailing air quality of a county or urban area. Pollutants emitted from a particular source may have little impact on the immediate geographic area, and the amount of pollutants emitted does not indicate whether the source is complying with applicable regulations."
Source: www.epa.gov/air/data (November 2010).

2
3

Project Specific MSAT Information

4
5

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 project (see "Unavailable Information for Project Specific MSAT Impact Analysis" below for more information). In Chapter 3 of its Regulatory Impact Analysis (RIA) for the 2007 MSAT rules, the 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 the following Web site: <http://www.epa.gov/otaq/regs/toxics/fr-ria-sections.htm>.

12
13

However, it is possible to quantitatively assess the "relative" levels of future MSAT emissions under the project. Although a quantitative assessment cannot identify and measure health impacts from MSAT, it can give a basis for identifying and comparing the potential differences among MSAT emissions, if any, from the various alternatives. The quantitative 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.

21
22
23

1 The VMT estimated for the Build Alternative is higher than that for the No Build Alternative,
2 because the additional capacity attracts rerouted trips from elsewhere in the transportation
3 network. This increase in VMT would lead to higher MSAT emissions for the action alternative
4 along the highway corridor, along with a corresponding decrease in MSAT emissions along the
5 parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due
6 to increased speeds; according to the EPA's MOBILE6 emissions model, emissions of all of the
7 priority MSAT except for diesel particulate matter decrease as speed increases. The extent to
8 which these speed-related emissions decreases would offset VMT-related emissions increases
9 cannot be reliably projected due to the inherent deficiencies of technical models.

10
11 Regardless of the alternative chosen, emissions would likely be lower than present levels in the
12 design year as a result of the EPA's national control programs that are projected to reduce
13 MSAT emissions by 57% to 87% between 2000 and 2020. Local conditions may differ from
14 these national projections in terms of fleet mix and turnover, VMT growth rates, and local control
15 measures. However, the magnitude of the EPA-projected reductions is so great that MSAT
16 emissions in the study area are likely to be lower in the future in almost all cases.

17
18 The additional travel lanes contemplated as part of the project alternatives would have the effect
19 of moving some traffic closer to nearby homes, schools and businesses; therefore, under each
20 alternative there may be localized areas where ambient concentrations of MSAT could be
21 higher under the Build Alternative than the No Build Alternative. The localized increases in
22 MSAT concentrations would likely be most pronounced along the expanded tollway sections
23 that would be built along highly developed commercial and residential areas and major
24 intersections, such as the proposed DNT 4B/5A at Farm to Market Road (FM) 428 intersection
25 and the DNT 4B/5A at FM 121 intersection. However, as discussed above, the magnitude and
26 the duration of these potential increases compared to the No-build Alternative cannot be
27 accurately quantified due to the inherent deficiencies of current models. In sum, when a
28 roadway is widened and, as a result, moves closer to receptors, the localized level of MSAT
29 emissions for the Build Alternative could be higher relative to the No Build Alternative, but this
30 could be offset due to increases in speeds and reductions in congestion (which are associated
31 with lower MSAT emissions). Also, MSAT will be lower in other locations when traffic shifts
32 away from them. However, on a regional basis, the EPA's vehicle and fuel regulations, coupled
33 with fleet turnover, will over time cause substantial reductions that, in almost all cases, will
34 cause region-wide MSAT levels to be substantially lower than today.

35
36 ***Sensitive Receptor Analysis***

37 Dispersion studies have shown that the "roadway" air toxics start to drop off at about 328 feet
38 (100 meters). By 1,640 feet (500 meters), most studies have found it very difficult to distinguish
39 the roadway emissions from background air toxic levels in any given area. Sensitive receptors
40 include those facilities most likely to contain large concentrations of the more sensitive
41 population (hospitals, schools, licensed daycare facilities, and elder care facilities). No sensitive
42 receptors were identified within 1,640 feet (500 meters) from the proposed DNT 4B/5A.

1 **MSAT Modeling**

2 A quantitative analysis of mass air toxic emissions from the travel study area of the proposed
 3 DNT 4B/5A was completed by following the plus or minus (+/- 5%) “link by link” methodology
 4 and by using the latest version of the EPA’s mobile emission factor model (MOBILE6.2). The
 5 travel study area used for MSAT analysis is the same area as the Metropolitan Planning Area
 6 within the NCTCOG Region (i.e., which does not include Grayson County). The analyzed
 7 “affected transportation network” is a network that represents the traffic volumes that are
 8 expected to change by a certain threshold as a result of project construction. The threshold for
 9 this project was based on the ultimate build-out year +/-5% vehicle volume change relative to
 10 2030 No Build vehicle volumes. The 2030 +/-5% links were selected by overlapping common
 11 data base files by using the aid of ArcGIS 9.1. The resulting “affected transportation network” for
 12 scenario years 2025 and 2030 includes those links determined to change +/- 5% in 2030. The
 13 2009 +/-5% links did not have any common database field and were selected manually using
 14 ArcMap 9.3. For the purpose of this analysis three scenarios were modeled:

- 15
- 16 • “2009 base year” or existing condition in 2009;
- 17 • “2025 interim year” build and no-build; and,
- 18 • “2030 design year” build and no-build.
- 19

20 Total Emission of MSAT for the Build and No-Build Alternatives

21 Specific data from the MSAT study area of the NCTCOG Regional Transportation Model were
 22 used to determine the mass of MSAT emissions associated with the build and no-build scenario.
 23 In addition, the base case or existing conditions mass of MSAT was also modeled. The total
 24 mass of MSAT in the year 2009 (base case) was higher than either the build or no-build
 25 scenarios in the years 2025 and 2030. This is reflective of the overall national trend in MSAT as
 26 previously described. The mass of emissions associated with the base case, interim year, and
 27 design year are shown in **Table 3**, and graphically portrayed in **Figure 2**.

Table 3. MSAT Emissions by Scenario (Tons/Year)

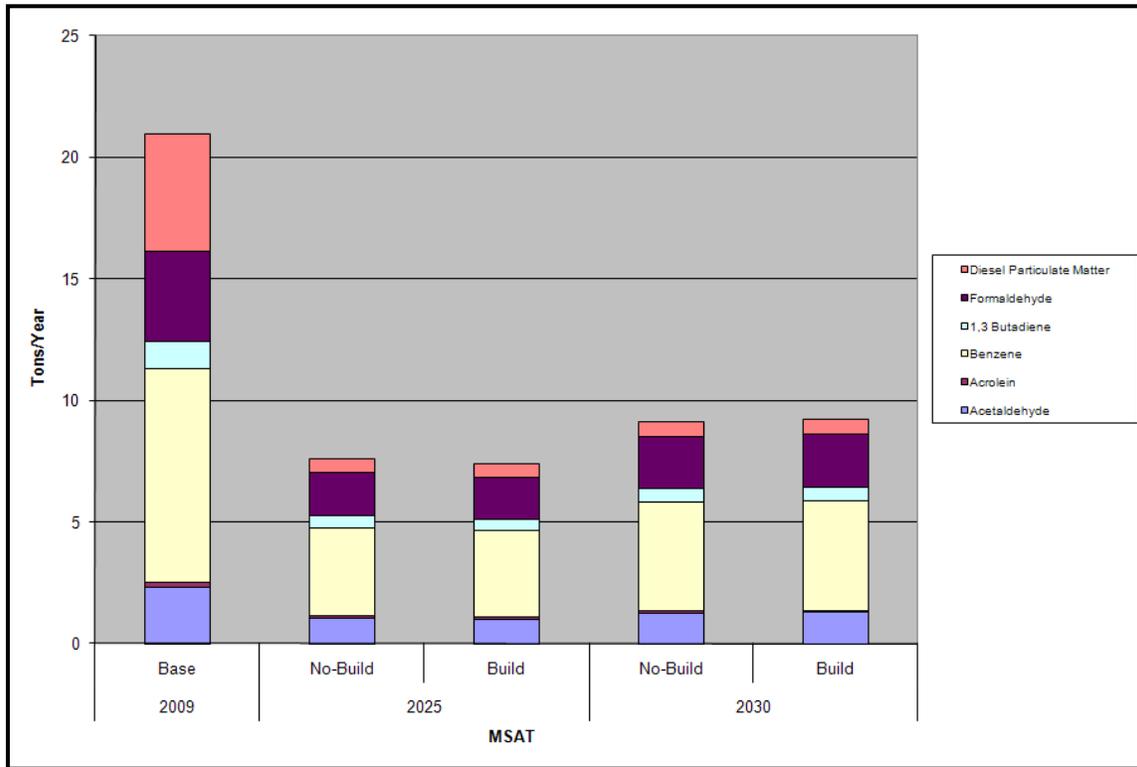
Compound	Year / Scenario					% Difference	
	2009 Base	2025 No Build	2025 Build	2030 No Build	2030 Build	2009 to 2030 No Build	2009 to 2030 Build
Acetaldehyde	2.329	1.043	1.012	1.255	1.271	-46%	-45%
Acrolein	0.168	0.078	0.076	0.093	0.095	-44%	-44%
Benzene	8.792	3.644	3.581	4.446	4.507	-49%	-49%
1.3 Butadiene	1.124	0.469	0.459	0.570	0.577	-49%	-49%
Formaldehyde	3.713	1.780	1.727	2.127	2.151	-43%	-42%
Diesel PM	4.855	0.580	0.555	0.617	0.621	-87%	-87%
Total MSAT	20.980	7.594	7.410	9.108	9.220	-57%	-56%
Total VMT (Miles/Year)	706,942,103	792,750,234	778,203,272	980,467,314	993,409,251	39%	41%

Note: For the “interim year 2025” Build and No-Build scenario 2025 network with 2025 VMT and 2025 (projected tollway opening year) emission rates were utilized to model “worst case” conditions.

Source: Study Team, November 2010.

1
2

Figure 2. Projected Changes in MSAT Emissions by Scenario over Time

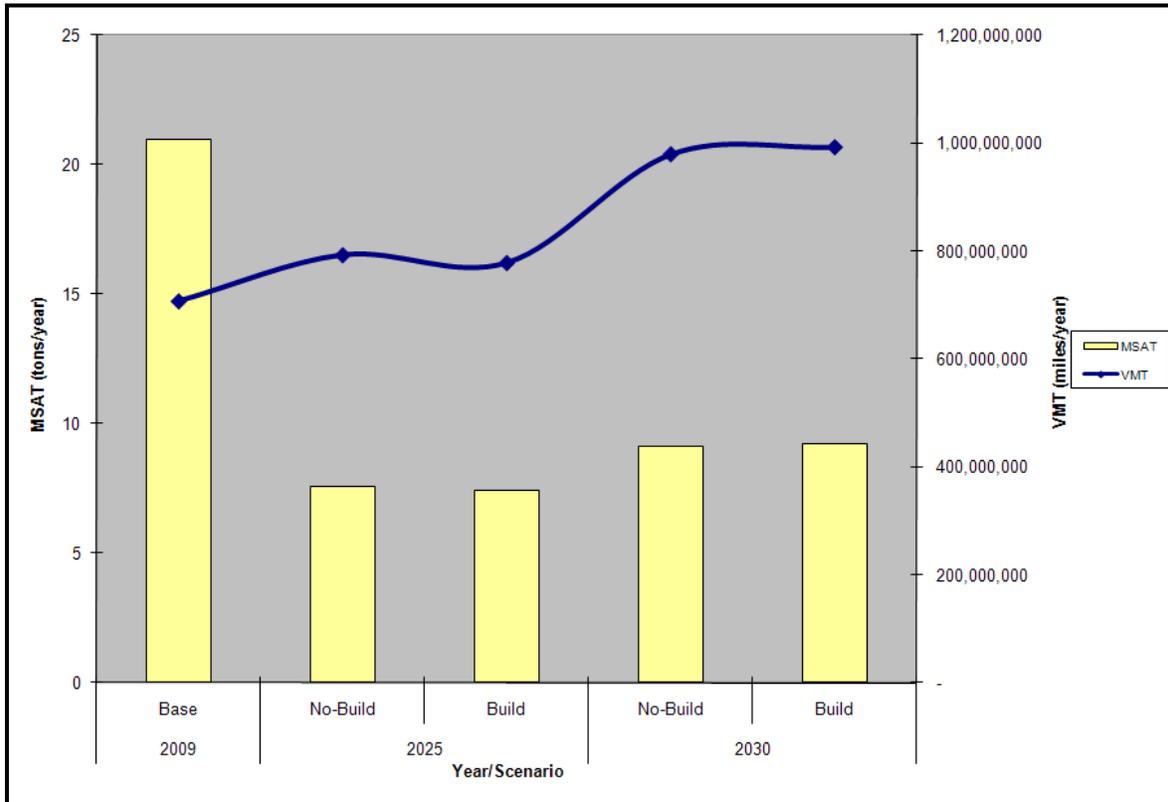


3
4
5
6
7
8
9
10
11
12
13
14
15

The analysis indicates a decrease in MSAT emissions can be expected for both the Build and No-Build Alternatives for the interim year 2025 and design year 2030 versus the 2009 base year. Emissions of total MSAT are predicted to decrease by 56% in 2030 compared with 2009 levels for build scenario. If emissions are plotted over time, a decreasing level of MSAT emissions can be seen (see **Figure 3**, below); however, overall VMT continues to rise.

Of the six priority MSAT compounds, benzene, formaldehyde and DPM contribute the most to emissions total (see **Table 3** and **Figure 2**, above). In future years, a decline in benzene and formaldehyde is anticipated (49 and 42% reduction from 2009 to 2030, Build, respectively), and an even larger reduction in DPM emissions is predicted (87% decrease from 2009 to 2030, Build).

Figure 3. Comparison of MSAT Emissions vs. VMT by Scenario



2

4 These estimated emission levels are for all MSAT evaluated and are based on the projected
 5 total VMT. The reasons for these dramatic improvements are two fold, a change in vehicle fuels,
 6 both gasoline and diesel fuel, and a change in emission standards that both light-duty and
 7 heavy-duty on-highway motor vehicles must meet. The EPA predicts substantial future air
 8 emission reductions as the agency’s new light-duty and heavy-duty on-highway fuel and vehicle
 9 rules come into effect (Tier 2, light-duty vehicle standard, Heavy-Duty Diesel Vehicle and
 10 (HDDV) standards and low sulfur diesel fuel, and the EPA’s proposed Off-Road Diesel Engine
 11 and Fuel Standard). These projected air emission reductions will be realized even with the
 12 predicted continued growth in VMT. See the EPA’s Tier II Regulatory Impact Analysis (RIA) and
 13 the EPA’s HDDV RIA. Based on the procedures outlined above, the proposed DNT 4B/5A is
 14 estimated to emit the total amounts of the six priority air toxics shown in **Table 4**.

Table 4. MSAT Emissions (Tons Per Year)

Year	DNT 4B5A Project (Affected Traffic Network)
2009 Base	21.0
2025 No Build	7.6
2025 Build	7.4
2030 No Build	9.1
2030 Build	9.2
Source: Study Team November 2010.	

1 Discussion

2 Regardless of the alternative chosen, emissions would likely be lower than present levels in the
3 future year as a result of the EPA's national control programs that are projected to reduce
4 MSAT emissions by 57% to 87% between 2000 and 2020, and even more than these
5 reductions when factoring in the 2008 MSAT rule. Local conditions may differ from these
6 national projections in terms of fleet mix, vehicle turnover rates, VMT growth rates, and local
7 control measures. However, the magnitude of the EPA-projected reductions is so great that
8 MSAT emissions in the study area are likely to be lower in the future in all cases.

9

10 The EPA's highway vehicle emission factor model, MOBILE, is a program that provides average
11 in-use fleet emission factors for criteria pollutants (CO, and NO_x) and also provides emission
12 factors for VOC. These emission factors can be estimated for any year between 1952 and 2050
13 and under various conditions affecting in-use emission levels. The output from the model is in
14 the form of emissions factors expressed as grams of pollutant per vehicle mile traveled (g/mi).

15

16 When evaluating the future options for upgrading a transportation corridor, the major mitigating
17 factor in reducing MSAT emissions is the implementation the EPA's new motor vehicle emission
18 control standards. Substantial decreases in MSAT emissions will be realized from a base year
19 through an estimated time of completion for a planned project and its design year. Accounting
20 for anticipated increases in VMT and varying degrees of efficiency of vehicle operation, total
21 MSAT emissions were predicted to decline more than 49% from 2009 to 2030 for this project.

22

23 The Denton and Collin County area is in attainment for both PM₁₀ and PM_{2.5}. The MSAT from
24 mobile sources, especially benzene, have dropped dramatically since 1995, and are expected
25 to continue dropping. The introduction of RFG has lead to a substantial part of this
26 improvement. In addition, Tier 2 automobiles introduced in model year 2004 will continue to help
27 reduce MSAT. Diesel exhaust emissions have been falling since the early 1990s with the
28 passage of the CAA. The CAA provided for improvement in diesel fuel through reductions in
29 sulfur and other diesel fuel improvements. In addition, the EPA has further reduced the sulfur
30 level in diesel fuel, effective in 2006. The EPA also has called for dramatic reductions in NO_x
31 emissions, and PM from on-road and off-road diesel engines.

32

33 Unavailable Information for Project Specific MSAT Impact Analysis

34 This document includes a basic analysis of the likely MSAT emission impacts of this project.
35 However, available technical tools do not enable the prediction of project-specific health impacts
36 resulting from the emission changes associated with the scenarios addressed in this EA. Due to
37 these limitations, the following discussion is included in accordance with Council on
38 Environmental Quality regulations [40 CFR 1502.22(b)] regarding incomplete or unavailable
39 information.

40

41 *Information that is Unavailable or Incomplete.*

42 Evaluating the environmental and health impacts from MSAT on a proposed highway project
43 would involve several key elements, including emissions modeling, dispersion modeling in order
44 to estimate ambient concentrations resulting from the estimated emissions, exposure modeling

1 in order to estimate human exposure to the estimated concentrations, and then final
2 determination of health impacts based on the estimated exposure. Each of these steps is
3 encumbered by technical shortcomings or uncertain science that prevents a more complete
4 determination of the MSAT health impacts of this project.

5
6 1. Emissions: The EPA tools to estimate MSAT emissions from motor vehicles are not sensitive
7 to key variables determining emissions of MSAT in the context of highway projects. While
8 MOBILE6.2 is used to predict emissions at a regional level, it has limited applicability at the
9 project level. MOBILE6.2 is a trip-based model – emission factors are projected based on a
10 typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE6.2
11 does not have the ability to predict emission factors for a specific vehicle operating condition at
12 a specific location at a specific time. Because of this limitation, MOBILE6.2 can only
13 approximate the operating speeds and levels of congestion likely to be present on the largest-
14 scale projects, and cannot adequately capture emissions effects of smaller projects. For
15 particulate matter, the model results are not sensitive to average trip speed, although the other
16 MSAT emission rates do change with changes in trip speed. Also, the emission rates used in
17 MOBILE6.2 for both particulate matter and MSAT are based on a limited number of tests of
18 mostly older-technology vehicles. Lastly, in its discussion of PM under the conformity rule, the
19 EPA has identified problems with MOBILE6.2 as an obstacle to quantitative analysis.

20
21 These deficiencies compromise the capability of MOBILE6.2 to estimate MSAT emissions.
22 MOBILE6.2 is an adequate tool for projecting emissions trends, and performing relative
23 analyses between alternatives for very large projects, but it is not sensitive enough to capture
24 the effects of travel changes tied to smaller projects or to predict emissions near specific
25 roadside locations. However, MOBILE6.2 is currently the only available tool for use by the
26 FHWA/TxDOT and may function adequately for larger scale projects for comparison of
27 alternatives.

28
29 2. Dispersion: The tools to predict how MSAT disperse are also limited. The EPA's current
30 regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a
31 decade ago for the purpose of predicting episodic concentrations of carbon monoxide to
32 determine compliance with the NAAQS. The performance of dispersion models is more
33 accurate for predicting maximum concentrations that can occur at some time at some location
34 within a geographic area. This limitation makes it difficult to predict accurate exposure patterns
35 at specific times at specific highway project locations across an urban area to assess potential
36 health risk. Along with these general limitations of dispersion models, FHWA is also faced with a
37 lack of monitoring data in most areas for use in establishing project-specific MSAT background
38 concentrations.

39
40 3. Exposure Levels and Health Effects: Finally, even if emission levels and concentrations of
41 MSAT could be accurately predicted, shortcomings in current techniques for exposure
42 assessment and risk analysis preclude us from reaching meaningful conclusions about project-
43 specific health impacts. Exposure assessments are difficult because it is difficult to accurately
44 calculate annual concentrations of MSAT near roadways, and to determine the portion of a year

1 that people are actually exposed to those concentrations at a specific location. These difficulties
2 are magnified for 70-year cancer assessments, particularly because unsupportable assumptions
3 would have to be made regarding changes in travel patterns and vehicle technology (which
4 affects emission rates) over a 70-year period. There are also considerable uncertainties
5 associated with the existing estimates of toxicity of the various MSAT, because of factors such
6 as low-dose extrapolation and translation of occupational exposure data to the general
7 population. Because of these shortcomings, any calculated difference in health impacts
8 between alternatives is likely to be much smaller than the uncertainties associated with
9 calculating the impacts.

10
11 *Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSAT.*

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

17
18 Exposure to toxics has been a focus of a number of the EPA's efforts. Most notably, the agency
19 conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates
20 of human exposure applicable to the county level. While not intended for use as a measure of or
21 benchmark for local exposure, the modeled estimates in the NATA database best illustrate the
22 levels of various toxics when aggregated to a national or state level. The EPA is in the process
23 of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated
24 Risk Information System (IRIS) is a database of human health effects that may result from
25 exposure to various substances found in the environment. The IRIS database is located at
26 <http://www.epa.gov/iris>. The following toxicity information for the six prioritized MSAT was taken
27 from the IRIS database Weight of Evidence Characterization summaries. This information
28 represents the Agency's most current evaluations of the potential hazards and toxicology of
29 these chemicals or mixtures.¹

- 30
31
- 32 • **Benzene** is characterized as a known human carcinogen.
 - 33 • The potential carcinogenicity of **acrolein** cannot be determined because the existing data
34 are inadequate for an assessment of human carcinogenic potential for either the oral or
35 inhalation route of exposure.
 - 36 • **Formaldehyde** is a probable human carcinogen, based on limited evidence in humans, and
37 sufficient evidence in animals.
 - 38 • **1,3-butadiene** is characterized as carcinogenic to humans by inhalation.
 - 39 • **Acetaldehyde** is a probable human carcinogen based on increased incidence of nasal
40 tumors in male and female rats and laryngeal tumors in male and female hamsters after
41 inhalation exposure.
 - 42 • **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

¹ EPA Office of Research and Development, National Center for Environmental Assessment: IRIS database of human health effects that may result from exposure to various substances found in the environment. <http://www.epa.gov/iris/>.

1 particulate matter and diesel exhaust organic gases. Diesel exhaust also represents chronic
2 respiratory effects, possibly the primary non-cancer hazard from MSAT. Prolonged
3 exposures may impair pulmonary function and could produce symptoms, such as cough,
4 phlegm, and chronic bronchitis. Exposure relationships have not been developed from these
5 studies.
6

7 There have been other studies that address MSAT health impacts in proximity to roadways. The
8 Health Effects Institute, a non-profit organization funded by the EPA, FHWA, and industry has
9 undertaken a major series of studies to research near-roadway MSAT hot spots, the health
10 implications of the entire mix of mobile source pollutants, and other topics. The final summary of
11 the series is not expected for several years.
12

13 Some recent studies have reported that proximity to roadways is related to adverse health
14 outcomes – particularly respiratory problems. Much of this research is not specific to MSAT,
15 instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot
16 evaluate the validity of these studies, but more importantly, they do not provide information that
17 would be useful to alleviate the uncertainties listed above and enable us to perform a more
18 comprehensive evaluation of the health impacts specific to the project. In addition, the EPA has
19 not developed health based standards for MSAT, and instead has focused on regulation to
20 significantly reduce on-road MSAT emissions nationwide.
21

22 In the preamble to the 2007 MSAT rule, the EPA summarized recent studies with the following
23 statement: "Significant scientific uncertainties remain in our understanding of the relationship
24 between adverse health effects and near-road exposure, including the exposures of greatest
25 concern, the importance of chronic versus acute exposures, the role of fuel type (e.g., diesel or
26 gasoline) and composition (e.g., % aromatics), relevant traffic patterns, the role of co-stressors
27 including noise and socioeconomic status, and the role of differential susceptibility within the
28 'exposed' populations" (Citation: Volume 73 Federal Register Page 8441 (February 26, 2007)
29 Control of Hazardous Air Pollutants from Mobile Sources).
30

31 *Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable*
32 *Significant Adverse Impacts on the Environment, and Evaluation of Impacts Based upon*
33 *Theoretical Approaches or Research Methods Generally Accepted in the Scientific Community.*
34 Due to the uncertainties outlined above, an assessment of the effects of MSAT emissions
35 impacts on human health cannot be made at the project level. While available tools do allow us
36 to reasonably predict relative emissions changes between alternatives for this project, the
37 amount of MSAT emissions from the proposed DNT 4B/5A and MSAT concentrations or
38 exposures created by the proposed DNT 4B/5A cannot be predicted with enough accuracy to be
39 useful in estimating health impacts. As noted above, the current emissions model is not capable
40 of serving as a meaningful emissions analysis tool for smaller projects. Therefore, the relevance
41 of the unavailable or incomplete information is that it is not possible to make a determination of
42 whether any of the alternatives would have "significant adverse impacts on the human
43 environment."

1 In this document, a quantitative analysis of MSAT emissions relative to the various alternatives
2 has been conducted. The analysis indicates that project alternatives may result in increased
3 exposure to MSAT emissions in certain locations, although the concentrations and duration of
4 exposures are uncertain, and because of this uncertainty, the health effects from these
5 emissions cannot be estimated.

6 7 Conclusion

8 The ability to discern differences in MSAT emissions among transportation alternatives is
9 difficult given the uncertainties associated with forecasting travel activity and air emissions
10 23 years or more into the future. The main analytical tool for predicting emissions from on-road
11 motor vehicles is the EPA's MOBILE6.2 model. The MOBILE6.2 model is regional in scope and
12 has limited applicability to a project-level analysis. However, the effects of a major transportation
13 project extend beyond its corridor and an evaluation within the context of an affected
14 transportation network can be accomplished.

15
16 When evaluating the future options for upgrading a transportation corridor, the major mitigating
17 factor in reducing MSAT emissions is the implementation of the EPA's new motor vehicle
18 emission control standards. Decreases in MSAT emissions will be realized from the 2009
19 through an estimated time of completion for a planned project and its design year some
20 20 years in the future. Accounting for anticipated increases in VMT and varying degrees of
21 efficiency of vehicle operation, total MSAT emissions are predicted to decline approximately
22 56% from 2009 to 2030. While benzene emissions are predicted to decline 49%, emissions of
23 DPM are predicted to decline even more (i.e., 87%). MSAT emissions decreases from the base
24 year are substantial even with the associated increase in VMT in the travel study area.

25
26 The MSAT from mobile sources, especially benzene, have dropped dramatically since 1995,
27 and are expected to continue dropping. The introduction of reformulated gasoline has lead to a
28 substantial part of this improvement. In addition, Tier II automobiles introduced in model year
29 2004 will continue to help reduce MSAT. Diesel exhaust emissions have been falling since the
30 early 1990s with the passage of the Clean Air Act Amendments (CAAA). The 1990 CAAA
31 provided for improvement in diesel fuel through reductions in sulfur and other diesel fuel
32 improvements. In addition, the EPA has further reduced the sulfur level in diesel fuel, which took
33 effect in 2006. The EPA also has called for dramatic reductions in NO_x emissions, and PM from
34 on-road and off-road diesel engines. MSAT as in relation to the proposed DNT 4B/5A are not
35 expected to increase overall air toxics in the Dallas/Fort Worth area in the future years
36 investigated.

Appendix 2-11

Traffic Noise Analysis Supporting Information

Traffic Noise Analysis Supporting Information

Dallas North Tollway Extension Phase 4B/5A (DNT 4B/5A)

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 Federal Highway Administration (FHWA) has established the following Noise Abatement Criteria (NAC) (see **Table 1**) for various land use activity areas that are used as one of two means to determine when a traffic noise impact would occur.

Table 1: FHWA Noise Abatement Criteria

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

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

1 A noise impact would occur when either the absolute or relative criterion is met:

2

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

7

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

13

14 When a traffic noise impact occurs, noise abatement measures must be considered. A noise
15 abatement measure is any positive action taken to reduce the impact of traffic noise on an
16 activity area.

17

18 The proposed project would not result in a traffic noise impact.

19

20 Noise associated with the construction of the project is difficult to predict. Heavy machinery, the
21 major source of noise in construction, is constantly moving in unpredictable patterns. However,
22 construction normally occurs during daylight hours when occasional loud noises are more
23 tolerable. None of the receivers are expected to be exposed to construction noise for a long
24 duration; therefore, any extended disruption of normal activities is not expected. Provisions will
25 be included in the plans and specifications that require the contractor to make every reasonable
26 effort to minimize construction noise through abatement measures such as work-hour controls
27 and proper maintenance of muffler systems.

Appendix 2-12

Community Impact Assessment Supporting Information

1 **Community Impact Assessment Supporting Information**

2 **Dallas North Tollway Extension Phase 4B/5A (DNT 4B/5A)**

3

4 The proposed DNT 4B/5A is located along the northern Collin-Denton county line and in a rural
5 area of southwest Grayson County. In Collin and Denton counties, a small portion of the
6 proposed DNT 4B/5A corridor is located within the Celina city limits; however, the majority is
7 located within the extraterritorial jurisdiction (ETJ) of the City of Celina. Within Denton County,
8 the City of Pilot Point has annexed the Farm to Market Road (FM) 455 right-of-way (ROW) that
9 intersects the proposed DNT 4B/5A, but none of the adjacent properties. Pilot Point will only be
10 discussed in a regional context in this assessment because the city limits that extend beyond
11 the FM 455 ROW are over 6 miles away from the proposed DNT 4B/5A. In Grayson County, the
12 proposed DNT 4B/5A is located within the Gunter city limits and the city’s ETJ. Although the
13 corridor passes through two cities and their ETJ, the proposed DNT 4B/5A project area is rural
14 in nature. Land use along the proposed DNT 4B/5A is predominantly agricultural. Large lot, rural
15 residences are located in the southern and northern portions of the proposed DNT 4B/5A
16 project area. Land along the central portion of the proposed DNT 4B/5A corridor is undeveloped
17 and used for agricultural purposes.

18

19 Due to the rural nature of the proposed DNT 4B/5A project area and the direct impacts to
20 agricultural land associated with the proposed project, the community was initially characterized
21 as agricultural. Agricultural data for Collin, Denton, and Grayson counties were gathered and
22 are shown in **Table 1** and discussed below. However, additional data gathered from local city
23 officials presents a different picture of the immediate DNT 4B/5A project area and this is
24 discussed in detail later.

1

Table 1. 2007 Census of Agriculture Data

Farm Characteristics	Collin Co.	Denton Co.	Grayson Co.
Number of Farms	2,235	2,575	2,823
Farmland (acres)	290,831	350,274	400,414
Size of County (acres)	566,942	613,041	626,679
% Farmland in County	51.3%	57.1%	63.9%
Average Size of Farm (acres)	130	136	147
Market Value of Products Sold	\$61,164,000	\$79,237,000	\$52,839,000
Top Crop Items (acres)			
Forage	46,288	53,579	67,781
Wheat for grain, all	28,681	23,636	26,189
Corn for grain	23,371	2,642	16,621
Sorghum for grain	13,915	10,045	10,052
Corn for silage	(D)*	--	--
Oats for grain	--	835	2,247
Top Livestock Inventory Items (number)			
Cattle and calves	34,998	47,160	56,832
Layers	7,814	(D)*	4,085
Horses and ponies	5,472	11,792	7,771
Goats, all	4,560	--	4,735
Sheep and lambs	1,403	--	--
Pullets for laying flock replacement	--	(D)*	--
Colonies of bees	--	(D)*	--
Broilers and other meat-type chickens	--	--	(D)*
* (D) = Disclosure of data not authorized; -- = Not ranked. Source: USDA 2007 Census of Agriculture Web site.			

2

3

4 Based on data in **Table 1**, greater than 50% of the land in each county was used for agricultural
5 purposes in 2007. To further define the community, information was gathered from the Texas
6 A&M System AgriLIFE Extension offices for Collin, Denton, and Grayson counties.

7

8 In Collin County, the Agriculture and Natural Resources Agent stated that the primary
9 agricultural commodities grown in northwestern Collin County are corn, wheat, grain sorghum,
10 annual and perennial hay crops, and cattle. The farmers and ranchers live locally with most of
11 their crops being sold locally. Cattle are also sold in local livestock markets as well as in
12 adjacent counties.

13

14 Although the Agriculture and Natural Resources Agent for Denton County was contacted more
15 than once, no response was received and no data were provided.

16

1 According to the Grayson County Agriculture and Natural Resources Agent, primary crops in
2 southwestern Grayson County are corn and wheat. Additionally, milo and soybeans are grown
3 in the area along with many small cattle farms. The majority of farmers live locally with their
4 products usually being sold elsewhere.
5

6 The AgriLIFE Extension program for each county offers Extension Program Area Committees
7 for specific agricultural groups (crops, livestock, horses, etc). It is through these committee
8 meetings with area ranchers and farmers that Extension Agents determine and plan
9 educational/information programs that would be beneficial to the agricultural community. Also, it
10 is from these meetings and interaction with the local agricultural population that the Extension
11 Agents identify a sense of community among ranchers and farmers in each county in the
12 proposed DNT 4B/5A project area.
13

14 Each extension office offers newsletters, workshops, and educational information to the
15 agricultural community in that office's corresponding county. In Grayson County, the Extension
16 News - Agriculture and Natural Resources newsletter is released every few months. Information
17 is provided on a variety of topics including cattle management, pest control, and turf care.
18 County-wide workshops are also offered to the agricultural community. Topics include bull
19 selection, private applicator training, feral hog trapping, and weed and brush management.
20 Additionally, information is provided on regional and state events and workshops, as well as
21 resources available from other agencies and foundations.
22

23 The Collin County Extension Office offers an event calendar for county-wide training,
24 conference, and tour/field day events. Examples of schedule events include Advanced
25 Horticultural Studies on Herbaceous Perennials, a training event; Emergency Preparedness for
26 Livestock and Horses, a conference event; and Fall Pecan Production Tour, a tour/field day
27 event. The calendar also includes regional and statewide events.
28

29 The Denton County Extension Office also releases a County Agriculture Letter. The letter
30 provides educational information, an events calendar, and descriptions of upcoming events
31 such as seminars, training events, committee meetings, and tours. Examples of committee
32 meetings are crops, forages, and beef committee meetings, and horse committee meetings.
33 Seminar events include the Denton County Open Hay Show and Clinic and a Pasture Drought
34 Recovery Seminar. Pesticides licensing and predator control programs are also offered. The
35 event calendar also includes regional and statewide events.
36

37 The availability of agriculture related events in each county allows for interaction among local
38 farmers and ranchers. This allows the agricultural community in each county to express ideas
39 and concerns specific to their county as well as participate in workshops, committees, and
40 seminars beneficial to county residents; therefore, creating a sense of community among
41 farmers and ranchers in each county.
42

1 As shown in **Table 1**, Collin, Denton, and Grayson counties still have a high percentage of land
2 devoted to agricultural practices which provides a county-wide sense of community unlike
3 Dallas County which identifies communities based on municipal or neighborhood boundaries.
4 Even though agricultural practices continue within the proposed DNT 4B/5A project area,
5 discussions with City of Gunter and City of Celina officials present a different picture of the
6 community in the immediate project area. Within the City of Celina, 95% of residents commute
7 south for work. About one dozen families still farm in Celina; however, the grain elevators
8 currently in use in Celina are not expected to last more than 1 year because there are not
9 enough farmers in the area to support them. In the City of Gunter, approximately 60% of
10 residents commute south for work.

11
12 The agricultural land west of Gunter and Celina has a diverse history. The lands were originally
13 owned by local farmers and ranchers but in the mid-twentieth century, Bunker Hunt, a Texas oil
14 tycoon once labeled the “world’s richest man,” began buying these lands and bringing in his own
15 ranch managers to the area to run the ranches. The locals took their profits and moved away. In
16 1980 Bunker Hunt’s fortune collapsed and much of the land he owned in the area was turned
17 over to his insurance company as collateral. The insurance company began selling the parcels
18 and much of the land was purchased by developers and investors. The property owners along
19 the proposed DNT 4B/5A are all developers or investors who are preparing to donate their land
20 to the North Texas Tollway Authority because they are aware of the economic benefits
21 associated with owning land adjacent to a toll road in the North Texas region. The majority of
22 the land surrounding the proposed DNT 4B/5A is not farmed by local families, but consists of
23 either large ranches or is farmed by someone paid to farm the land so that the property owner
24 can receive the agriculture tax exemption. Therefore, a sense of community related to shared
25 agricultural experiences is not prevalent in the immediate area of the proposed DNT 4B/5A even
26 though it is found within the county as a whole.

27

1 **SOCIOECONOMICS SUPPORTING DATA**

2 **Regional and Community Growth**

3 The North Central Texas Council of Governments (NCTCOG) is the Metropolitan Planning
 4 Organization for the North Central Texas region. The NCTCOG collects and forecasts
 5 demographic data; according to the *Census 2000*, the Dallas/Fort Worth region added nearly
 6 1.2 million residents since the 1990 census, accounting for nearly one-third of the total
 7 population growth in Texas. Regional and community growth in the vicinity of this project is
 8 expected to continue along present trends. **Table 2** summarizes the population and employment
 9 forecasts for Collin and Denton counties and their cities nearest to the proposed DNT 4B/5A
 10 project area. Grayson County is not a member of the NCTCOG, but is a member of the Texoma
 11 Council of Governments (COG). Employment forecast data from Texoma COG is currently
 12 unavailable.

13
 14 **Table 2. Population and Employment Forecasts**

	2000	2010	2030	% Change from 2000-2030
Collin County				
Population	492,276	749,343	1,166,645	137%
Employment	204,057	292,533	517,264	153%
City of Celina				
Population	2,549	3,665	25,216	889%
Employment	1,589	2,144	5,690	258%
Denton County				
Population	428,080	643,572	1,085,343	154%
Employment	152,818	228,191	413,453	171%
City of Pilot Point				
Population	3,419	4,348	20,079	688%
Employment	1,581	1,734	3,648	131%
Grayson County				
Population	110,595**	120,030*	175,643**	59%
City of Gunter				
Population	1,230**	1,351*	3,128**	154%
Source: NCTCOG 2030 Demographic Forecast and Census 2000 (adjusted from Census data; does not include group quarters); * - Census.gov 2009 population estimate; ** - Texoma COG.				

15
 16
 17 As shown in **Table 2**, the population of Collin County is expected to grow by 137% and
 18 employment is expected to grow by 153%. The population of Denton County is expected to
 19 grow by 154% between 2000 and 2030, and employment is expected to grow by 171% within
 20 the same time period. In Grayson County, the population is expected to grow by 59% between
 21 2000 and 2030.

1 The proposed DNT 4B/5A would improve traffic mobility, access through the study area,
 2 regional connectivity and would likely increase commercial business opportunities along and
 3 near the proposed tollway. Improved commercial business opportunities would provide more
 4 jobs and create incentive for new residential developments. The improved access and regional
 5 connectivity would also support projected population growth.

6
 7 **Community Cohesion**

8 Division of agricultural land and parcels by the proposed DNT 4B/5A would be kept to a
 9 minimum. The proposed DNT 4B/5A alignment follows the Collin-Denton county line. The
 10 county line serves as a boundary for the majority of parcels along this portion of the proposed
 11 DNT 4B/5A. Of the 12 property owners located within Collin and Denton counties who would be
 12 affected, only four property owners would have their property divided because of the proposed
 13 DNT 4B/5A. This would occur because of the S-curve at the southern project terminus which
 14 shifts the proposed tollway to the county line. In Grayson County, the majority of the proposed
 15 alignment follows current parcel boundaries as well as an existing roadway (Scharff Road).
 16 Three out of the five property owners in Grayson County would have their property divided
 17 because of the proposed extension. Division of property would occur at the S-curve north of
 18 County Road (CR) 60. The S-curves in the southern and northern portions of the project area
 19 allow the proposed DNT 4B/5A alignment to shift west from the connection at FM 428 with the
 20 planned Dallas North Tollway Extension Phase 4A (DNT 4A) to follow the Collin-Denton county
 21 line. Due to this shift in the proposed DNT 4B/5A alignment, the number of potentially divided
 22 parcels and potential displacements is substantially less than if the proposed alignment
 23 extended directly north from the northern terminus of the planned DNT 4A. **Table 3** below
 24 summarizes the impacts to agricultural land in each county.

25
 26 **Table 3. Impacts to Agricultural Lands by County**

County	Agriculture Land Impacts (acres)	Agricultural Impacts (% of County Ag. Land)
Collin	169.2*	0.06%
Denton	202.6*	0.06%
Grayson	205.1*	0.05%
Source: USDA 2007 Census of Agriculture; * - calculated using ArcGIS.		

27
 28
 29 As shown in **Table 3**, impacts to agricultural land in each county would be less than 1% of the
 30 2007 Census of Agriculture total agricultural land for each county.

31
 32 Public meetings were held on March 9 and 11, 2010 regarding the proposed DNT 4B/5A. These
 33 meetings were held during the planning stage of the project when multiple alignments were
 34 being considered. Verbal public comments were recorded at each public meeting in addition to
 35 comment cards that were provided to attendees to comment on the proposed alignment
 36 alternatives. Comments were also submitted by mail and email. A total of 291 people provided

1 comments, of which 152 identified themselves as being from the cities of Celina, Pilot Point, or
2 Gunter. A total of 137 respondents favored the county line alignment, described as the
3 Yellow-Red (Middle) Alternative in the 2010 study of conceptual alternative alignments for the
4 proposed DNT 4B/5A (see **Appendix 1-1**). The number of people favoring the Orange-Red
5 (East) Alternative through Celina was 113, the number of people who preferred the Green
6 (West) Alternative through Pilot Point was 44, and two people favored the No-Build Alternative.
7 (Note: some respondents reported that they were in favor of/opposed to more than one
8 alignment.) Based upon these results, it appears that residents of the rural communities of
9 Celina, Pilot Point, and Gunter are generally in favor of the proposed DNT 4B/5A continuing
10 north through Collin and Denton counties into Grayson County. Of those that preferred the
11 Yellow-Red (Middle) Alternative, a frequently-stated reason for favoring this alignment was the
12 distribution of potential economic benefit among Collin, Denton, and Grayson counties.

13
14 Negative impacts to community cohesion are not expected. The identified agricultural
15 community is widespread, and impacts would occur on the periphery of each county community
16 because the proposed DNT 4B/5A alignment is along the county line. No distinct
17 neighborhoods, ethnic groups, or other specific groups have been identified along the proposed
18 DNT 4B/5A limits.

19
20 Future benefits to community cohesion are anticipated. The proposed DNT 4B/5A would
21 eventually lead to additional growth and development along the entire corridor. Although exact
22 types of potential development are unknown, it is likely that new development would consist of
23 commercial, retail and entertainment facilities. The potential development would provide new
24 employment opportunities ranging from minimum wage jobs to professional, salaried
25 opportunities. As more residents of the cities of Celina and Gunter are able to work and play
26 closer to their homes, the personal connection to and pride in their respective communities
27 would increase. In addition to new employment opportunities, the new developments would lead
28 to an increase in real estate values and tax revenues along the proposed DNT 4B/5A corridor.
29 This would lead to improved neighborhoods, schools, city services and city programs. Each of
30 these improvements would add to the feeling of community shared by local residents.

31
32 **Limited English Proficiency**
33 Executive Order (EO) 13166, Improving Access to Services for Persons with Limited English
34 Proficiency (LEP), requires federal agencies to examine the services they provide and identify
35 any need for services to LEP populations. The EO requires federal agencies to work to ensure
36 that recipients of federal financial assistance provide meaningful access to their LEP applicants
37 and beneficiaries. Failure to ensure that LEP persons can effectively participate in or benefit
38 from federally assisted programs and activities may violate the prohibition under Title VI of the
39 Civil Rights Restoration Act of 1987 and Title VI regulations. One study area was used to
40 identify populations that speak English “less than well.” The study area is limited to the three
41 Census block groups (BG) traversed by the proposed DNT 4B/5A. The populations (age 5 years
42 and older) who speak English “less than well” according to *Census 2000* are presented in
43 **Table 4.**

1

Table 4. Project Area Population that Speaks English “Less than Well”

Census Tract/ Block Group (BG)	LEP	Languages Spoken by LEP Populations			
		Spanish	Indo-European	Asian/Pacific Island	Other
Collin County Tract 303 BG 1	1.0%	0.9%	0.1%	0.0%	0.0%
Denton County Tract 201.01 BG 1	3.6%	3.5%	0.0%	0.1%	0.0%
Grayson County Tract 19 BG 2	0.7%	0.7%	0.0%	0.0%	0.0%
Total Study Area (BG)	1.6%	1.6%	<0.1%	<0.1%	0.0%

Source: Census 2000.

2

3

4 Of the total population within the study area, 1.6% speaks English “less than well.” Spanish is
5 the dominant language spoken by those that speak English “less than well.” Less than 0.1% of
6 the population within the study area speaks Indo-European or Asian/Pacific Island languages,
7 individually. None of the population was identified as speaking other languages.

8

9 **Environmental Justice**

10 EO 12898, entitled “Federal Actions to Address Environmental Justice in Minority Populations
11 and Low-Income Populations,” requires each federal agency to “make achieving environmental
12 justice part of its mission by identifying and addressing, as appropriate, disproportionately high
13 and adverse human health or environmental effects of its programs, policies and activities on
14 minority populations and low-income populations.”

15

16 The Federal Highway Administration (FHWA) has identified three fundamental principles of
17 environmental justice:

18

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

26

27 Minority is defined as a person who is:

28

- 29 • Black (having origins in any of the black racial groups of Africa).
- 30 • Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other
31 Spanish culture or origin, regardless of race).

- Asian American (having origins in any of the original peoples of the Far East, Southeast Asian, the Indian subcontinent, or the Pacific Islands).
- American Indian and Alaskan Native (having origins in any of the original people of North American and who maintains cultural identification through tribal affiliation or community recognition).

A low-income household is defined as one with a median household income for a family of four equal to or below the national poverty level of \$22,350 in the year 2011 (Department of Health and Human Services Poverty Guidelines for 2011).

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

- Are predominately borne by a minority population and/or a low-income population; or,
- 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 non-minority population and/or non-low-income population.

For purposes of this EE, data from *Census 2000* have been used to identify areas with high minority and low-income concentrations. Because of the limitations associated with reporting income at the Census block level, two study areas were established to identify minority and low-income populations within the proposed DNT 4B/5A project area (**Figures 1 and 2**). The minority study area consists of 18 Census blocks (four additional Census blocks within the proposed DNT 4B/5A project area were not included in the analysis because they represent transportation ROW only) and the low-income study area consists of three Census BG. Data obtained from these Census blocks and BG were analyzed to determine race and income characteristics within the proposed DNT 4B/5A project area. A total of 321 persons were recorded within the Census blocks in 1999. The race and ethnicity distribution within these two study areas is presented in **Table 5**.

1

Table 5. Racial and Ethnic Population within the Proposed Project Area

Census Data Level	Total Population	Hispanic or Latino alone	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some other race alone	Two or more races	%Total Minority Population
Collin County										
Tract 303 BG 1	2,285	120 (5.2%)	2,068 (90.5%)	20 (0.9%)	18 (0.8%)	20 (0.9%)	0 (0.0%)	0 (0.0%)	39 (1.7%)	217 (9.5%)
Block 1008	12	50%	50%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50%
Block 1041	71	7%	90.2%	0.0%	1.4%	1.4%	0.0%	0.0%	0.0%	9.8%
Block 1053	89	15.7%	83.2%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	16.8%
Block 1054	0	--	--	--	--	--	--	--	--	
Block 1055	33	0.0%	97%	3%	0.0%	0.0%	0.0%	0.0%	0.0%	3%
Block 1067	11	0.0%	90.9%	0.0%	9.1%	0.0%	0.0%	0.0%	0.0%	9.1%
Denton County										
Tract 201.01 BG 1	1,718	190 (11.1%)	1,497 (87.1%)	6 (0.3%)	5 (0.3%)	1 (0.1%)	1 (0.1%)	0 (0.0%)	18 (1.0%)	221 (12.9%)
Block 1001	15	0.0%	93%	0.0%	0.0%	0.0%	0.0%	0.0%	7%	7
Block 1044	0	--	--	--	--	--	--	--	--	
Block 1045	0	--	--	--	--	--	--	--	--	
Block 1046	0	--	--	--	--	--	--	--	--	
Block 1047	28	4%	96%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4%
Block 1058	0	--	--	--	--	--	--	--	--	
Block 1059	0	--	--	--	--	--	--	--	--	
Grayson County										
Tract 19 BG 2	2,278	148 (6.5%)	2,089 (91.7%)	1 (<0.1%)	13 (0.6%)	5 (0.2%)	0 (0.0%)	0 (0.0%)	22 (1%)	189 (8.4%)
Block 2146	18	0.0%	94.4%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	5.6%
Block 2170	5	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Block 2186	13	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%
Block 2190	0	--	--	--	--	--	--	--	--	
Block 2192	26	23.1%	76.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	23.1%
Total Study Area (Census Blocks):										12.2%
Source: Census 2000.										
Note: Census Blocks 1039, 1040, 1056 and 1061 within Tract 303, BG 1 are within the proposed DNT 4B/5A project area but represent transportation ROW only. No populations are present and these Census Blocks were not included in the analysis.										

2

3

4

5

6

7

8

9

10

11

12

13

The majority of populated Census blocks show similar demographic characteristics to their associated BG. In Block 1008 of BG 1, Tract 303, 50% of the population is Hispanic or Latino and the other 50% is White alone. In Block 2192 of BG 2, Tract 19, 23.1% of the population is Hispanic or Latino and 76.9% is White alone. While the demographic characteristics of these Census blocks are not similar to their associated BG, a distinct minority group was not identified during field reconnaissance and the population of these Census blocks is only 12 and 26 persons, respectively. Seven Census blocks have zero population and eight Census blocks have populations with fewer than 30 people. No Census blocks have a population over 100 people. **Table 6** provides the 1999 median household incomes for the study area. Approximately 6.3% of the population within the three BG is below poverty level.

1

Table 6. Median Household Income and Poverty Status

Census Data Level	Total Population	# of People with Income Below Poverty Level	% of Households in 1999 Below Poverty Level	1999 Median Household Income (\$)
Collin County				
Tract 303 BG 1	2,281	119	5.2%	83,756
Denton County				
Tract 201.01 BG 1	1,718	75	4.4%	58,519
Grayson County				
Tract 19 BG 2	2,276	201	8.8%	52,446
Total Study Area (Census BG)	6,275	395	6.3%	
Source: <i>Census 2000</i> .				

2

3

4 Benefits to local minority and low-income populations from the proposed DNT 4B/5A would
5 include increased mobility, access to the region, transportation carrying capacity, and safety in
6 the area. Additionally, the improved access to the area would enable new development leading
7 to job growth, improved land values and better access to good and services.

8

9 **Tolling Impacts**

10 In order to analyze “user impacts” of the proposed DNT 4B/5A extension on low-income and
11 minority populations, origin-destination (O&D) data was requested from the NCTCOG. Studying
12 O&D data can determine travel patterns of traffic along a transportation facility during a typical
13 day. This form of analysis is useful in assessing user impacts because the number of trips
14 associated with specific population characteristics can be analyzed to provide general travel
15 assumptions of those specific populations. Trips are defined as a one-way movement from a
16 starting point (origin) to an arrival point (destination).

17

18 The O&D data obtained from the NCTCOG in November 2010 was not sufficient to analyze user
19 impacts associated with the proposed DNT 4B/5A because the results indicated that no one
20 would use the proposed DNT 4B mainlanes in 2030. However, these results are due to
21 technical limitations and a lack of sufficient input data for the model. The NCTCOG model
22 includes the transportation network for the NCTCOG Metropolitan Planning Area (MPA), which
23 does not extend into Grayson County. Therefore, the model only examined users on the 8-mile
24 long portion (4B) of the proposed DNT 4B/5A located in Collin and Denton counties. The
25 remaining 4 miles (5A) could not be analyzed. Additionally, potential users outside the NCTCOG
26 area were not included because the forecasted 2030 demographic data used by the NCTCOG
27 in the O&D model only included data from the NCTCOG member counties. These technical
28 limitations did not allow a thorough analysis of all users on the 12-mile long proposed toll road.

29

30 The Census data and transportation network used in the model were also insufficient to address
31 the potential users of the proposed DNT 4B/5A facility. *Census 2000* data was used to forecast
32 the users in 2030; however, the population numbers for 2000 were so low within the proposed

1 DNT 4B/5A project area that the forecasted 2030 numbers did not accurately predict future use.
2 Additionally, the forecasted numbers did not include population data for Grayson County.
3 Finally, the transportation network used for the model did not include any cross
4 streets/intersections along the proposed DNT 4B/5A frontage roads. The model recognized the
5 proposed DNT 4B/5A mainlanes as identical to the proposed frontage roads except that a cost
6 was associated with the mainlanes and not the frontage roads. This resulted in all traffic in the
7 model using the frontage roads and no traffic using the mainlanes.

8
9 Although the O&D analysis can be a useful tool in analyzing user impacts related to tolling, the
10 location of the proposed DNT 4B/5A on the edge of the NCTCOG MPA and insufficient input
11 data for the model limited the ability to identify potential users and determine the demographic
12 characteristics of those users. After population forecasts are determined based on *Census 2010*
13 data and an improved transportation network is available for the proposed DNT 4B/5A project
14 area, an accurate O&D analysis could be conducted. However, this will not occur for at least two
15 more years; therefore, an analysis of user impacts cannot be performed until that time.

16
17
18

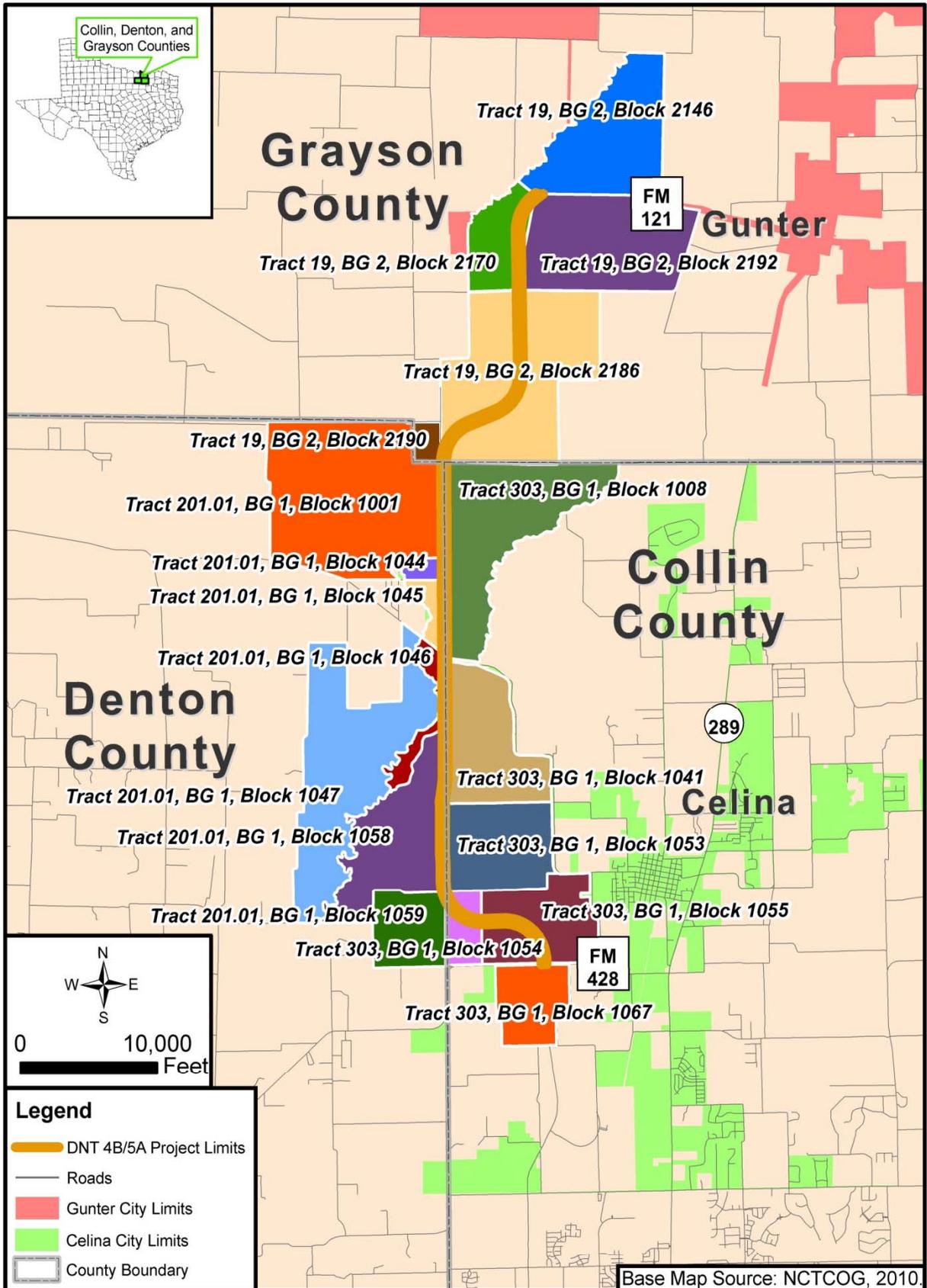


Figure 1. Census Block Map - Minority Study Area

Dallas North Tollway Extension Phase 4B/5A from FM 428 to FM 121

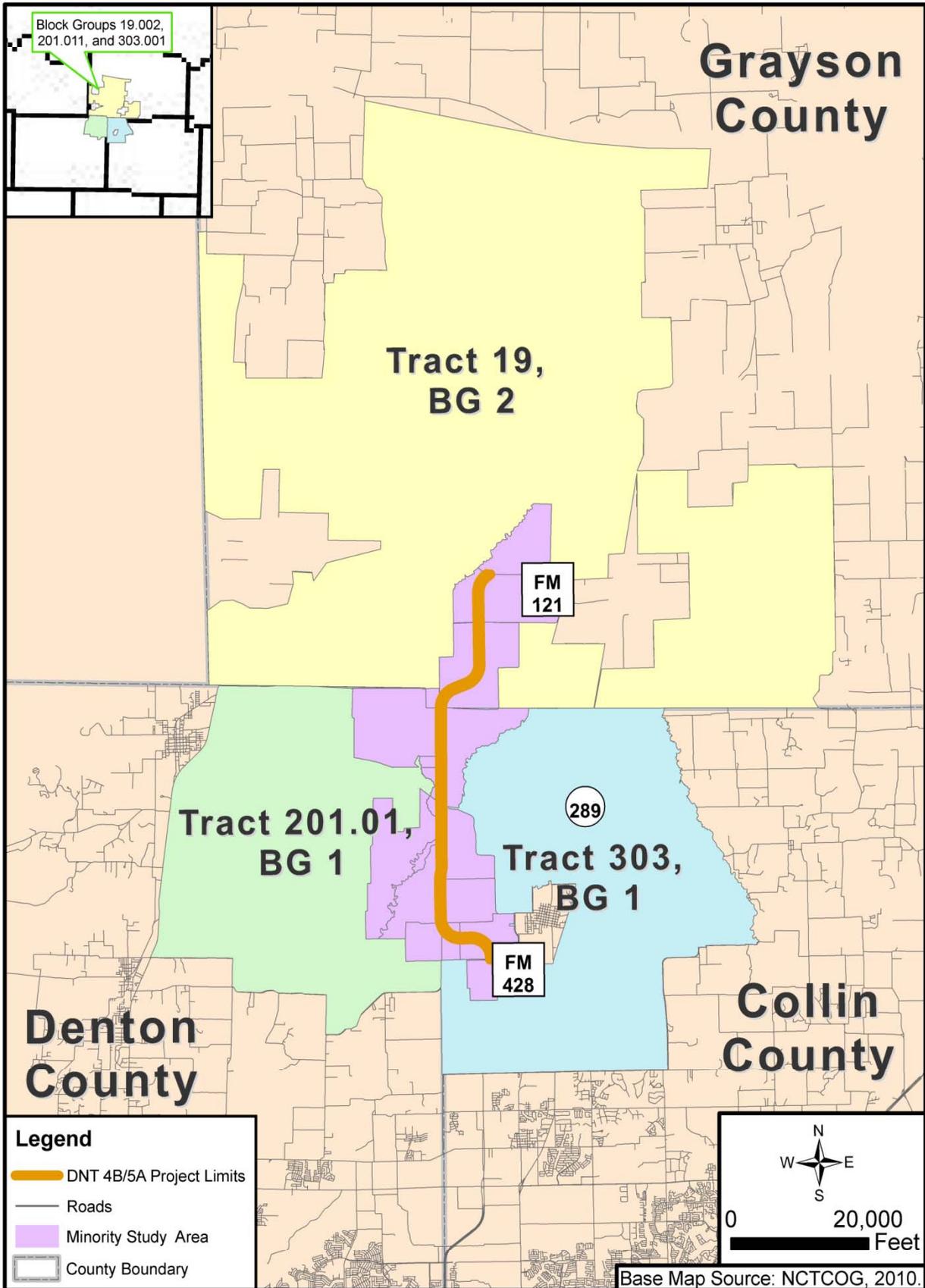


Figure 2. Census Block Group Map - Low-income Study Area

Dallas North Tollway Extension Phase 4B/5A from FM 428 to FM 121

Appendix 2-13

Indirect Impacts Analysis Supporting Information

Indirect Impacts Analysis Supporting Information

Dallas North Tollway Extension Phase 4B/5A (DNT 4B/5A)

PROJECT LEVEL INDIRECT EFFECTS

The Federal Council on Environmental Quality defines indirect effects as those “caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect impacts 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 Code of Federal Regulations 1508.8). Indirect effects differ from the direct impacts associated with the construction and operation of the proposed project and are caused by another action or actions that have an established relationship or connection to the proposed project. These induced actions are those that would not or could not occur except for the implementation of the proposed project.

The indirect effects analysis was conducted based on the National Cooperative Highway Research Program (NCHRP) Report 466, *Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects* (2002) and Texas Department of Transportation's (TxDOT) *Guidance on Preparing Indirect and Cumulative Impacts Analyses* (June 2009). The NCHRP report outlines eight steps that should be followed when determining the indirect effects caused by a proposed transportation project and TxDOT's guidance combines these into seven steps. The seven steps include:

1. Scoping
2. Identify the Study Area's Goals and Trends;
3. Inventory the Study Area's Notable Features;
4. Identify Impact-Causing Activities of Proposed Action and Alternatives;
5. Identify Potentially Substantial Indirect Effects for Analysis;
6. Analyze Indirect Effects and Evaluate Results; and
7. Assess Consequences and Consider/Develop Mitigation (when appropriate).

Step 1: Scoping

The proposed DNT 4B/5A is located in Collin, Denton, and Grayson counties within the city limits and extraterritorial jurisdiction (ETJ) of the cities of Celina and Gunter. **Table 1** introduces the level of effort determined for the indirect impacts analysis through the scoping process. As shown in **Table 1**, the fact that the proposed DNT 4B/5A is a regional toll road whose purpose is to address the area's increasing traffic demand related to population growth requires a detailed, quantitative analysis. However, due to the rural nature of the proposed DNT 4B/5A project area and the limited analytical tools and resources available to the cities of Celina and Gunter, specific data related to economic, environmental and social impacts and potential induced developments is limited. Detailed quantitative data has been reported and used in the analysis when available, but some of the analysis must be completed qualitatively using the professional judgment of city and county officials and project planners.

1

Table 1. Level of Effort Required for Indirect Impacts Analysis

Project Variables		Assessment Methodology
Project Type	New location toll road	Quantitative
Project Scale	Large	Quantitative
Project Scope	Regional	Quantitative
Stage of Study	Design Alternatives	Quantitative
Project Setting	Rural	Qualitative
Design Features	Access-controlled toll road	Qualitative/Quantitative
Project Purpose	To provide transportation improvements for the residents in northern Collin and Denton counties and southern Grayson County to address the area's rapid growth in population and employment, and transportation demand.	Quantitative
Data Available	Discussions with cities, maps, field data	Qualitative/Quantitative
Source: NCHRP Report 466, Figure 3-1 (2002).		

2

3

4 Various possible boundaries were considered to determine the area of influence (AOI) for
5 indirect effects resulting from the implementation of the proposed DNT 4B/5A. These included a
6 commuteshed, municipal boundaries and a watershed. A commuteshed was considered
7 because the proposed DNT 4B/5A is used by commuters in northern suburban areas to
8 commute to offices in downtown Dallas and other major commercial centers. However,
9 extending the AOI into the Dallas Central Business District would provide an overly large AOI
10 filled with highly developed areas that are unlikely to be positively or negatively affected by the
11 proposed DNT 4B/5A. Smaller indirect effects could be overlooked in such a large AOI.
12 Because the proposed DNT 4B/5A passes through the city limits of Celina and Gunter, an AOI
13 based on their city limits and ETJ would be logical. However, State Highway (SH) 289 is a
14 primary arterial that passes through Celina and Gunter approximately 3 miles to the east of the
15 proposed DNT 4B/5A and it is proposed for improvement over the next 4 years. City officials
16 indicated that growth in their cities near SH 289 would be attributable only to SH 289 and that
17 this growth around SH 289 would occur with or without the proposed DNT 4B/5A. Therefore,
18 using the municipal boundaries as the AOI would unnecessarily include development areas not
19 related to the proposed DNT 4B/5A. Finally, an AOI based on a watershed was not feasible.
20 Identifying a watershed that would encompass the proposed DNT 4B/5A and its associated
21 indirect effects could be done, but this boundary would also be too large to ensure an accurate
22 representation of indirect effects. Additionally, a watershed would be better used where the
23 ecological features of an area transition between watersheds, providing an accurate delineation.
24 The proposed DNT 4B/5A project area is rural agriculture and the ecological features are
25 homogenous throughout the project area and beyond.

26

27 After considering the various methodologies that could be used to define the AOI, it was
28 determined that an AOI based on boundaries identified by local officials and supplemented by

1 research into historic development patterns along the existing Dallas North Tollway would be
2 the most practical method of determining the AOI. Based on aerial photographs dating from
3 1995 to the present, the development pattern extending out from the existing Dallas North
4 Tollway (north of IH 635) consists of commercial/retail properties interspersed with occasional
5 multi-family apartment buildings directly adjacent to the frontage roads. This development
6 pattern remains consistent from approximately 0.2 mile to 0.5 mile away from the tollway
7 depending on the location of the next north-south roadway. Some commercial developments
8 extend beyond the first north-south roadway, but typically the development transitions into multi-
9 family buildings and single-family subdivisions. These subdivisions typically continue until the
10 next major arterial roadway. This picture of development is a broad look at the existing Dallas
11 North Tollway corridor; each city has their specific development pattern (e.g., the Town of
12 Addison is predominantly commercial while the City of Frisco has more retail and entertainment
13 development). Regardless of the specific type of development, the pattern always extends
14 approximately 0.2 mile to 0.5 mile away from the tollway.

15
16 The aerial photographs also show a temporal pattern of development. As the tollway is
17 constructed, single-family homes are usually already present from approximately 0.5 mile to 1
18 mile away. As the frontage roads are constructed, larger corporations and retail or recreation
19 developments establish within 0.5 mile along with multi-family housing and single-family
20 subdivisions. Finally, after the tollway main lanes are constructed, the area within the immediate
21 vicinity of the tollway begins to develop with smaller commercial areas, retail and multi-family
22 housing. The development growth identified from historical aerials indicates that completed
23 portions of the Dallas North Tollway have had an indirect effect on development up to
24 approximately 0.5 mile east or west. According to Celina city officials, city growth attributable to
25 the proposed DNT 4B/5A would only extend approximately 0.5 mile to the east because of the
26 presence of SH 289 further east. The extent of growth to the west was not defined by Celina
27 because the city limits and ETJ in that area have not been established. Interviews with City of
28 Gunter planners indicated that Platinum Ranch, a mixed use development west of Gunter is
29 currently in the planning stages because of the proposed extension.

30
31 Based on stakeholder input and historic development patterns, the AOI established for the
32 proposed DNT 4B/5A extends north from Farm to Market Road (FM) 428 to FM 121 and
33 approximately 0.5 mile east and west of the proposed ROW. In certain areas the AOI extends
34 beyond the 0.5-mile mark to include identified induced development. This area encompasses
35 8,607 acres and is shown in **Exhibit 2-5**.

36
37 Temporal boundaries for the indirect effects extend from construction of the proposed DNT
38 4B/5A until 2030, the end of the current Metropolitan Transportation Plan (MTP) planning cycle.

39
40 As stated in NCHRP Report 466, an indirect effects analysis includes evaluating the underlying
41 assumptions made in order to gauge their impact on the indirect effects identified. Basic
42 assumptions guiding this analysis included: (1) city officials' understanding of future
43 development patterns was accurate; (2) the proposed DNT 4B/5A would follow development
44 patterns associated with the existing Dallas North Tollway facility; (3) planned developments

1 would move forward as currently shown; and, (4) future development would not occur in
2 floodplains. There is an inherent uncertainty to assumptions; however, there is no reason to
3 believe the assumptions made in this analysis would change in the future.

4 5 **Step 2: Identify the Study Area's Goals and Trends**

6
7 Because the study area is within the city limits and ETJ of the cities of Celina and Gunter, it was
8 determined that a review of their comprehensive plans would provide the best information for
9 identifying the direction and goals associated with the proposed project's AOI.

10 11 ***The City of Celina Goals and Objectives***

12 The City of Celina's 2030 Comprehensive Plan, *Celina by Choice*, was adopted by the city in
13 November of 2009. *Celina by Choice* has three specific purposes:

- 14
- 15 • To articulate the vision of Celina's residents;
- 16 • To act as a guide for future development; and
- 17 • To set priorities for how future growth will occur.

18
19 The Comprehensive Plan includes a Future Land Use Map and Thoroughfare Plan which
20 identify a proposed DNT 4B/5A corridor. When *Celina by Choice* was approved, the exact
21 location of the proposed DNT 4B/5A corridor was unknown; therefore, the location shown in the
22 Comprehensive Plan is not accurate. However, city officials indicated that the growth areas
23 adjacent to the proposed DNT 4B/5A that are identified on the Future Land Use Map would shift
24 to the alignment approved by NTTA's Board of Directors. Therefore, the land use types and
25 potential sizes of developments shown in the Comprehensive Plan are accurate estimations.

26
27 Currently, the Celina city limits encompass 10 square miles and the ETJ boundaries encompass
28 33 square miles. Agriculture is the predominant land use within both the city limits (61%) and
29 the ETJ (79%); however, most of the agricultural land present within the city limits is awaiting
30 conversion to other uses. Residential land use is the largest land use type after agriculture and
31 makes up approximately 19% of the City of Celina. A list of the existing land use types (as of
32 2008) is provided in **Table 2**.

1

Table 2. Land Use within Celina City Limits

Land Use	Acres	% of Total
Agricultural	3,885	60.9%
Residential	1,207	18.9%
Vacant	587	9.2%
Open space	316	4.9%
Government	246	3.9%
Commercial/Office	96	1.5%
Other	20	0.3%
ROW/Utilities	15	0.2%
Industrial	11	0.2%
Total	6,383	
Source: <i>Celina by Choice</i> – Table LU-1 (2008 data).		

2

3

4 The city identifies itself as a “bedroom community” because 95% of its residents commute south
5 to Dallas and its suburbs for work. The current zoning within the City of Celina is very different
6 from the current land uses. Approximately 50% of the land within the City of Celina is zoned as
7 “planned development” which will allow a mixture of office, retail and residential developments.
8 The area zoned solely for residential use is approximately 25% of the city. Areas zoned for
9 agriculture make up less than 10% of the city. The City of Celina is using zoning to implement a
10 modern development type which emphasizes incorporating various types of development in an
11 area instead of focusing solely on residential, commercial or retail land uses.

12

13 The City of Celina, in conjunction with all neighboring cities except Pilot Point, has developed an
14 Ultimate Growth Boundary that encompasses 99 square miles, although less than 10% of the
15 area is currently within city limits. The proposed DNT 4B/5A extends for 7.6 miles within this
16 Ultimate Growth Boundary and the City of Celina has identified a Regional Activity Center, a
17 Regional Commercial Center and four commercial/mixed-use areas along this portion of the
18 tollway. *Celina by Choice* identifies the following three goals as part of their Land Use Plan:

19

- 20 • Promote and support the development of well designed centers for jobs, shopping,
21 culture, entertainment and housing.
- 22 • Create a large-scale commercial center along the proposed DNT 4B/5A to draw visitors
23 and to serve as a destination point for the city and the region. Allow for a wide mix of
24 retail, personal services, dining, entertainment and complementary residential
25 opportunities.
- 26 • Promote development that integrates at least two primary, mutually supporting uses on
27 the same site (e.g., retail/office, retail/residential, office/residential).

28

29 These goals have been identified to take advantage of the regional connectivity of the tollway
30 and to provide improved commercial and retail facilities for the residents of Celina.

31

1 **The City of Gunter Goals and Objectives**

2 The City of Gunter is in the process of updating their comprehensive plan. The current *City of*
3 *Gunter Community Development Plan*, approved in 2005, does not identify the proposed DNT
4 4B/5A on its Future Land Use Plan or Thoroughfare Plan. Goals and objectives identified in the
5 Development Plan are broad and used to provide guidance as Gunter begins to grow and
6 develop from a small rural community into a suburban city. Goals and objectives related to land
7 use and transportation include:

- 8
- 9 • To provide adequate land areas for future development and encourage the establishment
10 of land use arrangements that protect the health, safety, and welfare of Gunter residents
11 and land owners.
 - 12 • Establish a land use pattern which creates a balance between the provision of public
13 services, and the provision of a reasonable selection of land use arrangements
14 addressing private development demands.
 - 15 • Future commercial in Gunter should be designated as highway oriented uses along the
16 highway frontages in order to serve regional, commuter, and passer-by traffic.
 - 17 • To provide a framework for orderly development based on the Future Land Use Plan,
18 projected population growth, and anticipated economic development in order to be
19 responsive to present and future traffic demands within the community.
- 20

21 Although no goals or objectives specific to the AOI are expressed in the Gunter Community
22 Development Plan, it is evident that the City of Gunter is committed to growing so that adjacent
23 land uses are complementary and easily accessible by transportation thoroughfares while
24 protecting the health and safety of Gunter residents.

25

26 **Regional Goals and Objectives**

27 The 2030 North Central Texas Council of Governments' (NCTCOG) MTP defines transportation
28 systems and services in the area containing the boundaries of the AOI. The MTP addresses
29 regional transportation needs that are identified through forecasting current and future travel
30 demand, developing and evaluating system alternatives and selecting those options which best
31 meet the mobility needs of the region. The proposed facility is included in this plan.

32

33 **Step 3: Inventory the Study Area's Notable Features**

34

35 Notable features typically include historic sites, facilities central to community interaction, or
36 unique natural features. Within the AOI there are three notable features: native tallgrass prairie
37 remnants, the Little Elm Creek floodplain, and four Natural Resources Conservation Service
38 (NRCS) lakes (**Exhibit 2-5**). Three small areas of native tallgrass prairie (in total less than 0.1
39 acre) were identified during field investigations. This high-quality native tallgrass prairie is
40 dominated by big bluestem (*Andropogon gerardii*) and Texas cupgrass (*Eriochloa sericea*). The
41 Little Elm Creek floodplain is the dominant waterway in the AOI and field investigations revealed
42 numerous wetlands within the floodplain. Approximately 10,400 linear feet of stream and 0.3
43 acre of wetlands are present within the 700-acre floodplain in the AOI. Four NRCS lakes totaling

1 110 acres in size are completely encompassed by the AOI. The lakes are identified as
2 Floodwater Retarding Structures (FWRS) 7, 10, 19, and 20.

4 **Step 4: Identify Impact-Causing Activities of Proposed Action and Alternative**

6 A thorough understanding of project design features and the range of impacts they might cause
7 is the first step toward the identification of indirect effects. The impact-causing activities from the
8 proposed DNT 4B/5A are discussed below.

10 *Modification of Regime Effects* – As noted in the inventory of vegetation in **Appendix 2-3**,
11 approximately 552 acres of the proposed ROW are modified vegetation (combined farmland
12 and fencerow vegetation). Only 45.3 acres of the proposed ROW are considered native
13 vegetation (riparian habitat and native grasses). Although 602 acres of vegetation would be
14 disturbed by the proposed DNT 4B/5A, the area would be reseeded and replanted based on
15 TxDOT-approved seeding specifications.

17 *Land Transformation and Construction* – The proposed DNT 4B/5A involves constructing a new-
18 location six-lane toll road. The proposed ROW is approximately 400 feet wide. Approximately
19 549 acres of agricultural land, 45 acres of riparian vegetation, 8 acres of upland and fencerow
20 woods, 0.6 acre of stock ponds, and 0.4 acre of native grass would be transformed into
21 transportation ROW.

23 *Resource Extraction* – Approximately 617 acres and 2,980,000 cubic yards of surface
24 excavation would be required to construct the new tollway. Approximately 2,950,000 cubic yards
25 would be used as fill for the proposed DNT 4B/5A. As shown in **Table 2-1 of the EE** (see
26 Section 2, Page 2), over 1 acre of permanent disturbance would occur within Little Elm Creek
27 and numerous smaller stream channels from the construction of bridges and culverts.

29 *Processing* – No construction easements would be required for the proposed DNT 4B/5A and
30 information on product storage during construction is not available. It is anticipated, based on
31 usual practices, that the Contractor, when selected, would negotiate the location for the
32 Contractor's field office and storage site. If the Contractor chooses to use undeveloped land or
33 another site for material storage, impacts to natural resources may increase.

35 *Land Alteration* – Landscaping would occur as part of the proposed DNT 4B/5A. Land alteration
36 as a result of the proposed DNT 4B/5A would largely be limited to the increase in paved area.
37 Vegetated areas within the ROW would be restored to their current condition with similar
38 vegetation.

40 *Resource Renewal* – The total number of large individual trees and total acreage affected and
41 thus compensated for may change during final design. The NTTA would minimize the loss by
42 preserving as many trees as possible. Trees within the ROW, but not in the construction zone,
43 would not be removed if possible.

1 *Changes in Traffic* – The proposed DNT 4B/5A is expected to increase capacity and improve
2 mobility within the proposed DNT 4B/5A project area. It is anticipated the increased capacity
3 would benefit the local roadway system.
4

5 *Waste Emplacement and Treatment* – Soil excavated from the project area would likely be
6 stockpiled for use on another project or sold for other uses, depending on the results of soil
7 testing. The Contractor, when selected, may chose to provide portable sanitary facilities for
8 employees at the field office. No other sanitary waste discharge is anticipated.
9

10 *Chemical Treatment* – No use of fertilizer is anticipated during re-vegetation. Periodic
11 applications of herbicide may occur during the maintenance phase of the proposed DNT 4B/5A.
12

13 *Access Alteration* – The proposed DNT 4B/5A would provide improved access between the
14 cities of Celina and Gunter and the Dallas/Fort Worth (DFW) Metroplex. Commute times would
15 improve with the proposed DNT 4B/5A and new areas would be open for development between
16 Celina and Gunter.
17

18 The air quality in the AOI is currently considered in poor or declining health because it is within
19 the nonattainment area for ozone. In addition, the proposed DNT 4B/5A will result in increased
20 mobility and access to the area. All such actions can result in changes of traffic patterns and
21 thus have the potential to indirectly impact air quality in the area.
22

23 **Step 5: Identify Potentially Substantial Indirect Impacts for Analysis**

24

25 Three types of indirect effects are discussed in NCHRP Report 466:
26

- 27 • Encroachment-alteration effects – effects that alter the behavior and functioning of the
28 physical environment, are related to design features, but are indirect in nature because
29 they can be separated from the project in time or distance;
- 30 • Induced growth effects – changes in traffic patterns and accessibility attributable to the
31 design can influence the location of residential and commercial growth; and
- 32 • Effects related to induced growth – effects attributable to induced growth and not to
33 project design features.
34

35 ***Encroachment-Alteration Effects***

36 Encroachment-alteration effects are characterized into two categories: ecological effects and
37 socioeconomic effects.
38

39 Ecological Effects

40 Possible ecological effects include habitat fragmentation, degradation of habitat, and altered
41 energy flows. Because the proposed DNT 4B/5A is a new location tollway which only
42 occasionally follows existing roadways along the 12-mile length, it is expected that habitat
43 fragmentation would occur. Habitat fragmentation would be most pronounced at riparian areas

1 that are not proposed to be bridged. The location of the proposed DNT 4B/5A alignment avoids
2 impacts to major lakes and reduces the number of stream crossings; however, it is not possible
3 to completely avoid impacts to all riparian habitat crossed by the proposed DNT 4B/5A. The
4 400-foot wide proposed ROW would cut through some riparian areas, displacing approximately
5 45 acres of riparian woods and creating a physical barrier which would alter movement along
6 the riparian corridors. Animals that currently use the corridors to access water, forage for food or
7 find safety from predators would be restricted in their movements. The proposed DNT 4B/5A
8 facility would provide culverts big enough to allow animals to move through them but it is likely
9 that some would refuse to use the culverts and others may try to cross the road instead. The
10 proposed DNT 4B/5A has the potential to reduce the range of some animals because of the
11 barrier created as well as reduce the numbers of individuals because of the dangers associated
12 with crossing the tollway.

13
14 Habitat fragmentation would occur to a lesser degree along existing fields where no roadway is
15 currently present. Approximately 549 acres of farmed or ranched lands would be impacted by
16 the proposed DNT 4B/5A. Because of the continual disturbance of these lands, they do not
17 provide ideal habitat for many species. However, smaller mammals, snakes, etc. could live
18 within these fields and be impacted by the restricted movement associated with the proposed
19 DNT 4B/5A. Larger predators who pass through the agricultural fields could suffer because of
20 the restricted access to and limited amount of prey.

21
22 Indirect ecological effects would occur to the existing local ecosystem; however, the ecosystem
23 demonstrates a limited diversity of plants and animals. During the field reconnaissance,
24 numerous animal tracks were identified at small ponds and watering areas within the proposed
25 ROW. The majority of these tracks were raccoon and feral hogs; however, there were also
26 heron, rabbit, coyote, and opossum. A variety of birds were also heard but not seen during the
27 reconnaissance. These are animals typically found at the edges of, and sometimes within,
28 intense human habitation. The proposed DNT 4B/5A project area has been agricultural land for
29 over 100 years and these species have flourished because they have adapted to the agricultural
30 activities, roadways, vehicles and structures that negatively affect other wild animals. The field
31 reconnaissance also revealed a limited variety of plant species throughout the project area.
32 Common herbaceous plants are mostly non-native species including Johnson grass, Bermuda
33 grass, Virginia wildrye, greenbrier, balloon vine and ragweed. Common overstory species
34 include hackberry, Osage orange, cedar elm and green ash. Because the animals and plants
35 present within the project study area are common and adaptable to suburban environments, it
36 can be assumed that the local ecosystem would recover from the habitat fragmentation
37 associated with the construction of the proposed DNT 4B/5A.

38
39 The AOI is part of the Environmental Protection Agency's (EPA) designated nine-county
40 nonattainment area for ozone. The AOI is currently in attainment for all other National Ambient
41 Air Quality Standards pollutants. Based on the results of Steps 1 through 4 that evaluated the
42 possible project-related actions that can indirectly impact air, it was determined that the
43 proposed DNT 4B/5A would not be anticipated to cause indirect air quality impacts in the AOI.
44 No change in attainment status is anticipated within the AOI area as the result of emissions

1 associated with the proposed DNT 4B/5A. In order for the region to achieve ozone attainment, a
2 variety of point, non-point, and mobile source emission reduction strategies must be
3 implemented for the entire DFW area as outlined in the State Implementation Plan. Indirect air
4 quality impacts from mobile source air toxics (MSAT) are unquantifiable due to existing
5 limitations to determine pollutant emissions, dispersion, and impacts to human health.
6 Emissions would likely be lower than present levels in future years as a result of the EPA's
7 national control regulations (i.e., new light-duty and heavy-duty on-road fuel and vehicle rules,
8 the use of low sulfur diesel fuel). Even with an increase in VMT and possible temporary
9 emission increases related to construction activities, the EPA's vehicle and fuel regulations,
10 coupled with fleet turnover, will over time cause substantial reductions of on-road emissions,
11 MSAT, and the ozone precursors volatile organic compounds and nitrogen oxides. As the
12 proposed DNT 4B/5A is not anticipated to result in indirect air quality impacts, further discussion
13 in Steps 6 through 8 is not necessary.

14

15 Socioeconomic Effects

16 Indirect socioeconomic effects caused by transportation projects include alterations to
17 neighborhoods, travel patterns, economic development, and pedestrian mobility. Alterations to
18 neighborhoods and pedestrian facilities are not expected because there are not any
19 neighborhoods or pedestrian facilities within the AOI. Travel patterns would change because the
20 proposed DNT 4B/5A extension would allow faster access to the DFW Metroplex than the
21 existing SH 289. No studies have been conducted to identify specific travel patterns or the
22 number of vehicles currently using the existing road system. Additionally, although the Celina
23 Thoroughfare Plan indicates new arterials will be constructed by 2030, no data is available
24 pertaining to future traffic levels or travel patterns on these roads. Qualitative assumptions
25 regarding local and regional travel patterns in the AOI were relied upon in this analysis.

26

27 Currently, the majority of residents within or near the AOI head east to SH 289 in order to travel
28 south to the DFW region. Once the proposed DNT 4B/5A would be available, more traffic would
29 head west from the cities of Celina and Gunter to access the proposed tollway and the potential
30 new developments within the AOI. However, improvements to local east-west thoroughfares are
31 not planned at this time and residents would use the existing roads to access the proposed DNT
32 4B/5A. Although local travel patterns would shift as some residents use the proposed DNT
33 4B/5A instead of SH 289 to head south, this shift in travel patterns is not expected to be
34 substantial. Motorists would continue to use SH 289 to access existing services and facilities
35 (e.g., Celina High School) and as their southbound route to the suburban cities of Prosper,
36 Frisco, Plano, and beyond. No new local routes would be established in the City of Gunter
37 because no new local east-west roadways are planned. Within the City of Celina the Dallas
38 Parkway is an existing two-lane county roadway that allows traffic to flow north-south between
39 FM 428 and U.S. Highway 380. The Dallas Parkway is located along the eastern edge of the
40 proposed Dallas North Tollway Extension Phase 4A and its lanes would become two
41 northbound frontage road lanes when that phase of the tollway is built. Area residents have
42 already established travel patterns using the Dallas Parkway and these patterns would be
43 reinforced by the proposed DNT 4B/5A.

44

1 Regional travel patterns would not be substantially impacted by the proposed DNT 4B/5A. As
2 stated earlier, commuters in the area primarily commute south for work; therefore, commuter
3 travel patterns would remain the same. Additionally, because of the extensive retail,
4 recreational, and public services in the North Dallas area, it is likely that most residents within
5 and surrounding Celina and Gunter head south for non-work related needs as well. This north-
6 south travel pattern would continue with the proposed DNT 4B/5A. Because the proposed DNT
7 4B/5A is a tolled facility that connects with other tolled facilities, there could be indirect impacts
8 on regional travel patterns and other resources. For this reason, a discussion of the proposed
9 DNT 4B/5A as part of the regional priced facility system is provided in **Appendix 2-14**.

10
11 Historically, constructed portions of the Dallas North Tollway have induced growth along its
12 corridor because of the improved access to vacant lands. City, county and regional planners,
13 including the NTTA Board of Directors, are aware of the economic gains associated with the
14 proposed DNT 4B/5A for the surrounding area. The City of Celina analyzed the potential build-
15 out value per acre of the land within 0.25 mile of the proposed DNT 4B/5A based on the value of
16 developed and undeveloped properties located along the existing Dallas North Tollway.
17 A conservative value estimate of \$500,000 per acre was assumed for developed properties.
18 Assuming full build-out along the proposed DNT 4B/5A within a 0.25-mile boundary (half of the
19 AOI or 4,303 acres), the potential value of the developed land would be \$21,515,000,000. This
20 number only reflects the value of the land and does not include revenue generated from goods
21 and services, revenue from the sale of properties, or tax revenue for the local cities, counties
22 and school districts.

23
24 Although the economic gains associated with the proposed DNT 4B/5A would be substantial,
25 this indirect effect will not be analyzed further because it is not relatable to the notable features,
26 which is the purpose of Step 6. The additional encroachment-alteration effects discussed,
27 habitat fragmentation and changes to local travel patterns, would not be considered substantial
28 and will not be discussed in Step 6.

29 ***Induced Growth Effects***

30
31 NCHRP Project 25-25, Task 22 supplies information on how best to forecast indirect land use
32 effects for transportation projects. Various approaches are discussed, but according to Table 2
33 in Section 4.0 of this publication, the Planning Judgment approach is the best approach for a
34 rural project that anticipates much land use change with little data available and a lack of
35 sophisticated modeling tools. The Planning Judgment involves gathering extensive data from
36 local sources in order to analyze the development capacity, history and forecasted trends for the
37 indirect effects study area.

38
39 Data that could be used to evaluate indirect effects includes:

- 40
- 41 • Traffic data for the proposed DNT 4B/5A (specifically time-savings data);
- 42 • Official long-range population and employment projections;
- 43 • Development history/trends;
- 44 • Comprehensive land use plans;

- 1 • Transportation system plans;
- 2 • Maps/tables of land use;
- 3 • Estimated build-out year;
- 4 • Utility availability; and
- 5 • Interviews with city planners.

6
7 Following guidance from NCHRP Project 25-25, Task 22, the data available were gathered and
8 are presented in this step of the overall analysis. If necessary, the data will be further analyzed
9 and quantified in Step 6. Because the gathered data is provided based on city boundaries, the
10 information below is presented for each city.

11
12 City of Celina

13 The NCTCOG's 2003 projected 2030 population for the City of Celina was 25,216 people and
14 the estimated number of jobs for the same year was 5,690.

15
16 The City of Celina was established in 1879 and experienced fluctuations in population growth
17 early on; however, the population has steadily increased since the 1940s. Although farming and
18 ranching have been prevalent in the town's history, the current trend has moved away from local
19 agricultural activities and residents instead commute south for work. Celina labels itself as a
20 "bedroom community" which implies that residents work and play elsewhere.

21
22 *Celina by Choice* presents a future Celina that is less than 10% agricultural with large amounts
23 of "planned development" areas. According to city officials, Celina is working with a nearby
24 university to design a unique development pattern from what is typically found in suburban cities
25 outside of Dallas. By zoning 50% of their future city land as "planned development," the type of
26 development remains flexible allowing a variety of land use types to develop within an area
27 instead of broad expanses of only residential or only commercial areas. Although *Celina by*
28 *Choice* allows for flexibility, it also acknowledges that certain parts of the AOI would contain
29 specific development areas meant to appeal to the regional population. The Regional Activity
30 Center and Regional Commercial Center would provide residential, commercial, retail,
31 educational, recreational and medical enterprises that would make Celina a destination for the
32 region.

33
34 As discussed earlier, the Celina 2030 Thoroughfare Plan includes the proposed DNT 4B/5A. In
35 addition, the 2030 Thoroughfare Plan presents seven major east-west arterials and six major
36 north-south arterials along with numerous minor arterials and major and minor collector roads.
37 The city is planning for the expected commercial growth associated with the proposed DNT
38 4B/5A and the projected population growth from the continual growth of the DFW Metroplex.

39
40 There is no estimated build-out timeframe for the City of Celina because there is so much room
41 to grow and any estimate would not be accurate at this time. However, the city aims for a
42 population build-out of 350,000 to 400,000 people and expects the proposed DNT 4B/5A to help
43 the city reach 50% build-out by 2050.

1 Utilities are currently unavailable outside of the city limits except through Municipal Utility
2 Districts (MUD).

3
4 Within the AOI, there are approximately 4,560 acres of undeveloped land in the City of Celina
5 and its ETJ.

6
7 City of Gunter

8 The Texoma Council of Governments' (COG) projected 2030 population for the City of Gunter is
9 3,128. Official employment forecast data from the Texoma COG for the City of Gunter is
10 currently unavailable.

11
12 The City of Gunter was founded in the late 1800s and incorporated in 1924. Like the City of
13 Celina, the population has fluctuated over the years, especially during the Great Depression.
14 However, since the 1960s, the population of Gunter has steadily grown. The residents primarily
15 live close to the downtown area at the intersection of SH 289 and FM 121, but since 2000 some
16 new developments have been built east of the city. There has not been any city-led growth or
17 development west of Gunter. However, MUD districts are developing along the proposed route
18 of the proposed DNT 4B/5A.

19
20 *The City of Gunter Community Development Plan* was written in 2004 as a “guidebook to aid
21 the City in making decisions.” The plan contains expectations and projections for the city’s
22 growth through 2025 and includes a Future Land Use Plan and a Population Distribution map.
23 According to these two components of the plan, by 2025 the current ETJ would be 80% single-
24 family residential and a larger number of residents would live east of SH 289 than west of SH
25 289. *The City of Gunter Community Development Plan* shows a lack of development within the
26 AOI.

27
28 The Thoroughfare Plan presented in the community development plan does not include the
29 proposed DNT 4B/5A extension and does not include the most current city limits which extend
30 into a portion of the proposed DNT 4B/5A AOI. SH 289 and FM 121 are identified as major
31 highways and an unnamed loop around the city is the only arterial street illustrated on the plan.
32 However, discussions with city officials indicate that the proposed DNT 4B/5A is highly
33 anticipated and eagerly welcomed by the city.

34
35 There is no estimated build-out timeframe for the City of Gunter.

36
37 Sanitary sewer connections and an adequate water system are currently available throughout
38 the City of Gunter and its ETJ.

39
40 Within the AOI, there are approximately 3,235 acres of undeveloped land in the City of Gunter
41 and its ETJ.

42
43 Based on the data presented, it is expected that there would be substantial induced growth
44 effects related to the proposed DNT 4B/5A; therefore, these effects will be discussed in Step 6.

1 **Effects Related to Induced Growth**

2 Due to the rural nature of the AOI, the expected population growth, and the historic trends of
3 property adjacent to existing Dallas North Tollway segments, it is expected that the effects
4 related to induced growth would be substantial and will be discussed in Step 6.

5
6 **Step 6: Analyze Indirect Effects and Evaluate Results**

7
8 The following analysis presents the conclusions drawn through the use of the Planning
9 Judgment based on the information and data presented and assumptions made in the previous
10 five steps. Although economic growth was determined to be a substantial encroachment-
11 alteration effect, it would not have an impact on notable features or resources in the AOI.
12 Additionally, no other impacts were considered to be substantial within the AOI; therefore,
13 encroachment-alteration effects will not be discussed as part of this step of the analysis.

14
15 **Induced Development Effects**

16 As noted in Steps 2 and 5, the combination of a growing population, local city planning,
17 available land and interested land owners provide ideal conditions for growth and development
18 in the AOI with the implementation of the proposed DNT 4B/5A. Developments planned by the
19 cities and local developers that are dependent on the proposed DNT 4B/5A are presented in
20 **Table 3.**

21
22 **Table 3. Induced Developments within the AOI**

City	Development	Acreage
Celina	Regional Activity Center	100 acres
	Godwin Investments, Ltd.	244 acres
	Old Celina, Ltd.	440 acres
Gunter	Platinum Ranch	1,650 acres
Total		2,434 acres
Source: City of Celina and City of Gunter officials and developers.		

23
24
25 The locations of the developments listed in **Table 3** are shown in **Exhibit 2-5 of the EE** except
26 for the Regional Activity Center because the exact location has not been decided by the City of
27 Celina. As explained in Step 1, the existing Dallas North Tollway has a history of inducing
28 development in the surrounding area; however, the size, placement and timeframe of these
29 developments cannot be accurately predicted because of the influence from future economic
30 conditions and population growth. In order to keep this analysis accurate and not become
31 speculative, only the identified induced developments will be quantified to determine their
32 effects on the resources in the AOI.

33
34 As shown in **Exhibit 2-5**, only one notable feature, NRCS FWRS 10, would be affected by the
35 induced development. The current plans for Platinum Ranch, a mixed-use and residential

1 development, incorporate the lake into a planned residential village. No impacts would occur to
 2 this lake because of the induced development and no impacts would occur to any other notable
 3 features because of the induced development.

4
 5 Although only a few developments are currently planned because of the proposed DNT 4B/5A,
 6 it is anticipated that the proposed DNT 4B/5A would increase the rate of development within the
 7 AOI. Both cities acknowledge that the proposed DNT 4B/5A would help the cities to reach 100%
 8 build-out more quickly. Because of the current economic climate and a lack of existing regional
 9 connectivity, none of the AOI would be impacted without the proposed DNT 4B/5A.

10
 11 **Effects Related to Induced Growth**

12 For this analysis, it is assumed that the 2,434 acres of induced development associated with the
 13 proposed DNT 4B/5A would completely remove all existing vegetation and place fill in all
 14 streams and wetlands within the boundaries of the developments. **Table 4** provides the acreage
 15 amounts of each resource located within the limits of the three induced developments. The
 16 Regional Activity Center (100 acres) could not be included in these calculations because the
 17 location is unknown and the 29-acre NRCS FWRS (lake) within the induced developments
 18 would not be impacted because it is a protected area.

19
 20 **Table 4. Affected Resources within Induced Growth Areas**

Resource	Godwin Investments, Ltd.	Old Celina, Ltd.	Platinum Ranch	Total
Streams (linear feet)	5,769	3,244	33,628	42,641
Wetlands (acres)	--	--	4	4
Bottomland Hardwood (acres)	19	8	7	34
Fenceline Vegetation (acres)	1	4	--	5
Undeveloped Land (acres)	224	428	1,581	2,233
Total (acres)	244	440	1,621	--

21
 22
 23 As shown in the table, undeveloped land would be the resource primarily impacted by induced
 24 development, but multiple biological resources would also potentially be affected. Other effects
 25 related to induced growth that are not quantifiable include a potential decrease in water quality
 26 from commercial and residential pollutants, an increased need for municipal services because
 27 of new residential units, local job growth, increased tax revenue, increased congestion on local
 28 roads, and increased community pride. Because the AOI is rural in nature and the local cities do
 29 not have extensive resources and available data, these indirect effects related to induced
 30 growth cannot be quantified or analyzed further.

31
 32 **Step 7: Assess Consequences and Consider/Develop Mitigation (when appropriate)**

33
 34 Land development activities would generally be private ventures that would be regulated by the
 35 cities of Celina and Gunter land development ordinances. Developers, whether private or public

1 entities, would be responsible for mitigating the effects of their actions on the social,
2 environmental, and economic resources in the area.

3
4 The local government regulation of land development necessarily addresses environmental and
5 social impacts by requiring mitigation as part of site design and construction. Other city plans
6 and policies ensure that redevelopment is in accordance with overall city objectives. Land use
7 planning practices currently being implemented by the cities of Celina and Gunter would help to
8 manage any indirect impacts on regional and community growth. If adverse impacts were to
9 occur, joint economic development efforts on the part of the affected municipalities and local
10 businesses would likely be the most effective strategy for mitigating the adverse impacts.

11
12 Incorporating parks, open spaces, and riparian corridors around and within developed areas
13 would provide wildlife habitat and shelter. Planting these areas with native fruit or nut-bearing
14 trees/shrubs and native grain-bearing grasses would provide food for wildlife and would help to
15 mitigate impacts to habitat used by threatened/endangered species and other wildlife.

16
17 Avoidance or minimization of impacts to waters of the U.S. and wetlands should be performed
18 during the land development design phase so that only the least amount of impact occurs.
19 Mitigation is only conducted when impacts to waters of the U.S. and wetlands cannot be
20 avoided. Typical mitigation for impacts to waters of the U.S. includes the construction of
21 mitigation areas or purchasing credits from a mitigation bank. Mitigation is frequently conducted
22 as one of the requirements for obtaining a permit under Section 404 of the Clean Water Act.
23 The USACE decides what the ratio of the mitigation area would be relative to the acreage of
24 impacts to waters of the U.S. A typical mitigation ratio is three times the amount of acreage
25 impacted.

26
27 A mitigation bank is a wetland, stream, or other aquatic resource area that has been restored,
28 established, enhanced, or in certain circumstances, preserved for the purpose of providing
29 compensation for unavoidable impacts to aquatic resources permitted under Section 404 or a
30 similar state or local wetland regulation. Mitigation banks are used in situations where the
31 construction of a mitigation area is not practical. Mitigation banks are a form of “third-party”
32 compensatory mitigation, in which the responsibility for compensatory mitigation implementation
33 and success is assumed by a party other than the permittee.

34
35 The implementation of water pollution abatement control measures such as best management
36 practices used to address erosion, sedimentation, and post-construction total suspended solids
37 control would help to mitigate impacts to water quality during and after the construction of
38 developments. Providing or enhancing vegetative buffers along streams and ponds would
39 provide some filtration to storm water runoff and help to mitigate impacts to water quality.

40
41 Detention ponds could mitigate the minimal indirect effects to floodplains resulting from
42 increased surface runoff from new land development. Detention ponds are designed to
43 temporarily store a portion of surface water runoff during storm events and slowly release the
44 water over a period of time. Detention ponds are commonly used to control flooding.

Appendix 2-14

Cumulative Impacts Analysis Supporting Information

1 **Cumulative Impacts Analysis Supporting Information**
2 **Dallas North Tollway Extension Phase 4B/5A (DNT 4B/5A)**
3

4 **PROJECT LEVEL CUMULATIVE IMPACTS**
5

6 The Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations
7 [CFR] 1508.7) define cumulative impacts (i.e., effects) as “the impact on the environment which
8 results from the incremental impact of the proposed action when added to other past, present
9 and reasonably foreseeable future actions.” As this regulation suggests, the purpose of a
10 cumulative impacts analysis is to view the direct and indirect impacts of the proposed project
11 within the larger context of past, present, and future activities that are independent of the
12 proposed project, but which are likely to affect the same resources in the future. These same
13 resources are then evaluated from the standpoint of their relative abundance among similar
14 resources within a larger geographic area. Broadening the view of resource impacts in this way
15 allows the decision maker to evaluate the incremental impacts of the proposed Build Alternative
16 in light of the overall health and abundance of selected resources. In essence, a cumulative
17 impacts evaluation creates a model of the predicted condition of each resource that is
18 independent of the proposed project, and then analyzes the expected direct and indirect
19 impacts of the project within that context to determine if there is a cumulative impact. The
20 evaluation process for each resource considered may be expressed in shorthand form as
21 follows:

22
23 **BASLINE CONDITION + PROJECT IMPACTS + FUTURE IMPACTS = CUMULATIVE IMPACTS**
24 (historical and current) (direct and indirect) (reasonably foreseeable)
25

26 The evaluation of cumulative impacts discussed in this report follows the eight steps in the
27 Texas Department of Transportation’s (TxDOT) *Guidance on Preparing Indirect and Cumulative*
28 *Impact Analyses* (June 2009), which reflects the requirements of controlling case law (see
29 *Fritiofson v. Alexander*, 772 F.2d 1225, 5th Circuit, 1985). The methodology used to prepare this
30 evaluation is also in accordance with guidance from the CEQ, *Considering Cumulative Effects*
31 *under the National Environmental Policy Act* (1997).
32

33 The following eight steps of TxDOT’s *Guidance* serve as guidelines for identifying and
34 assessing cumulative impacts:
35

- 36 1. Identify the resources to consider in the analysis;
- 37 2. Define the study area for each affected resource;
- 38 3. Describe the current health and historical context for each resource;
- 39 4. Identify direct and/or indirect impacts that may contribute to a cumulative impact;
- 40 5. Identify other reasonably foreseeable actions that may affect resources;
- 41 6. Assess potential cumulative impacts to each resource;
- 42 7. Report the results; and,
- 43 8. Assess and discuss mitigation issues for all adverse impacts.

1 The initial step of the cumulative impacts analysis uses information from the evaluation of direct
2 and indirect impacts in the selection of environmental resources that should be evaluated for
3 cumulative effects. TxDOT *Guidance* states: If a project would not cause direct or indirect
4 impacts on a resource, it would not contribute to a cumulative impact on the resource. The
5 cumulative impact analysis should focus only on: (1) those resources significantly impacted by
6 the project; or (2) resources currently in poor or declining health or at risk even if project impacts
7 are relatively small (less than significant). Similarly, the CEQ guidance recommends narrowing
8 the focus of the cumulative impacts analysis to important issues of national, regional, or local
9 significance so as to ‘count what counts’, not produce superficial analysis of a long laundry list
10 of issues that have little relevance to the impacts of the proposed action or the eventual
11 decisions. Thus, the cumulative impacts analysis should focus only on those resources that are
12 substantially affected by the proposed project by direct and/or indirect impacts. Whether a
13 resource is substantially affected is a function of the existing abundance and condition of the
14 resource, and would include resources that are currently in poor or declining health, or are at
15 risk even if the proposed project impacts are not major.

16

17 ***Step 1 – Identify the Resources to Consider in the Analysis***

18

19 The proposed project’s cumulative impacts were narrowed down by carrying forward the direct
20 and indirect impacts that may contribute to a cumulative impact. In addition, only those
21 resources substantially impacted or in poor or declining health were analyzed for cumulative
22 impacts. As shown in **Table 2-1 of the EE** (see Section 2, Page 2), direct impacts would occur
23 to waters of the U.S. (streams and wetlands), floodplains, vegetation and wildlife habitat, and air
24 quality. The impacts to floodplains would be limited to bridge crossings within three floodplain
25 areas and surface water and base flood elevations would not be substantially impacted;
26 therefore, this resource was not carried forward for analysis. Direct impacts to archeological
27 resources are currently unknown and impacts cannot be assessed beyond the proposed right-
28 of-way (ROW); therefore, this resource was not carried forward for analysis. The indirect
29 impacts discussed in **Appendix 2-13** would also affect waters of the U.S., vegetation and
30 wildlife habitat, and air quality. These were the only resources carried forward in the analysis
31 because they are the only resources to be directly or indirectly impacted by the proposed DNT
32 4B/5A, or because they are in poor or declining health. It should be noted that the proposed
33 DNT 4B/5A lies within Collin and Denton counties which are part of the Dallas/Fort Worth (DFW)
34 8-hour ozone (O₃) non-attainment area, but also lies within Grayson County which is outside this
35 non-attainment area. Grayson County was not included in the air quality cumulative impacts
36 analysis.

37

38 ***Step 2 – Define Resource Study Area (RSA) for each Affected Resource***

39

40 In order to thoroughly analyze the potential cumulative impacts to a resource, unique
41 geographic and temporal boundaries must be established for each resource. These two
42 boundaries are collectively referred to as the resource study area (RSA). The RSA for each
43 resource is described below.

1 Waters of the U.S.

2 The DNT 4B/5A is located within the Elm Fork Trinity River watershed. The geographical RSA
3 for waters of the U.S. used in this analysis consists of the watershed sub-basins within the Elm
4 Fork Trinity River watershed that encompass the proposed project. These include the Little Elm
5 Creek, Buck Creek, Mustang Creek, and Clarks Branch sub-basins (59,954 acres).
6

7 The temporal RSA for waters of the U.S. extends from 2000 to 2030. The year 2000 was
8 chosen because it includes the most recent population growth in Celina and Gunter which would
9 impact waters of the U.S. Prior to 2000 the area had seen very little change since the
10 mid-1900s. Extending the timeframe forward to 2030 for cumulative impacts matches the City of
11 Celina's Comprehensive Plan (which outlines potential land use changes), and encompasses all
12 known planned developments that could impact waters of the U.S.
13

14 Vegetation and Wildlife Habitat

15 Due to laws and regulations concerning waters of the U.S., agricultural practices and
16 residential/commercial development usually avoid streams and can leave portions of pristine
17 habitat in place. For this reason, quality wildlife habitat and vegetation are usually found within
18 stream systems, adjacent to intermittent and perennial streams. The proposed project is located
19 within the Little Elm Creek, Buck Creek, Mustang Creek, and Clarks Branch sub-basins, which
20 are part of the Elm Fork Trinity River watershed. The geographical RSA for vegetation and
21 wildlife habitat used in this analysis is the same as that used for waters of the U.S., which
22 consists of the watershed sub-basins associated with Little Elm Creek, Buck Creek, Mustang
23 Creek, and Clarks Branch (59,954 acres).
24

25 The temporal RSA for vegetation and wildlife habitat is also 2000 to 2030, as identified for the
26 waters of the U.S.
27

28 Air Quality

29 Evaluating air quality in relation to cumulative impacts requires looking at three distinct RSA, as
30 described below:
31

- 32 • O₃ - The RSA for evaluating the O₃ National Ambient Air Quality Standards (NAAQS) was
33 designated as the DFW 8-hour O₃ non-attainment area, which includes Collin, Dallas,
34 Denton, Tarrant, Ellis, Johnson, Kaufman, Parker, and Rockwall counties.
35
- 36 • Carbon Monoxide (CO) - The RSA for CO was based on the ROW line, which represents
37 the locations with the highest potential for CO concentrations. CO levels resulting from this
38 project are not be expected to exceed the NAAQS for CO and would not negatively impact
39 air quality in this area.
40
- 41 • Mobile Source Air Toxics (MSAT) - The RSA for MSAT is the North Central Texas Council
42 of Governments' (NCTCOG) Metropolitan Planning Area (MPA). Unlike the other resources
43 evaluated, air quality impacts from MSAT have been evaluated quantitatively in this
44 proposed project by the North Texas Tollway Authority (NTTA). MSAT are regulated by the

1 Environmental Protection Agency (EPA) on a national basis through requirements for fuels
2 and vehicle technology. The MSAT RSA quantitatively evaluated emission changes based
3 upon the proposed project and national trends.
4

5 For O₃, CO, and MSAT, 1990 to 2030 was identified as the temporal RSA because 1990 is the
6 year in which the Clean Air Act (CAA) was amended to include new gasoline requirements and
7 address O₃ completion and 2030 matches the region's *Mobility 2030: The Metropolitan*
8 *Transportation Plan (MTP) for the Dallas/Fort Worth Area, 2009 Amendment (Mobility 2030 –*
9 *2009 Amendment)*, which provides strategies for reducing air quality impacts.
10

11 **Table 1** lists the affected resources and their corresponding geographic RSA. Maps of the
12 geographic RSA are provided in **Exhibits 2-6** and **2-7 of the EE** (at the end of Section 2).
13

14 **Table 1. Resource Study Areas for Affected Resources**

Affected Resource	Resource Study Area
Waters of the U.S.	Little Elm Creek, Buck Creek, Mustang Creek, and Clarks Branch Sub-basins
Vegetation and Wildlife Habitat	Little Elm Creek, Buck Creek, Mustang Creek, and Clarks Branch Sub-basins
Air Quality	Ozone - DFW Eight-hour Non-attainment Area CO – ROW Line MSAT – the NCTCOG MPA

15
16
17 **Step 3 – Describe the Current Health and Historical Context for Each Resource**
18

19 Waters of the U.S.

20 There are approximately 1,272,480 linear feet (LF) of streams and 240 acres of wetlands within
21 the RSA. Agricultural activities were historically, and still are, the primary activities conducted
22 within the RSA. These activities do not require the fill and degradation of waters of the U.S. The
23 current health of waters of the U.S. within the RSA is considered “stable”.
24

25 Vegetation and Wildlife Habitat

26 The RSA is located in the Texas Blackland Prairies ecoregion which historically was dominated
27 by tallgrass prairie on uplands. Deciduous bottomland woodland and forest were common along
28 rivers and creeks. Since settlement of the area began in the 1840s, forested areas have been
29 continually reduced by agriculture and urbanization. Today less than 1% of the original
30 vegetation of the Blackland Prairie remains in scattered parcels across the region. Parkhill
31 Prairie (located in the northeast corner of Collin County) is the only protected native prairie area
32 found in Collin County and is not found within the proposed project RSA.
33

34 Aerial photography of the RSA from October 2008 indicates that the primary vegetation within
35 the RSA is farmland and herbaceous vegetation. Healthy riparian areas are also found adjacent

1 to Buck Creek, Little Elm Creek, tributaries to Little Elm Creek, Mustang Creek, and Clarks
2 Branch. Approximately 1,272,480 linear feet of jurisdictional waters are present within the RSA.
3 The amount of riparian habitat available within the RSA is not easily quantifiable; however,
4 assuming an average width of 60 feet for associated riparian habitat, the jurisdictional waters in
5 the RSA would support approximately 752 acres of riparian forest. Approximately 56,869 acres
6 of herbaceous vegetation and crops/pasture, 1,068 acres of upland forest, 1,076 acres of
7 bottomland hardwoods, and 189 acres of fencerow trees comprise the remainder of the
8 vegetation in the RSA.

9
10 The conversion of forested areas to agricultural land contributed greatly to the decline in
11 healthy, viable wildlife habitat. Wildlife, unaccustomed to human activity, lost the protection of
12 living in a wooded environment and were forced to cross areas converted to agricultural land.
13 This, in turn, exposed wildlife to predators. Conversion of forested areas to agricultural land also
14 led to the loss of abundant natural food sources. Overall, increased competition for viable
15 habitat led to the decline of wildlife populations. Currently, riparian corridors within the RSA
16 provide limited quality habitat for area wildlife.

17 18 Air Quality

19 The enactment of the CAA of 1970 authorized the development of comprehensive federal and
20 state regulations to limit emissions from both stationary (industrial) sources and mobile sources.
21 Four major regulatory programs affecting stationary sources were initiated: the NAAQS, State
22 Implementation Plans (SIP), New Source Performance Standards, and National Emission
23 Standards for Hazardous Air Pollutants. The EPA was created on May 2, 1971 to implement the
24 various requirements included in the CAA of 1970.

25
26 Major amendments were added to the CAA in 1977. The 1977 CAA Amendments (CAAA)
27 primarily concerned provisions for the Prevention of Significant Deterioration of air quality in
28 areas attaining the NAAQS. The 1977 CAAA also contained requirements pertaining to sources
29 in non-attainment areas for NAAQS. A non-attainment area is a geographic area that does not
30 meet one or more of the federal air quality standards. Both of these 1977 CAAA established
31 major permit review requirements to ensure attainment and maintenance of the NAAQS.

32
33 The 1990 CAAA established specific criteria which must be met for air quality. The EPA was
34 authorized to designate areas in "non-attainment" or failing to meet established NAAQS. In July
35 1997, the EPA announced a new NAAQS for ground-level O₃. The EPA phased out and
36 replaced the previous one-hour standard with an 8-hour standard to protect public health
37 against longer exposure to this air pollutant.

38
39 In 2004, the EPA designated nine counties in North Central Texas as non-attainment for the
40 new 8-hour O₃ standard in accordance with the NAAQS. Collin and Denton counties are located
41 within the designated non-attainment area for O₃. Although the DFW region remains in non-
42 attainment for O₃, the number of daily exceedances of the federal standards for O₃ has
43 decreased within the past decade. There have been year-to-year fluctuations in O₃ levels;

1 however, the O₃ trend continues to show improvement. This trend is attributable in part to the
2 effective integration of highway and alternative modes of transportation, cleaner fuels, improved
3 emission control technologies, and the NCTCOG's regional clean air initiatives. The region
4 recently was classified as "serious" nonattainment for ozone; however, the overall health of air
5 quality in the region is considered to be stable.
6

7 ***Step 4 – Identify Direct and/or Indirect Impacts that May Contribute to a Cumulative***
8 ***Impact***

9
10 Waters of the U.S.

11 As shown in **Table 2-1**, Section 2, page 3, 19,345 LF of streams and 0.30 acre of wetlands
12 would be directly impacted by the proposed project. The 2,434 acres of induced development
13 identified in **Appendix 2-13** would affect 42,641 LF of streams and 4 acres of wetlands.
14

15 Vegetation and Wildlife Habitat

16 As discussed in **Appendix 2-3**, approximately 602 acres of vegetation would be directly
17 impacted by the proposed project. Indirect effects related to induced development would impact
18 approximately 2,297 acres of vegetation and wildlife habitat.
19

20 Air Quality

21 Direct impacts on air quality and MSAT from the project are primarily those associated with the
22 increased capacity, accessibility and the resulting projected increases in VMT. Emission
23 reductions as a result of EPA's new fuel and vehicle standards are anticipated to offset impacts
24 associated with VMT increases. It is not anticipated that there would be project related indirect
25 effects to air quality.
26

27 ***Step 5 – Identify other Reasonably Foreseeable Actions that May Affect Resources***

28
29 Based on discussions with city and county officials, no current or reasonably foreseeable
30 municipal or commercial actions beyond those associated with the proposed DNT 4B/5A were
31 identified within the RSA. It is likely that the current economic downturn has slowed
32 development in the region. The rate of development within the RSA may increase after
33 completion of the proposed project.
34

35 Transportation improvement projects within the immediate DNT 4B/5A project area include the
36 widening of State Highway (SH) 289 from Farm to Market Road (FM) 455 to North Business SH
37 289, north of Celina, from a two-lane rural highway to a six-lane urban divided highway, and the
38 widening of SH 289 from North Business 289, north of Celina, to north of County Road (CR)
39 60/CR107 (Grayson County line), from a two-lane rural roadway to a four-lane rural roadway
40 with shoulders. This proposed widening project would require approximately 10.1 acres of new
41 transportation ROW and would impact 0.15 acre of waters of the U.S., 0.2 acre of riparian
42 woodlands, 0.7 acre of fencerow vegetation, 7.9 acres of crops/pasture, and 77.6 acres of
43 maintained herbaceous vegetation. The projected average daily traffic along SH 289 between

1 FM 455 and CR 60/CR 107 in 2030 is 24,430 vehicles per day. This additional capacity has
2 been identified and analyzed for impacts to air quality in the regional MTP.

3
4 The MTP lists all transportation-related projects planned within the RSA until 2030 which could
5 impact air quality. Projects listed in the MTP include 62 major corridor improvement projects,
6 approximately 760 regionally significant roadway improvement projects, approximately 200 non-
7 regionally significant roadway improvement projects, and 46 transit improvement projects.
8 Impacts from on-road mobile sources associated with transportation actions would not
9 adversely affect the regional O₃ standard compliance or maintenance of the other air quality
10 standards.

11 12 ***Step 6 – Assess Potential Cumulative Impacts to Each Resource***

13 14 Waters of the U.S.

15 Potential cumulative impacts considered and discussed include direct and indirect impacts to
16 waters of the U.S. as a result of implementation of the proposed project in combination with the
17 effects of reasonably foreseeable public and private actions. The 59,954-acre RSA
18 encompassing the sub-basins of Little Elm Creek, Buck Creek, Mustang Creek, and Clarks
19 Branch was considered sufficient to capture most cumulative impacts of the proposed project on
20 waters of the U.S. because these sub-basins contain the streams and wetlands within the
21 proposed DNT 4B/5A project area. The lengths of impacted streams and acres of impacted
22 wetlands were determined by using development overlays on aerial photographs. For the
23 purposes of this analysis, it was assumed that any of the reasonably foreseeable development
24 would impact all waters of the U.S. within the confines of the development.

25 26 Vegetation and Wildlife Habitat

27 Potential cumulative impacts considered and discussed include direct and indirect impacts to
28 the vegetation and wildlife habitat as a result of implementation of the proposed project in
29 combination with the effects of reasonably foreseeable public and private actions. The 59,954-
30 acre RSA encompassing the sub-basins of Little Elm Creek, Buck Creek, Mustang Creek, and
31 Clarks Branch was considered sufficient to capture most cumulative impacts of the proposed
32 project on vegetation and wildlife habitat because these sub-basins contain the streams and
33 associated vegetative habitat that wildlife depends on for food, water, and shelter. Acres of
34 vegetation types in the RSA were determined from aerial photographs and topographic maps.
35 For the purposes of this analysis, it was assumed that any of the reasonably foreseeable
36 development would displace all the native vegetation and wildlife habitat within the confines of
37 the development.

38 39 Air Quality

40 Potential cumulative impacts considered and discussed include direct and indirect impacts on
41 air quality as a result of implementation of the proposed project in combination with the effects
42 of other reasonably foreseeable public and private actions. The 8-hour O₃ non-attainment area
43 for the DFW Metropolitan Area, which includes Collin and Denton counties, was considered as a
44 RSA sufficient to capture most cumulative impacts of the proposed project on air quality.

1 The information contained in **Table 2** represents the starting point for assessing the potential
 2 cumulative impacts to each resource. **Table 2** summarizes the information gathered in Steps 1
 3 through 5 and presents the potential cumulative impacts to each resource, which are further
 4 discussed in the next section.

5
6

Table 2. Summary of Resource Impacts

Resource	Direct Impacts	Indirect Effects	Reasonably Foreseeable Projects	Cumulative Impacts
Waters of the U.S.	Approximately 19,345 LF of streams and 0.3 acre of wetlands	Approximately 42,641 LF of streams and 4 acres of wetlands	Approximately 0.15 acre of stream	Approximately 61,986 LF and 0.15 acre of streams, and 4.3 acres of wetlands
Vegetation/ Wildlife Habitat	Approximately 45 acres of riparian forests, 3 acres of fencerow trees, 549 acres of crops/pasture, 0.4 acre of native grasses, and 5 acres of upland forest	Approximately 2,297 acres of undeveloped land, including unmaintained herbaceous and crops/pasture	Approximately 0.2 acre of riparian forests, 0.68 acre of fencerow trees, 7.9 acres of crops / pasture, and 77.6 acres of maintained herbaceous vegetation	Approximately 2,986 acres of vegetation impacts
Air Quality	Minimal to no impacts.	No anticipated effects	Impacts from on-road mobile sources associated with transportation actions would not adversely affect the regional O ₃ standard compliance or maintenance of the other air quality standards.	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 new fuel and vehicle standards or addressed by EPA and TCEQ regulatory emissions limits programs. Projected traffic volumes are expected to result in no 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 within the project area as listed in a conforming MTP and TIP coupled with EPA vehicle and fuel regulations fleet turnover, are anticipated to have a cumulatively beneficial impact on air quality.

7
8

1 **Step 7 – Report the Results**

2
3 Waters of the U.S.

4 The impacts on waters of the U.S. resulting from direct impacts to 19,345 LF of streams and
5 0.3 acre of wetlands in combination with approximately 42,641 LF of streams and 4 acres of
6 wetlands associated with indirect effects and 0.15 acre of streams from reasonably foreseeable
7 actions result in cumulative impacts in the RSA totaling 61,986 LF and 0.15 acre of streams,
8 and 4.3 acres of wetlands. These impacts represent 4.8% of the streams and 1.7% of the
9 wetlands in the RSA. Cumulative impacts to waters of the U.S. would not be substantial,
10 especially because mitigation of impacts is part of the federal regulatory process for such
11 resources.

12
13 Vegetation and Wildlife Habitat

14 The cumulative impacts on vegetation and wildlife habitat resulting from the approximately
15 602 acres of direct impacts in combination with the 2,297 acres of indirect effects and 87 acres
16 impacted by reasonably foreseeable actions would decrease the amount of vegetation and
17 wildlife habitat in the RSA by approximately 2,986 acres. These cumulative impacts would
18 remove approximately 4% of the vegetation present in the 59,954-acre RSA. Cumulative
19 impacts to vegetation and wildlife habitat would not be substantial.

20
21 Air Quality

22 The cumulative impacts on air quality from the proposed project and other reasonably
23 foreseeable transportation projects are addressed at the regional level by analyzing the air
24 quality impacts of transportation projects in the *Mobility 2030 – 2009 Amendment* and the
25 2008-2011 TIP, as revised. The proposed project was included in the *Mobility 2030 – 2009*
26 *Amendment* and the 2011-2014 TIP, approved by the Regional Transportation Council on June
27 3, 2010, and has been determined to conform to the O₃ non-attainment SIP. Planned
28 transportation improvements within the project area, as listed in the MTP and TIP coupled with
29 EPA vehicle and fuel regulations and fleet turnover, are anticipated to have a cumulatively
30 beneficial impact on air quality.

31
32 Some beneficial cumulative impacts may include the addition of infrastructure improvements
33 constructed to support the increased development and commerce associated with the proposed
34 roadway, and economic growth in the immediate area. Also, increased mobility and better traffic
35 congestion management would contribute to the continued maintenance of air quality standards
36 in Collin, Denton, and Grayson counties. The growth of the area would lead to the establishment
37 of better and more efficient community services, such as emergency services, utilities and
38 schools.

1 **Step 8 – Assess and Discuss Mitigation Issues for all Adverse Impacts**

2
3 Waters of the U.S.

4 Avoidance or minimization of impacts to waters of the U.S. and wetlands should be performed
5 during the project design phase so that only the least amount of impact occurs. Mitigation is only
6 conducted when impacts to waters of the U.S. and wetlands cannot be avoided. Typical
7 mitigation for impacts to waters of the U.S. includes the construction of mitigation areas or
8 purchasing credits from a mitigation bank. Mitigation is frequently conducted as one of the
9 requirements for obtaining a Section 404 permit. The USACE decides what the ratio of the
10 mitigation area would be relative to the acreage of impacts to waters of the U.S. A typical
11 mitigation ratio is three times the amount of acreage impacted.

12
13 A mitigation bank is a wetland, stream, or other aquatic resource area that has been restored,
14 established, enhanced, or in certain circumstances, preserved for the purpose of providing
15 compensation for unavoidable impacts to aquatic resources permitted under Section 404 or a
16 similar state or local wetland regulation. Mitigation banks are used in situations where the
17 construction of a mitigation area is not practical. Mitigation banks are a form of “third-party”
18 compensatory mitigation, in which the responsibility for compensatory mitigation implementation
19 and success is assumed by a party other than the permittee.

20
21 Vegetation and Wildlife Habitat

22 Mitigation for cumulative impacts to vegetation and wildlife habitat would be required at the
23 project level. As discussed in the Vegetation and Wildlife section of the EE, NTTA will
24 coordinated with the Texas Parks and Wildlife Department (TPWD) regarding potential
25 mitigation for direct impacts of the proposed project to riparian forests and prairie remnants.
26 Similarly, reasonably foreseeable TxDOT road improvement projects would require coordination
27 with the TPWD and appropriate mitigation for losses to habitat of particular importance to
28 wildlife. NTTA and TxDOT would avoid removing excessive vegetation, and after construction
29 disturbed areas would be reseeded the area with native plant species according to
30 NTTA/TxDOT-approved seeding specifications.

31
32 Development within the associated cities would be subject to the laws and ordinances
33 regulating residential, commercial and industrial development set by each city government.
34 Mitigation could include mandatory park areas or a limit on lot sizes. State and federal entities
35 protect the quality of water and wildlife habitat in the area and additional development would
36 follow the requirements of state and federal laws.

37
38 Air Quality

39 A variety of federal, state, and local regulatory controls as well as local plans and projects have
40 had a beneficial impact on regional air quality. The CAA, as amended, provides the framework
41 for federal, state, tribal, and local rules and regulations to protect air quality. The CAA required
42 the EPA to establish NAAQS for pollutants considered harmful to public health and the
43 environment. In Texas, the Texas Commission on Environmental Quality (TCEQ) has the legal

1 authority to implement, maintain, and enforce the NAAQS. Authorization in the Texas CAA
2 (TCAA) allows the TCEQ to do the following: collect information and develop an inventory of
3 emissions; conduct research and investigations; prescribe monitoring requirements; institute
4 enforcement; formulate rules to control and reduce emissions; establish air quality control
5 regions; encourage cooperation with citizens' groups and other agencies and political
6 subdivisions of the state as well as with industries and the federal government; and to establish
7 and operate a system of permits for construction or modification of facilities. Local governments
8 having some of the same powers as the TCEQ can make recommendations to the commission
9 concerning any action of the TCEQ that may affect their territorial jurisdiction, and can execute
10 cooperative agreements with the TCEQ or other local governments. In addition, a city or town
11 may enact and enforce ordinances for the control and abatement of air pollution not inconsistent
12 with the provisions of the TCAA or the rules or orders of the TCEQ.

13
14 The CAA also requires states with areas that fail to meet the NAAQS prescribed for criteria
15 pollutants to develop a SIP. The SIP describes how the state would reduce and maintain air
16 pollution emissions in order to comply with the federal standards. Important components of a
17 SIP include emission inventories, motor vehicle emission budgets, control strategies to reduce
18 emissions, and an attainment demonstration. The TCEQ develops the Texas SIP for submittal
19 to the EPA. One SIP is created for each state, but portions of the plan are specifically written to
20 address each of the non-attainment areas. These regulatory controls, as well as other local
21 transportation and development initiatives implemented throughout the DFW area by local
22 governments and other entities provide the framework for growth throughout the area consistent
23 with air quality goals. As part of this framework, all major transportation projects, including the
24 proposed project, are evaluated at the regional level by the NCTCOG for conformity with the
25 SIP.

26
27 The cumulative impact of reasonably foreseeable future growth and urbanization on air quality
28 within this area would be minimized by enforcement of federal and state regulations, including
29 the EPA and TCEQ, which are mandated to ensure that such growth and urbanization would not
30 prevent attainment with the O₃ standard or threaten the maintenance of the other air quality
31 standards.

32

1 **REGIONAL PRICED FACILITY SYSTEM ANALYSIS**

2
3 The indirect impacts analysis (**Appendix 2-13**) identified the need to study the impacts of
4 proposed expansions to the regional toll/managed lane or priced facility network through 2030.
5 Each cumulative resource is studied from a regional perspective and the impacts that the
6 proposed priced facility network would have on each resource is addressed. Because of the
7 availability of data resources at the regional level, the RSA for the regional study is the DFW
8 MPA as defined in *Mobility 2030 – 2009 Amendment*.

9 At a regional level, *Mobility 2030 – 2009 Amendment*, the MTP, presents a system of
10 transportation improvements needed to address travel demand and maintain mobility in the
11 DFW area over the next 20 plus years. The Federal Transportation Act requires the MTP to be
12 fiscally constrained, so only projects that can be constructed under reasonable funding
13 assumptions are contained in the multi-year plan. Therefore, the MTP also serves as a guide for
14 the expenditure of state and federal funds for the region, plans, programs, policies, projects,
15 partnerships, and performance. The development of the MTP is led by the NCTCOG, which
16 serves as the metropolitan planning organization (MPO) for the North Texas region. At a
17 minimum, the MTP must be updated every 4 years in nonattainment areas and must maintain a
18 20-year planning horizon. The MTP is coordinated with the public, local governments, transit
19 authorities, TxDOT, Federal Highway Administration (FHWA), and Federal Transit
20 Administration (FTA). The current MTP can be found at the following Web site:
21 <http://www.nctcog.org/trans/mtp/2030/2009Amendment.asp>.

22
23 The MTP must also meet other federal regulations for planning requirements and air quality. For
24 example, the CAAA requires the transportation plans for all non-attainment areas to be in
25 conformity with the SIP for air quality to demonstrate that projects in the MTP meet air quality
26 goals. Moreover, the DFW region is classified as a transportation management area (population
27 over 200,000) so the MTP must include a congestion management process (CMP) to address
28 congestion.

29
30 Challenged with modest transportation funding, relative to identified needs and growth, the DFW
31 region optimizes the use of its limited transportation funds through innovative financing
32 mechanisms. Population increases and traffic demand have outpaced traditional funding
33 sources (e.g., gas tax, vehicle registration). Innovative funding tools were made available by
34 Congress in the Intermodal Surface Transportation Efficiency Act (ISTEA) and the Texas State
35 Legislature (House Bills 3588 and 2702). State legislation also enables toll bonds, concession
36 fees, and excess revenues to fund supplemental roadway projects that are either adjacent to
37 those new corridors or of greatest need in the TxDOT districts where the corridors are
38 constructed. Using these tools, the North Texas region is leveraging and combining federal,
39 state, and local funding with toll funds to construct some major transportation projects. By using
40 these alternative funding mechanisms, much-needed transportation infrastructure can be
41 implemented faster than if the region relied solely on traditional funding sources.
42

1 *Mobility 2030 – 2009 Amendment* was developed amidst growing concerns regarding air quality
 2 of the DFW region and projected shortfalls in funding for many desired transportation projects
 3 and programs. Available funds are first allocated to cost-effective air quality projects and
 4 programs, and then to more traditional major capital intensive projects, if they are affordable
 5 from both a financial and air quality standpoint (see **Figure 1**, all figures are at the end of this
 6 appendix). This is done by first investing in the maintenance and operation of existing facilities
 7 and improving efficiencies [e.g., transportation system management, intelligent transportation
 8 system (ITS)], removing trips from the system (e.g., carpool/vanpool programs, bicycle and
 9 pedestrian facilities), inducing a switch to transit (e.g., bus and passenger rail), and increasing
 10 auto occupancy [e.g., high occupancy vehicle system (HOV)] . Only after maximizing the
 11 operational capacity of the existing transportation system are additional capacity and/or new
 12 location projects such as toll roads or tax-supported highways considered.

13
 14 **Figures 2 and 3** from *Mobility 2030 – 2009 Amendment* show the proposed roadway and
 15 passenger rail facilities for the region in 2030. **Table 3** shows a summary of the roadway and
 16 passenger rail system.

17
 18 **Table 3. Summary Roadway and Passenger Rail System**

System	2009 Existing		<i>Mobility 2030 – 2009 Amendment</i>	
	Lane-Miles	Percentage of Lane-Miles	Lane-Miles	Percentage of Lane-Miles
Freeways	3,931	12.8%	5,099	12.4%
Toll Roads	495	1.6%	2,556	6.2%
Major Arterials	4,197	13.7%	9,307	22.7%
Minor Arterials	9,854	32.1%	8,765	21.3%
Collectors	9,449	30.8%	10,123	24.6%
Frontage Roads	2,653	8.6%	4,377	10.7%
Managed Lanes	0	0.0%	843	2.1%
HOV Lanes	142	0.5%	0	0.0%
Total	30,721	100.0%	41,070	100.0%
Passenger Rail	Centerline Miles	Percentage of Centerline Miles	Centerline Miles	Percentage of Centerline Miles
Commuter/Regional Rail	34	41.5%	296	57.0%
Light Rail	48	58.5%	104	20.1%
Light Rail – New Technology	0	0.0%	119	22.9%
Total	82	100%	519	100.0%

Source: *Mobility 2030 – 2009 Amendment*, April 2009

19
 20
 21 For the roadway system, the 2009 transportation network for the DFW region (calculated in
 22 mainlane lane-miles) consists of 30,721 lane-miles of roadways with freeways, tollways, and

1 HOV lanes comprising 14.9% of the system. Of the total 2009 system, 495 of the lane-miles are
2 tolled (approximately 1.6%). The anticipated 2030 transportation network for DFW would consist
3 of approximately 41,070 lane-miles of roadways with freeway, tollway, and managed lanes
4 comprising 20.7% of the system. Of the total system in 2030, approximately 3,339 lane-miles
5 (toll roads and managed lanes) or 8.3% are tolled.

6
7 The proposed roadway system for the DFW area includes priced facilities (i.e., toll roads and
8 managed lanes). Toll roads are facilities where the driver is charged a fixed priced (toll or fee) to
9 use the roadway. Current toll rates on toll roads operated by NTTA (i.e., the existing Dallas
10 North Tollway, the President George Bush Turnpike, and the Sam Rayburn Tollway) are
11 14.5 cents per mile using a TollTag. Starting in 2011, small incremental rate increases will occur
12 every 2 years. Rates will adjust every odd year at 5.6% starting in 2011 to account for inflation.
13 For TxDOT-sponsored tollways, the Regional Transportation Council (RTC) and TxDOT
14 developed business terms, which set the toll rates and rate adjustments to maintain price
15 consistency between the various toll projects.

16
17 The RTC is an independent transportation policy body of the MPO and is comprised of elected
18 officials representing the counties, municipalities, and transportation providers [Dallas Area
19 Rapid Transit (DART), the Fort Worth Transportation Authority (The T), TxDOT, NTTA, etc.] in
20 the region. The RTC is responsible for overseeing the development and implementation of the
21 MTP. The RTC sets regional transportation policies for tolling, managed lanes, comprehensive
22 development agreements (CDA), limits for toll rates, and toll rate adjustments to maintain equity
23 between the various toll projects. The RTC has also established a policy on excess revenues
24 from tolling projects.

25
26 Managed lanes are separate lanes within a highway that charge a toll but the cost varies based
27 on time-of-day, vehicle occupancy, or other operational strategies. This type of pricing is also
28 called value, congestion, or dynamic pricing. This pricing strategy establishes higher rates
29 during the peak periods and lower rate during off-peak travel times. Peak toll rates would be set
30 to maintain a minimum average speed of 50 miles per hour, thus offering motorists a reliable
31 and congestion-free trip in exchange for the higher peak toll. This can encourage telecommuting
32 or flexible work hours so that motorists may switch to using toll facilities more during off-peak
33 periods. These effects are anticipated to help improve peak period level of service (LOS),
34 reduce congestion, and improve regional air quality. Commuters who travel on the managed
35 lanes will be able to benefit from faster and more reliable travel times through the use of value
36 pricing.

37
38 Incentives to encourage HOV usage in the managed lanes during peak traffic periods may
39 include a reduced toll rate, usage points redeemable for a predetermined value, or other similar
40 incentives. Transit vehicles and certain other exempt vehicles would not be charged a toll, which
41 would allow riders and users to take advantage of the reliability and predictability of managed
42 lanes. This can be an incentive to facilitate increased carpool/vanpool and transit usage.

1 Prior to construction, a detailed traffic and revenue study will be performed on each facility. Toll
2 rates will be determined on a facility-by-facility basis and would be established in accordance
3 with the business terms for TxDOT-sponsored managed lane facilities as approved by the RTC.
4 Per Senate Bill 792, TxDOT is required to release the financial information on a CDA project
5 and conduct a public hearing to disclose the anticipated toll rates. The RTC managed lane
6 policy sets up a two-phase process for implementing dynamic pricing on regional managed lane
7 facilities. The first phase lasts 6 months and would include a fixed-schedule fee depending on
8 the time of day that would not exceed a toll rate of 75 cents per mile. During this phase the fee
9 schedule will be evaluated and updated on a monthly basis. After the 6 months fixed-schedule
10 pricing will be replaced with market-based dynamic pricing. The toll rate will be established to
11 ensure a minimum average corridor speed of 50 miles per hour. A toll rate cap will be
12 established, but the dynamic price will be allowed to exceed the cap temporarily if the
13 performance of the managed lanes deteriorates too rapidly. The fixed and variable toll rates will
14 vary depending on the corridor. Conceptual fixed-fee schedule and dynamic pricing are shown
15 in **Figure 4**. Dynamic pricing systems continuously adjust and do not need to be recalibrated to
16 incorporate inflation adjustments, but the price cap would need to be reevaluated periodically.

17
18 The inflation factor assumed as part of the modeling process is based on the Consumer Price
19 Index. Assuming a steady 3% inflation rate, a toll road with a rate of 14.5 cents per mile in 2010
20 would be adjusted to 19.5 cents per mile and 26.2 cents per mile in 2020 and 2030,
21 respectively. The RTC toll rate policy for TxDOT sponsored toll roads on state highways calls for
22 an inflation adjusted fixed rate of 14.5 cents per mile or variable rates of 12.5 cents per mile
23 during off-peak periods and 17 cents per mile during peak periods on new toll facilities. The
24 NTTA controls toll rate policies on existing facilities in their system and has established a toll
25 rate increase schedule through 2017. **Figure 5** shows these RTC and NTTA policies in both
26 inflation adjusted and constant dollar terms.

27
28 Managed lanes are proposed as part of the expansion or rehabilitation of the existing non-priced
29 roadway projects. Drivers will have the choice of paying a toll to use the managed lanes or
30 traveling on non-tolled general purpose lanes or frontage roads. The tolls collected from
31 managed lanes will help finance the expansion/rehabilitation and operation of existing
32 roadways. Because of limited transportation funding, the rehabilitation and expansion of the
33 existing facilities that include managed lanes would likely not occur without the
34 additional/proposed managed lanes to help provide project financing.

35
36 The increase in the percentage of priced facilities is a reflection of the construction of several
37 new location tollways and the tolling of new additional capacity on existing freeways. Existing
38 freeway lanes would not be converted to priced lanes. **Table 4** lists the major planned roadway
39 projects included in *Mobility 2030 – 2009 Amendment* and when they are expected to be open
40 to traffic. **Figures 6, 7, and 8** show the priced facilities listed in **Table 4** for the projected years
41 of 2019, 2025, and 2030.

42

Table 4. Major Planned Roadway Projects

Roadway	Location	Responsible Agency	Work Planned	Type of Tolling
Open to Traffic by 2019				
Dallas North Tollway	SH 121 to Royal Lane	NTTA	Expand existing toll road	Fixed
FM 2499	South of Gerault Road to SH 121	TxDOT-Fort Worth (CDA)	Add general purpose lanes	None
Interstate Highway (IH) 20	IH 35E to Lancaster Road	TxDOT-Dallas	Add frontage roads	None
IH 20	Bonnie View Road to JJ Lemmon Road	TxDOT-Dallas	Add frontage roads	None
IH 20	Robinson Road to FM 1382	TxDOT-Dallas	Add frontage roads	None
IH 20	Cedar Ridge Road to Camp Wisdom Road	TxDOT-Dallas	Add frontage roads	None
IH 30	SH 121 to IH 35W	TxDOT-Fort Worth	Add general purpose lanes	None
IH 30	Henderson Street to IH 35W	TxDOT-Fort Worth	Add general purpose lanes	None
IH 30–Dallas County	SH 161 to IH 35E	TxDOT-Dallas	Add general purpose and managed lanes	Variable
IH 345	United States Highway (US) 75/Woodall Rodgers to IH 30/IH 45	TxDOT-Dallas	Add general purpose lanes	None
IH 35E	IH 635 to Loop 12	TxDOT-Dallas	Add managed lanes	Variable
IH 35E–South	Parkerville Road to US 77 (north of Waxahachie)	TxDOT-Dallas	Add general purpose lanes	None
IH 35E–South	US 77 (north of Waxahachie) to Bigham Road	TxDOT-Dallas	Add general purpose lanes	None
IH 35W	Eagle Parkway to SH 170	TxDOT-Dallas	Add general purpose and managed lanes	Variable
IH 35W	SH 170 to IH 30	TxDOT-Fort Worth	Add general purpose and managed lanes	Variable
IH 45	IH 30 to Trinity Parkway/US 175	TxDOT Dallas	Add general purpose lanes	None
IH 635	SH 121 to Royal Lane	TxDOT Fort Worth (CDA)	Add general purpose lanes	None
IH 635	Luna Road to US 75	TxDOT-Dallas	Add managed lanes	Variable
IH 820	SH 121/SH 10 Interchange to Randol Mill Road	TxDOT Fort Worth	Add general purpose lanes	None
IH 820	IH 35W to SH 121/SH 10	TxDOT-Fort Worth	Add general purpose and managed lanes	Variable
Loop 9	US 287/Outer Loop to IH 20/SH 190	TxDOT-Dallas	New toll road	Fixed
Pres. G. Bush Turnpike	IH 35E to SH 78	NTTA	Expand existing toll road	Fixed
Pres. G. Bush Turnpike (Eastern Extension)	SH 78 to IH 30	NTTA	New toll road	Fixed
S.M. Wright Parkway	IH 45 to US 175/SH 310	TxDOT-Dallas	Add general purpose lanes	None
SH 114	Kimball Avenue to SH 121 (west)	TxDOT Fort Worth (CDA)	Add general purpose lanes	None
SH 114	SH 121 (West) to International Parkway	TxDOT-Fort Worth	Add general purpose and managed lanes	Variable
SH 114 Denton County	County Line Road to FM 156	TxDOT-Dallas	Add general purpose lanes	None
SH 121	FM 157/Mid-Cities Boulevard to SH 183	TxDOT-Fort Worth (CDA)	Add general purpose lanes	None

Table 4. Major Planned Roadway Projects

Roadway	Location	Responsible Agency	Work Planned	Type of Tolling
SH 121	Dallas County Line to SH 360	TxDOT-Fort Worth (CDA)	Add general purpose lanes	None
SH 121	SH 183 to IH 820	TxDOT-Fort Worth	Add managed lanes	Variable
SH 121–Dallas County	Business SH 121 West to Tarrant County Line	TxDOT-Dallas	Add general purpose lanes	None
SH 121–Sam Rayburn Tollway	US 75 to Hillcrest Road	TxDOT-Dallas	New toll road	Fixed
SH 121–Sam Rayburn Tollway	Hillcrest Road to Business SH 121	TxDOT-Dallas	Expand existing toll road	Fixed
SH 121–Southwest Parkway	IH 30 to US 67	NTTA	New toll road	Fixed
SH 161	SH 183 to IH 20	TxDOT-Dallas & NTTA	New toll road	Fixed
SH 161/SH 360 Toll Connector	SH 161 to Sublett Road (SH 360)	TxDOT-Dallas & TxDOT-Fort Worth	New toll road	Variable
SH 170	SH 114 to US 81/US 287	NTTA	New toll road	Fixed
SH 183	SH 121 to SH 161	TxDOT-Fort Worth	Add general purpose and managed lanes	Variable
SH 183	SH 161 to IH 35E	TxDOT-Dallas	Add general purpose and managed lanes	Variable
SH 199	FM 730 to Stewart Street	TxDOT-Fort Worth	Add general purpose lanes	None
SH 199	Denver Trail to Confederate Park Road	TxDOT-Fort Worth	Add general purpose lanes	None
SH 360	SH 121 to Stone Myers Parkway	TxDOT-Fort Worth (CDA)	Add general purpose lanes	None
SH 360	Sublett Road to US 287	NTTA	New toll road	Fixed
Trinity Parkway	IH 35E to IH 45/US 175	NTTA	New toll road	Fixed
US 287	Business US 287 to IH 45	TxDOT-Dallas	Add general purpose lanes	None
US 287	Walnut Creek Drive to Broad Street	TxDOT-Fort Worth	Add frontage roads	None
US 287	Avondale-Haslett Road to IH 35W	TxDOT-Fort Worth	Add frontage roads	None
US 377	IH 20 to SH 171	TxDOT-Fort Worth	Add general purpose lanes	None
US 380–Collin County (East)	Lake Lavon to CR 608	TxDOT-Dallas	Add general purpose lanes	None
US 380–Denton County (West)	County Line Road to IH 35	TxDOT-Dallas	Add general purpose lanes	None
US 380–Denton County (West)	IH 35 to US 77/US 377	TxDOT-Dallas	Add general purpose lanes	None
US 380–Denton/Collin counties	FM 423 to Lake Forest Drive	TxDOT-Dallas	Add general purpose lanes	None
US 67–Cleburne Bypass	Business US 67 East to FM 1434	TxDOT-Fort Worth	Add general purpose lanes	None
US 75–Collin/Dallas counties	SH 121 (South) to IH 635	TxDOT-Dallas	Add general purpose and managed lanes	Variable
US 75–North Collin County	Regional Outer Loop to SH 121 South	TxDOT-Dallas	Add general purpose lanes	None
US 75–North Collin County	US 380 to SH 121 (South)	TxDOT-Dallas	Add general purpose and managed lanes	Variable
Woodall Rodgers Extension	IH 35E to Beckley Avenue	TxDOT-Dallas	Add general purpose lanes	None

Table 4. Major Planned Roadway Projects

Roadway	Location	Responsible Agency	Work Planned	Type of Tolling
Open to Traffic by 2025				
Dallas North Tollway	FM 121 to US 380	NTTA	New toll road	Fixed
IH 20–Dallas County	SH 161 to Spur 408	TxDOT-Dallas	Add general purpose lanes	None
IH 20–Parker County	US 180/Lakeshore Drive to IH 30	TxDOT-Fort Worth	Add general purpose lanes	None
IH 20/US 287	Forest Hill Drive to Park Springs Boulevard	TxDOT-Fort Worth	Add general purpose lanes	None
IH 20/US 287	IH 20 to Sublett Road (US 287)	TxDOT-Fort Worth	Add general purpose lanes	None
IH 20/US 287	IH 820 to Park Springs Blvd./Sublett Road	TxDOT-Fort Worth	Add general purpose and managed lanes	Variable
IH 30	IH 45 to Bobtown Road	TxDOT-Dallas	Add general purpose and managed lanes	Variable
IH 30–Tarrant County	IH 820 to Cooper Street	TxDOT-Fort Worth	Add general purpose and managed lanes	Variable
IH 30–Tarrant County	Cooper Street to Ballpark Way	TxDOT-Fort Worth	Add general purpose and managed lanes	Variable
IH 30–Tarrant County	Ballpark Way to SH 161	TxDOT-Fort Worth	Add general purpose and managed lanes	Variable
IH 30–West Freeway	IH 820 West to Spur 580	TxDOT-Fort Worth	Add general purpose lanes	None
IH 35E	SH 183 to IH 20	TxDOT-Dallas	Add general purpose and managed lanes	Variable
IH 35E “Northern Link”	IH 35/IH 35W to IH 635	TxDOT-Dallas	Add general purpose and managed lanes	Variable
IH 45	Trinity Parkway/US 175 to IH 20	TxDOT-Dallas	Add general purpose lanes	None
IH 635	US 75 to IH 30	TxDOT-Dallas	Add general purpose and managed lanes	Variable
IH 820/US 287	Meadowbrook Drive to IH 820/US 287	TxDOT-Fort Worth	Add general purpose lanes	None
IH 820/US 287	US 287 to IH 20	TxDOT-Fort Worth	Add general purpose and managed lanes	Variable
Loop 12	IH 35E to Spur 408	TxDOT-Dallas	Add general purpose and managed lanes	Variable
Loop 288 West	IH 35 to US 377	TxDOT-Dallas	Add general purpose lanes	None
Outer Loop (Eastern Subregion)	US 175 to IH 30	TxDOT-Dallas	New toll road	Fixed
Outer Loop (Eastern Subregion)	US 75 to IH 35	TxDOT-Dallas/ Collin County Toll Road Authority	New toll road	Fixed
Outer Loop (Western Subregion)	SH 199 to US 287/Loop 9	TxDOT-Fort Worth	New toll road	Fixed
Pres. G. Bush Turnpike	Belt Line Road to IH 635	NTTA	Expand existing toll road	Fixed
SH 114–Denton County	FM 156 to Tarrant County Line	TxDOT-Dallas	Add general purpose lanes	None
SH 114–Dallas County	SH 121 to SH 183	TxDOT-Dallas	Add general purpose and managed lanes	Variable
SH 121	FM 545 to US 75	TxDOT-Dallas	Add general purpose lanes	None

Table 4. Major Planned Roadway Projects

Roadway	Location	Responsible Agency	Work Planned	Type of Tolling
SH 121	IH 820 to Minnis Road	TxDOT-Fort Worth	Add general purpose and managed lanes	Variable
SH 170	SH 199/Outer Loop to US 81/US 287	NTTA	New toll road	Fixed
SH 190	IH 30/PGBT to IH 20/Loop 9	NTTA	New toll road	Fixed
SH 360	Brown Boulevard/Avenue K to IH 30	TxDOT-Fort Worth	Add general purpose lanes	None
SH 360	IH 30 to IH 20	TxDOT-Fort Worth	Add general purpose lanes	None
SH 360	Outer Loop to FM 2258	TxDOT-Fort Worth	New toll road	Fixed
SH 360 (toll road)	US 287 to Outer Loop/Loop 9	NTTA	New toll road	Fixed
US 287	Berry Street to IH 820	TxDOT-Fort Worth	Add managed lanes	Variable
US 67	IH 35E to FM 1382	TxDOT-Dallas	Add general purpose and managed lanes	Variable
US 67–Dallas/Ellis County	FM 1382 to Loop 9	TxDOT-Dallas	Add general purpose and managed lanes	Variable
US 80	IH 30 to Lawson Road	TxDOT-Dallas	Add general purpose and managed lanes	Variable
Open to Traffic by 2030				
IH 20–Dallas County	Spur 408 to US 175	TxDOT-Dallas	Add general purpose lanes	None
IH 30–West Freeway	Camp Bowie Boulevard to IH 820 West	TxDOT-Fort Worth	Add general purpose lanes	None
IH 30–Rockwall County	Dalrock Road to FM 2642	TxDOT-Dallas	Add general purpose lanes	None
IH 35	FM 3002 to IH 35E/IH 35W (FM 156)	TxDOT-Dallas (CDA)	Add general purpose lanes	None
IH 35	Outer Loop (FM 156) to IH 35E/IH 35W	TxDOT-Dallas	Add general purpose and managed lanes	Variable
IH 35E–Northwest Corridor	Loop 12 to SH 183	TxDOT-Dallas	Add general purpose lanes	None
IH 35W	IH 20 to SH 174	TxDOT-Fort Worth	Add general purpose lanes	None
IH 35W	IH 35/IH 35E to Eagle Parkway	TxDOT-Dallas	Add general purpose and managed lanes	Variable
IH 635	US 80 to IH 20	TxDOT-Dallas	Add managed lanes	Variable
Outer Loop (Eastern Subregion)	IH 30 to US 75	TxDOT-Dallas/ Collin County Toll Road Authority	New toll road	Fixed
US 175	SH 310 to CR 4106	TxDOT-Dallas	Add general purpose lanes	None
US 380–Denton/Collin counties	US 377 to FM 423	TxDOT-Dallas	Add general purpose lanes	None
US 75–North Collin County	County Line Road to Regional Outer Loop	TxDOT-Dallas	Add general purpose lanes	None
US 80	FM 460 to Spur 557	TxDOT-Dallas	Add general purpose lanes	None
Source: <i>Mobility 2030 – 2009 Amendment</i> , April 2009.				

1
2
3
4
5

1 Of the 108 projects listed in **Table 4**, over 45% (49 projects) of the projects listed would add
2 general purpose lanes only and 26 projects (24%) would add general purpose lanes and
3 managed lanes. Five projects (5%) would add only managed lanes to a corridor but would
4 reconstruct the existing non-priced general purpose lanes. Eighteen projects (17%) will
5 construct new toll roads on new location and four projects (4%) will widen existing toll roads.
6 Six projects (5%) will add frontage roads along existing highways.

7 8 Land Use

9 The relationships between land use, transportation, and the environment are at the heart of
10 growth management. The emerging concern that construction of new suburban highways
11 induces additional travel, vehicle emissions, and land development, making it implausible to
12 build our way out of congestion has reshaped the policy context for metropolitan transportation
13 planning. Recognizing the effects of transportation on land use and the environment, the CAAA
14 and ISTEA mandated that MPO integrate metropolitan land use and transportation planning.
15 Later, the Transportation Equity Act for the 21st Century (TEA-21) succeeded ISTEA to refine
16 this process.

17
18 The NCTCOG is promoting sustainable development as a specific objective of *Mobility 2030 –*
19 *2009 Amendment* because of the direct link between land use, transportation, and air quality.

20
21 The NCTCOG has defined sustainable development as:

- 22 • Land use and transportation practices that promote economic development while using
23 limited resources in an efficient manner.
- 24 • Transportation decision making based on impacts on land use, congestion, vehicle miles
25 traveled (VMT), and the viability of alternative transportation modes.
- 26 • Planning efforts which seek to balance access, finance, mobility, affordability, community
27 cohesion, and environmental quality.

28
29
30 The essence of sustainable development is the wise use of scarce resources so that future
31 generations may enjoy them. At the regional level, the key to maintaining sustainable patterns of
32 development is to allow municipalities the option to present a variety of land use, zoning,
33 mobility, and service packages to the development market and residents. This can be
34 accomplished by providing planning support for a diverse range of mobility options such as rail,
35 automobiles, bicycling, transit, and walking.

36
37 The MPA is forecasted to grow to almost 8.5 million people and 5.3 million jobs by the year
38 2030, producing nearly a 70% increase in population and a 67% increase in employment. If not
39 planned for and implemented in a responsible way, this type of rapid growth would have
40 negative impacts on the region. If development continues to grow away from the urban cores,
41 the VMT would substantially rise per household, per person, and per employee. Higher
42 densities, mixed-land uses, and increased transportation alternatives, which are characteristics

1 of the urban cores, reduce overall VMT. This leads to lower emissions of volatile organic
2 compounds (VOC) and nitrogen oxides (NO_x), improving air quality.

3
4 *Mobility 2030 – 2009 Amendment* land development policies were created by combining
5 regional expectations with local city plans, including anticipated population growth and land use.
6 The NCTCOG relies on the information provided by municipalities as a basis for their land
7 development policies. By understanding the municipalities' expectations, the NCTCOG is better
8 able to communicate with the public and municipalities on potential alternatives for regional land
9 development.

10
11 The NCTCOG conducted a series of demographic sensitivity analyses to quantitatively assess
12 the potential impacts of alternative growth scenarios on the region in 2030. Historically, the
13 DFW area has grown outward with new developments turning rural areas into suburban
14 municipalities. Within the alternative growth scenarios modeled by the NCTCOG, households
15 and employment locations were redistributed throughout the region to simulate alternative
16 market assumptions; however, the control numbers for population and employment remained
17 the same. **Table 5** shows the statistics produced through the analysis of each scenario. Brief
18 descriptions of each scenario are as follows:

- 19
20 • Rail Scenario: The NCTCOG redistributed population and employment growth occurring
21 between 2010 and 2030, while maintaining the population and employment control totals
22 for the region. Growth was taken from rural areas of the region and added primarily to
23 passenger rail station areas.
- 24 • Infill Scenario: The NCTCOG redistributed population and employment growth occurring
25 between 2010 and 2030, while maintaining the population and employment control totals
26 for the region. Growth was taken from rural areas of the region and added primarily to infill
27 areas along existing freeways/tollways.
- 28 • Rail with County Control Totals (RCCT) Scenario: The NCTCOG redistributed population
29 and employment growth occurring between 2010 and 2030, while maintaining the
30 population and employment control totals for the region and each individual county. Growth
31 was taken from rural areas of the region and added primarily to passenger rail-oriented
32 areas.
- 33 • Vision North Texas (VNT) Scenario: The NCTCOG redistributed population and
34 employment growth occurring between 2010 and 2030, while maintaining the population
35 and employment control totals for the region. Growth was distributed based on overall VNT
36 participant feedback.
- 37 • *forward Dallas!* Scenario: Created for the City of Dallas, the NCTCOG redistributed
38 population and employment growth occurring between 2010 and 2030 based on the final
39 alternative demographic dataset created during the *forward Dallas!* Comprehensive Plan
40 process.

1

Table 5. Alternative Growth Scenarios Compared to Historical Growth Model

Data of Interest	Rail Scenario	Infill Scenario	RCCT Scenario	VNT Scenario	<i>forward Dallas!</i>
MPA Average of Trip Length	- 8%	+ 3%	- 0.01%	- 10.9%	- 2.9%
MPA Rail Transit Boardings	+ 52%	+ 9%	+ 8%	+ 11.1%	+ 7.4%
MPA Non-Rail Transit Boardings	+ 29%	+ 11%	+ 5%	+ 16.0%	+ 11%
MPA Vehicle Miles Traveled	- 6%	- 5%	- 1.2%	- 9.4%	- 2.2%
MPA Vehicle Hours Traveled	- 9%	- 7%	- 1.7%	- 14.3%	- 5.7%
Total Vehicle Hours of Delay	- 24.0%	- 19.0%	- 4.0%	- 32.5%	- 14.5%
Lane Miles Needs	- 13.0%	- 10.0%	- 13.3%	- 30.9%	- 32.1%
Financial Needs (billions)	- \$9.5	- \$6.7	- \$2.9	- \$15.6	- \$7.0
Roadway Pavement Needs	- 8.3 sq. mi.	- 6.5 sq. mi	- 0.7 sq. mi.	- 19.8 sq. mi.	- 1.6 sq. mi.
NO _x Emissions	- 4.1%	- 3.9%	- 1.2%	- 8.5%	- 2.4%
VOC Emissions	- 5.3%	- 5.2%	- 1.5%	- 11.0%	- 3.0%

Source: *Mobility 2030 – 2009 Amendment*, April 2009, Exhibits 4-6 and 4-7.

2

3

4 The results of the analyses show a strong correlation between passenger rail and VNT
5 scenarios, both reducing the greatest amount of O₃ emissions and the amount of MPA vehicle
6 miles traveled and hours of delay.

7

8 *Mobility 2030 – 2009 Amendment* does not pick, favor, or choose any alternative land use
9 scenario. This data is provided by the NCTCOG as an educational guide for the cities and
10 municipalities that comprise the DFW metropolitan area. The alternative growth scenarios are
11 presented as potential options municipalities could incorporate into their land use policies to
12 improve regional transportation and environmental issues. Because the NCTCOG has no power
13 to control regional growth and land development, the MTP provides these alternatives as
14 guidance to city planners and developers on efficient patterns of growth which could help
15 address congestion and air quality issues.

16

17 *Mobility 2030 – 2009 Amendment* does not utilize any of these alternative growth scenarios as a
18 basis for development because these regional scenarios cannot be realistically implemented.
19 The proposed roadway system (includes priced facilities) included in the MTP is based on
20 projected growth and land use changes that are forecasted to occur. The MTP growth model
21 takes land use growth projections from each municipality as a basis for *Mobility 2030 – 2009*
22 *Amendment*. Each municipality has its own method of addressing development within their
23 boundaries depending on the growth they are experiencing. This growth includes mixed use,
24 redevelopment, new development, industrial, commercial, high density, low density, transit
25 oriented, rural growth, etc. *Mobility 2030 – 2009 Amendment* was modeled using growth
26 projections from each municipality and future growth patterns extrapolated from existing
27 patterns for the region.

1
2 The RTC has taken a proactive approach to improving regional traffic congestion and air quality
3 through its Sustainable Development Policy adopted in 2001. The RTC established basic policy
4 directions which serve as strategies to meet finance constraints, provide transportation choice,
5 and improve air quality. The objectives of these practices are to:
6

- 7 • Respond to local initiatives for town centers, mixed-use growth centers, transit-oriented
8 developments, infill/brownfield developments, and pedestrian-oriented projects.
- 9 • Complement rail infrastructure with coordinated investments in park-and-ride, bicycle, and
10 pedestrian facilities.
- 11 • Reduce the growth in VMT per person.

12
13 Although *Mobility 2030 – 2009 Amendment* and the RTC encourage these sustainable
14 development practices, the local municipalities have direct jurisdiction over land use, and public
15 agencies such as DART, The T, TxDOT, and NTTA have jurisdiction over the regional
16 transportation system. These agencies and municipalities would need to work with the
17 NCTCOG and the RTC to implement these sustainable development policies. These policies
18 represent an important new trend in local development patterns that are based on an increased
19 desire for a greater variety of transportation options, mixed-use developments, and unique
20 communities with a sense of place. This trend contributes to the increase in emphasis in the
21 region on sustainable development and the ability to achieve federal air quality attainment.
22 Additionally, this sustainable land use is one tool the NCTCOG uses to reduce the need for
23 new, costly infrastructure (utilities, transportation, emergency response, government facilities,
24 water, etc.). Sustainable land use is only one part of the solution. Only municipalities have the
25 power in the State of Texas to affect and implement land use zoning, codes, and enforcement.
26 Furthermore, no government entity has the authority or power to instruct developers or people
27 where to develop or live.
28

29 The future roadway network outlined in *Mobility 2030 – 2009 Amendment* supports the
30 predicted land use changes and growth in the region. Current and anticipated funding from the
31 federal government for transportation will not meet the demands for the transportation
32 infrastructure needed to support the projected population growth and land use changes. Priced
33 facilities are one method that the MTP employs to ensure the transportation demands from
34 future growth are met based on limited transportation funds.
35

36 The development of a managed lane network is consistent with the land use and sustainable
37 development policies discussed in the MTP. One component of the managed lane system is
38 planned access to high density development areas. As more mixed-use development centers are
39 planned in the region, managed lane facilities would connect to these centers, allowing HOV and
40 transit vehicles access to the transportation system. This would help encourage transit and
41 ridesharing and increase mobility, efficiency, and reliability on all traffic facilities.
42

1 The proposed 2030 priced facility network may affect land use within the MPA boundary by
2 helping to enhance land development opportunities. However, the priced facility network is only
3 one factor in creating favorable land development conditions; other prerequisites for growth in
4 the region include demand for new development, favorable local and regional economic
5 conditions, adequate utilities, and supportive local land development regulations and policies.
6 The proposed 2030 priced facility network as currently envisioned may, with the right conditions,
7 help influence and facilitate the planned regional land use conversion, redevelopment, and
8 growth.

9

10 Environmental Justice and Protected Classes

11 This section analyzes potential impacts to environmental justice populations in terms of traffic
12 analysis performance, job accessibility, travel time, and origin and destination. The job
13 accessibility analysis also considers protected classes. Protected classes, as defined in the
14 MTP, includes minorities and low-income populations (as specified in Title VI and Executive
15 Order 12898) as well as persons 65 years old and over, persons with disabilities, and female
16 head of household.

17

18 *Traffic Analysis Performance Reports*

19 Regional traffic analysis performance reports were developed under three transportation
20 network conditions for *Mobility 2030 – 2009 Amendment*. Three conditions used were:

21

- 22 • 2009 Baseline – Existing (2009) transportation network with 2009 demographics;
- 23 • 2030 System No Build – Existing (2009) transportation network with 2030 demographics;
- 24 • 2030 System Build – Proposed *Mobility 2030 – 2009 Amendment* improvements with 2030
25 demographics.

26

27 The daily VMT on each roadway classification under the three conditions is shown in **Table 6**.
28 In the 2009 baseline condition there are approximately 16.7 million trips per day on the roadway
29 system. The existing freeway network, which comprises 12.8% of the total roadway network
30 carries almost half (43.8%) of the daily VMT (see **Table 6**). The existing toll roads and HOV
31 lanes carry 4.5% and 0.7% of all VMT, respectively.

32

1

Table 6. Daily Vehicle Miles Traveled

Roadway Classification	2009 Baseline		2030 System No Build		2030 System Build	
	Daily VMT	%	Daily VMT	%	Daily VMT	%
Freeways	66,664,490	43.8%	84,065,652	38.8%	93,707,018	40.2%
Toll Roads	6,791,006	4.5%	9,623,974	4.4%	17,009,958	7.3%
Major Arterials	23,094,003	15.2%	32,077,691	14.8%	52,619,124	22.6%
Minor Arterials	33,605,706	22.1%	53,208,511	24.5%	31,620,646	13.6%
Collectors	12,984,113	8.5%	23,116,012	10.7%	16,433,062	7.1%
Frontage Roads	7,943,931	5.2%	13,179,122	6.1%	15,378,442	6.6%
HOV	1,133,531	0.7%	1,546,436	0.7%	0	0.0%
Managed Lanes	0	0.0%	0	0.0%	6,271,821	2.7%
Total Daily VMT	152,216,780	100.0%	216,817,399	100.0%	233,040,071	100.0%
Daily Trips	16,666,183		22,666,407		22,835,210	

Source: NCTCOG DFWRM model runs for *Mobility 2030 – 2009 Amendment*.

2

3

4 Under the 2030 system no build condition the total number of daily trips increases to
5 approximately 22.7 million because of projected population increases. The proportion of VMT on
6 priced facilities holds relatively constant, but capacity constraints in the existing freeway network
7 reduce the overall proportion of VMT on freeways by 5%. The major/minor arterials and
8 collectors carry a greater proportion of VMT under this condition and would be much more
9 congested than under the 2009 baseline condition.

10

11 The 2030 system build condition has approximately 22.8 million trips per day, slightly higher
12 than under the 2030 system no build condition because of improved transportation system
13 performance. The combined proportion of VMT on freeways and priced facilities is 50.2%
14 compared to 43.9 under the 2030 system no build condition. The greater VMT on freeways and
15 priced facilities under the 2030 system build condition would reduce the amount of congestion
16 on arterials and collectors compared to the 2030 system no build condition.

17

18 A comparison of the average loaded speed per roadway classification is shown in **Table 7**.
19 The average loaded speed is the average speed a vehicle is traveling along a specific roadway
20 classification during traffic and is calculated by dividing the total VMT by the total vehicle hours
21 traveled. The results show that the 2030 system build condition would result in daily increase in
22 roadway speed for all roadway classifications compared to the 2030 system no build condition.
23 The average loaded speeds for the 2030 system build condition would be similar to the 2009
24 baseline condition despite a population increase of over 70%.

1

Table 7. Average Loaded Speed (mph)

Roadway Classification	2009 Baseline			2030 System No Build			2030 System Build		
	AM	PM	Daily	AM	PM	Daily	AM	PM	Daily
Freeways	52.9	53.7	57.1	39.4	44.6	50.4	53.3	54.2	57.3
Toll Roads	52.7	54.7	57.6	39.5	45.6	50.6	54.7	55.7	58.4
Major Arterials	27.5	28.6	31.3	20.4	21.7	26.3	27.1	28.9	31.7
Minor Arterials	24.8	26.2	27.8	20.1	21.6	24.8	24.2	25.7	27.5
Collectors	21.8	23.0	24.1	17.7	19.0	21.4	20.6	21.9	23.2
Frontage Roads	24.0	26.0	28.1	18.8	20.1	23.7	26.0	28.1	30.2
HOV Lanes	50.9	53.5	54.6	46.0	49.1	51.5	na	na	na
Managed Lanes	na	na	na	na	na	na	50.3	52.0	53.3

Source: NCTCOG DFWRM model runs for *Mobility 2030 – 2009 Amendment*

2

3

4

5

6

7

8

9

10

11

12

13

14

In addition, **Table 8** shows a comparison of the congestion levels during the morning peak period for the three analysis conditions. The 2030 system no build condition shows that, compared to the 2009 baseline condition, fewer lane-miles are at LOS A, B, and C and more lane-miles at LOS F for all roadway classifications. Under the 2030 system build condition the proportion of lane-miles at each LOS is similar to the 2009 baseline condition for all roadway classifications. The transportation system improvements in *Mobility 2030 – 2009 Amendment*, including the additional priced facilities, are expected to accommodate the increased travel demand created by an increasing regional population while maintaining similar LOS throughout the roadway network.

1

Table 8. Morning Peak Period Level of Service for the Traffic Study Area (2030)

Roadway Classification	2009 Baseline			2030 System No Build			2030 System Build		
	Lane-Miles	LOS	% by Class	Lane-Miles	LOS	% by Class	Lane-Miles	LOS	% by Class
Freeways	3,931	A-B-C	64%	3,931	A-B-C	41%	5,099	A-B-C	60%
		D-E	22%		D-E	29%		D-E	27%
		F	14%		F	30%		F	13%
Toll Roads	495	A-B-C	69%	495	A-B-C	46%	2,556	A-B-C	88%
		D-E	19%		D-E	27%		D-E	7%
		F	12%		F	27%		F	5%
Major Arterials	4,197	A-B-C	75%	4,197	A-B-C	49%	9,307	A-B-C	72%
		D-E	14%		D-E	18%		D-E	15%
		F	12%		F	33%		F	13%
Minor Arterials	9,854	A-B-C	84%	9,854	A-B-C	65%	8,765	A-B-C	82%
		D-E	9%		D-E	13%		D-E	9%
		F	7%		F	22%		F	9%
Collectors	9,449	A-B-C	91%	9,449	A-B-C	74%	10,123	A-B-C	87%
		D-E	4%		D-E	9%		D-E	6%
		F	5%		F	17%		F	7%
Frontage Roads	2,649	A-B-C	84%	2,649	A-B-C	68%	4,375	A-B-C	85%
		D-E	7%		D-E	9%		D-E	6%
		F	9%		F	23%		F	8%
Managed Lanes	141	A-B-C	77%	141	A-B-C	68%	841	A-B-C	78%
		D-E	20%		D-E	10%		D-E	16%
		F	3%		F	22%		F	6%

Source: NCTCOG DFWRM model runs for *Mobility 2030 – 2009 Amendment*

2

3

4 Job Accessibility

5 As part of the development of the *Mobility 2030 – 2009 Amendment*, the NCTCOG performed
6 an environmental justice and Title VI analysis to ensure that no person is excluded from
7 participation in, denied benefits of, or discriminated against in planning efforts. Performance
8 measures related to job accessibility, either by automobile or transit, and congestion levels were
9 computed based on the travel times forecasted for the system no build and system build
10 conditions described in Section 1.2.1. In both cases, and for each performance measure, the
11 analysis classified each traffic survey zone (TSZ) as above or below the regional average
12 (see **Table 9**). A zone with a percentage of protected class population greater than the regional
13 average was classified as protected.

14

1

Table 9. Census 2000 Regional Percentages for Each Protected Class

Class	Percentage of Total Regional Population in the MPA
Under Poverty Line	11.0%
Black	14.3%
Hispanic	22.4%
Asian American	4.0%
American Indian/Alaskan Native	0.6%
Over 65 Years Old	7.7%
Persons with Disabilities	6.9%
Female Head of Household	12.1%

Source: *Mobility 2030 – 2009 Amendment*, April 2009, Exhibit 23-1.

2

3

4 After this classification was performed for each of the travel forecast zones, the number of jobs
5 accessible from the zones was calculated within 30 minutes by automobile and within
6 60 minutes by transit. **Table 10** provides a summary of the results. In this table, symbols
7 represent the relative difference in accessibility and congestion between protected populations
8 and unprotected populations. Black, Hispanic, low-income, and persons with disabilities would
9 have greater than 5% more accessibility or more than a 5% decrease in congestion levels
10 relative to the unprotected population under the system no build and build conditions. Asian
11 American populations would have greater accessibility by auto and transit and experience
12 similar levels of congestion as unprotected populations under the system no build and build.
13 American Indian/Alaskan Native populations would have similar accessibility by auto and
14 experience similar levels of congestion as unprotected populations but less accessibility by
15 transit under the system no build and build conditions. Persons over 65 year would have more
16 accessibility by auto and lower levels of congestion as unprotected populations but less
17 accessibility by transit under the system no build and build. Female head of household
18 populations would have more accessibility by auto and lower levels of congestion as
19 unprotected populations under the system no build and build condition, but accessibility by
20 transit would be lower than unprotected populations under the system no build and similar to
21 unprotected populations under the system build condition.

22

23

1 **Table 10. Title VI and Environmental Justice Job Accessibility Performance Measures**

Protected Populations	Census Year	Trip Based				Link Based	
		by Auto		by Transit		Level of Service	
		System No Build	System Build	System No Build	System Build	System No Build	System Build
Black	2000	+	+	+	+	+	+
Hispanic	2000	+	+	+	+	+	+
Asian American	2000	+	+	+	+	o	o
American Indian/Alaskan Native	2000	o	o	-	-	o	o
Under Poverty Line (Low-Income)	2000	+	+	+	+	+	+
Over 65 Years Old	2000	+	+	-	-	+	+
Persons with Disabilities	2000	+	+	+	+	+	+
Females (Head of Household)	2000	+	+	-	o	+	+

Source: *Mobility 2030 – 2009 Amendment*, April 2009, Exhibit 23-20

Explanation of Symbols:

- + indicates that the protected population has greater than 5% more accessibility or more than a 5% decrease in congestion levels relative to the unprotected population.
- o indicates that there is less than 5% absolute difference in job accessibility or congestion levels between protected and unprotected population.
- indicates that the protected class has less than 5% more accessibility or experiences greater than 5% more congestion relative to unprotected population.

2
3
4 It was determined that the recommended transportation projects included in *Mobility 2030 –*
5 *2009 Amendment* do not adversely impact the protected class populations disproportionately
6 when compared to the unprotected class population. In almost all cases, protected class
7 populations would have greater job accessibility by auto and transit and would experience less
8 congestion than the unprotected population under both the 2030 system build and 2030 system
9 no build conditions.

10
11 *Travel Time Comparison*
12 A travel time comparison for environmental justice and non-environmental justice TSZ was
13 performed based on the baseline, system no build, and system build conditions defined in
14 Section 1.2.1. There are 4,813 total TSZ that comprise the RSA. However, 35 have zero
15 population and employment (e.g., TSZ representing lakes, airport runways), so the total of trip
16 producing TSZ is 4,778. Minority TSZ were identified based on the federal CEQ guidance
17 document *Environmental Justice: Guidance Under the National Environmental Policy Act*.
18 Based on this guidance, minority TSZ were identified where the minority population of the TSZ
19 exceeded 50% because the meaningfully greater percent exceeded 50% [the regional minority
20 population average of 41.3% (see **Table 9**) so twice this regional average is 82.6%].
21 A low-income TSZ was defined as having the 1999 median household income below the 1999
22 poverty level established by HHS poverty guidelines. A total of 1,331 TSZ are considered

1 environmental justice TSZ (e.g., 16 low-income, 1,240 minority, 75 both low-income and
2 minority).

3
4 **Figure 9** show the TSZ that contain environmental justice populations. The figure shows that
5 the majority of environmental justice communities are located within the IH 635 and IH 820
6 loops in Dallas and Fort Worth, respectively.

7
8 The Dallas/Fort Worth Regional Travel Model (DFWRTM) model results indicate that trips from
9 both environmental justice and non-environmental justice TSZ receive travel benefits under the
10 system build condition. **Table 11** shows the changes in average travel time, trip length, and trip
11 speed between morning peak period home based work trips under the system no build and
12 build conditions as compared to 2009 baseline condition. The increase in average trip times
13 expected for residents of both environmental justice and non-environmental justice TSZ was
14 much smaller under the system build condition than the system no build condition. The reduced
15 congestion and improved travel efficiency under the system build condition allows longer
16 average trip lengths for residents of all TSZ. Based on the small increase in trip times and
17 longer trip lengths, the average travel speed for trips from all TSZ increased in the system build
18 condition, while decreasing under the system no build condition.

19
20

1

Table 11. Home Based Work Trip Characteristics

Conditions Modeled	All TSZ	Environmental Justice (EJ) Status		EJ TSZ Type		
		Non-EJ TSZ	EJ TSZ	Low-Income TSZ	Minority TSZ	Both Minority and Low-Income TSZ
Average Trip Time (minutes)						
2009 Baseline Condition	23.1	24.7	18.2	15.1	18.3	15.7
2030 System No Build Condition % Change from Baseline	29.4	31.7	20.7	18.0	20.8	17.2
	27.3%	28.3%	13.7%	19.2%	13.7%	9.6%
2030 System Build Condition % Change from Baseline	25.2	26.8	19.0	17.4	19.1	16.0
	9.1%	8.5%	4.4%	15.2%	4.4%	1.9%
Average Trip Length (miles)						
2009 Baseline Condition	14.1	15.2	10.9	9.0	11.0	9.3
2030 System No Build Condition % Change from Baseline	14.5	15.4	11.0	8.9	11.1	9.4
	2.8%	1.3%	0.9%	-1.1%	0.9%	1.1%
2030 System Build Condition % Change from Baseline	15.9	17.1	11.6	10.6	11.7	9.6
	12.8%	12.5%	6.4%	17.8%	6.4%	3.2%
Average Trip Speed (mph) [including congestion and traffic control delays]						
2009 Baseline Condition	36.6	36.8	36.0	35.6	36.0	35.6
2030 System No Build Condition % Change from Baseline	29.6	29.2	32.0	29.5	32.0	32.9
	-19.1%	-20.7%	-11.1%	-17.1%	-11.1%	-7.6%
2030 System Build Condition % Change from Baseline	37.9	38.1	36.8	36.6	36.8	36.1
	3.6%	3.5%	2.2%	2.8%	2.2%	1.4%
Source: NCTCOG DFWRM model runs for <i>Mobility 2030 – 2009 Amendment</i> .						

2

3

4

5

6

7

1 Most of the differential distribution in improvements to trip characteristics is a reflection of the
 2 more urban nature of the environmental justice TSZ as shown in **Table 12**. **Table 13** shows how
 3 travel performance improvements under the system build condition vary based on the land area
 4 type. The travel characteristics in suburban areas, where trip lengths and times start at a higher
 5 baseline, change by larger absolute and relative amounts than in the urban residential areas.
 6 Because the environmental justice TSZ are predominantly in urban residential areas the change
 7 in average trip times and lengths are smaller than for non-environmental justice TSZ in both the
 8 system build and no build conditions. Persons traveling to/from suburban and rural areas would
 9 see a bigger benefit because of longer travel distances.

10
11

Table 12. TSZ Area Types

Area Type	All TSZ	Environmental Justice (EJ) Status		EJ TSZ Type		
		Non-EJ TSZ	EJ TSZ	Low-Income TSZ	Minority TSZ	Both Minority and Low-Income TSZ
Central Business District	191	170	21	2	16	3
	4.0%	4.9%	1.6%	12.5%	1.3%	4.0%
Outer Business District	391	255	136	4	122	10
	8.2%	7.4%	10.2%	25.0%	9.8%	13.3%
Urban Residential	2,795	1,811	984	7	924	53
	58.5%	52.5%	73.9%	43.8%	74.5%	70.7%
Suburban Residential	1,171	991	180	3	168	9
	24.5%	28.7%	13.5%	18.8%	13.5%	12.0%
Rural	230	220	10	0	10	0
	4.8%	6.4%	0.8%	0.0%	0.8%	0.0%

Source: NCTCOG DFWRM model runs for *Mobility 2030 – 2009 Amendment*.

12
13
14
15
16
17
18
19
20
21
22
23

1

Table 13. Area Type Average Morning Peak Trip Characteristics

	Central Business District	Outer Business District	Urban Residential	Suburban Residential	Rural
Average Trip Time (minutes)					
2009 Baseline Condition	11.2	14.7	20.9	28.5	35.4
2030 System No Build Condition	11.9	14.6	25.3	36.1	39.2
% Change from Baseline	6.3%	-0.7%	21.1%	26.7%	10.7%
2030 System Build Condition	11.6	14.4	21.9	29.9	35.2
% Change from Baseline	3.6%	-2.0%	4.8%	4.9%	-0.6%
Average Trip Length (miles)					
2009 Baseline Condition	6.4	7.8	12.5	17.9	24.3
2030 System No Build Condition	6.2	6.9	12.5	17.6	20.6
% Change from Baseline	-3.1%	-11.5%	0.0%	-1.7%	-15.2%
2030 System Build Condition	6.7	7.7	13.4	19.4	24.9
% Change from Baseline	4.7%	-1.3%	7.2%	8.4%	2.5%
Average Trip Speed (mph) [including congestion and traffic control delays]					
2009 Baseline Condition	34.2	31.8	35.9	37.7	41.1
2030 System No Build Condition	31.4	28.4	29.7	29.2	31.5
% Change from Baseline	-8.2%	-10.7%	-17.3%	-22.5%	-23.4%
2030 System Build Condition	34.8	32.2	36.6	38.8	42.4
% Change from Baseline	1.8%	1.3%	1.9%	2.9%	3.2%
Source: NCTCOG DFWRM model runs for <i>Mobility 2030 – 2009 Amendment</i> .					

2

3

4 *Regional Origin-Destination Study*

5 To further analyze the effects of the expansion of the priced facility network in the MPA, a
6 regional origin-destination study of the morning peak period (6:30 am to 9:00 am) was
7 performed for environmental justice populations comparing two trip-making scenarios, both
8 under the year 2030 system build condition. Both scenarios are based on *Mobility 2030 – 2009*
9 *Amendment* build travel model network, but analyze priced facilities as detailed in the following
10 text:

11

- 12 • Existing Facilities Scenario – An analysis using the 2030 build network and 2030
13 demographics of priced facilities that are operational by 2009.
- 14 • Future Facilities Scenario – An analysis using the 2030 build network and 2030
15 demographics of the future priced facilities expected to begin operation between 2009 and
16 2030.

17

18 The origin-destination results in **Table 14** show how trips on the existing and future priced
19 facility networks are distributed based on the environmental justice status of TSZ in the MPA.
20 For the existing facilities scenario, approximately the same percentage of non-environmental

1 justice TSZ and environmental justice TSZ send at least one trip per day to an existing toll
 2 facility. However, the proportion of toll trips originating from non-environmental justice TSZ is
 3 higher than environmental justice TSZ. Environmental justice TSZ represent almost 28% of the
 4 TSZ but only account for 11.1% of the trips utilizing existing toll facilities and 21.5% of trips on
 5 the entire transportation network. For environmental justice TSZ, approximately 0.6% of trips
 6 would be on existing tolled facilities compared to 1.2% for non-environmental justice TSZ.

7
 8

Table 14. 2030 Morning Peak Period (6:30 am to 9:00 am) Origin-Destination Results

Data of Interest	All Trip-Generating TSZ (Non-Zero Population and Employment)	Environmental Justice (EJ) Status		EJ TSZ Type		
		Non-EJ TSZ	All EJ TSZ	Low-Income TSZ (Median Income Below Poverty Rate)	Majority Minority TSZ (>50% Minority)	Low-Income and Majority Minority TSZ
TSZ in the MPA	4,778	3,447 (72.1%)	1,331 (27.9%)	16 (0.3%)	1,240 (26.0%)	75 (1.6%)
TSZ Utilizing Priced Facilities (at least once per day)						
Existing Facilities Scenario	4,736 (99.1%)	3,414 (99.0%)	1,322 (99.3%)	16 (100.0%)	1,232 (99.4%)	74 (98.7%)
Future Facilities Scenario	4,767 (99.8%)	3,438 (99.7%)	1,329 (99.8%)	16 (100.0%)	1,238 (99.8%)	75 (100.0%)
Trips from TSZ Utilizing Priced Facilities						
Existing Facilities Scenario	265,231	235,674 (88.9%)	29,557 (11.1%)	228 (0.1%)	28,676 (10.8%)	653 (0.2%)
Future Facilities Scenario	429,921	372,290 (86.6%)	57,631 (13.4%)	459 (0.1%)	57,631 (13.4%)	2,104 (0.5%)
Trips on Entire Transportation Network from TSZ that have any Tolled Trips						
Existing Facilities Scenario	24,311,520	19,073,499 (78.5%)	5,238,021 (21.5%)	103,463 (0.4%)	4,977,473 (20.5%)	260,548 (1.1%)
Future Facilities Scenario	24,328,044	19,085,405 (78.5%)	5,242,639 (21.5%)	103,463 (0.4%)	4,981,984 (20.5%)	260,655 (1.1%)
% of TSZ Trips on Priced Facilities						
Existing Facilities Scenario	1.1%	1.2%	0.6%	0.2%	0.6%	0.3%
Future Facilities Scenario	1.8%	2.0%	1.1%	0.4%	1.2%	0.8%
Source: NCTCOG TransCAD® data for 2030 regional existing 2009 and future 2030 scenarios (2008 Origin-Destination data).						

1 Under the future facilities scenario, slightly more TSZ would send trips to priced facilities
2 because the planned facilities are distributed throughout the region. As with the existing facilities
3 scenario, approximately the same percentage of non-environmental justice TSZ and
4 environmental justice TSZ send at least one trip per day to a priced facility. However, the
5 proportion of toll trips originating from non-environmental justice TSZ is higher than
6 environmental justice TSZ. Environmental justice TSZ represent almost 28% of the TSZ but only
7 account for 13.4% of the trips utilizing future toll facilities and 21.5% of trips on the entire
8 transportation network. For environmental justice TSZ, approximately 1.1% of trips would be on
9 future priced facilities compared to 2% for non-environmental justice TSZ.

10
11 The total number of trips on priced facilities in the 2030 system build condition is 695,152 during
12 morning peak period, the sum of the trips in the existing facilities scenario and future facilities
13 scenario. This means that 38% of the total priced facility trips are on existing facilities and 62%
14 are on future facilities. Similarly, the total trips on priced facilities from environmental justice TSZ
15 is 87,188 during morning peak period, with 34% on existing facilities and 66% on future
16 facilities. As shown in **Figures 10** and **11**, existing toll roads are not adjacent to the majority of
17 environmental justice TSZ, but future proposed priced facilities would be built closer to
18 environmental justice populations. This would increase accessibility to these roadway facilities
19 as shown by the slightly higher proportion of trips on future facilities from environmental justice
20 TSZ.

21
22 Due to the increase in trips generated by environmental justice TSZ, the potential impacts to
23 low-income populations were evaluated because low-income populations would use a greater
24 proportion of their income for transportation expenses. As shown in **Table 14**, of the 1,331
25 environmental justice TSZ, 91 TSZ (16 low-income only plus 75 low-income and minority TSZ)
26 or 1.9% (0.3% plus 1.6%) are low-income. Under the existing facilities scenario, approximately
27 0.5% (0.2% plus 0.3%) of trips from these TSZ use priced facilities. Under the future facilities
28 scenario, approximately 1.2% (0.4% plus 0.8%) of trips from these TSZ use priced facilities.

29
30 *Incomplete or Unavailable Information*

31 The traffic analysis performance report, travel time comparison, and origin-destination study
32 were completed using the DFWRTM. This application is developed and maintained by the
33 NCTCOG Model Development Group and consists of a collection of software components
34 implemented on the TransCAD® 4.8 platform. The DFWRTM is a four-step trip-based travel
35 demand model which models a 5,000 square mile area in North Central Texas. The four steps
36 of the modeling process are: trip generation, trip distribution, mode choice, and traffic
37 assignment. The model was validated (for the year 1999) using a variety of user surveys and
38 traffic counts to ensure that roadway traffic volume, transit usage, peak/off-peak period
39 conditions, and roadway speeds are accurately reproduced by the model.

40
41 The DFWRTM application was implemented to forecast travel demand within the MPA. It is not
42 a social or economic prediction model, but it does incorporate some income data in the trip
43 generation, mode choice, and transit trip assignment steps for home based work trips. Within

1 each TSZ the total population, number of households, and number of jobs in several
2 employment categories vary depending on the selected year of analysis and/or demographic
3 scenario. The forecasted demographic datasets used in this analysis are derived from the
4 NCTCOG 2030 demographic forecast. Median income levels for each TSZ are included as
5 primary demographic inputs, but they are held largely static (except for inflation adjustments) for
6 all modeled years and scenarios because no reliable forecasts of changes in the geographic
7 distribution of income levels are available. At no point in the modeling process is the race or
8 ethnicity of transportation system users considered.

9
10 The ratio of the median income of a TSZ to the regional median income is used to calculate the
11 relative proportions of households that fall into the four modeled income quartiles. The ratio of
12 population to the number of households is used to create a frequency distribution of household
13 sizes ranging from one-person to six- or more person households. These two statistically
14 derived distributions along with the area type (rural, suburban residential, urban residential,
15 central business district, and other business district) are used in trip generation calculations.
16 The functions used to generate these statistical distributions were derived to be consistent with
17 observed demographic characteristics within the DFW region, based on the decennial census
18 data.

19
20 In the trip generation step of the travel model forecasting process, the socioeconomic
21 characteristics of each TSZ are used to determine the number of trips that will be generated by
22 and attracted to each TSZ. Trip production rates are based on the 1996 DFW household survey
23 conducted by the NCTCOG. Trip attraction rates are based on a 1994 workplace survey
24 conducted by the NCTCOG. These rates do not vary between model years or demographic
25 scenarios. The rates are used in conjunction with the socioeconomic data to calculate the
26 number of trips of a variety of types to and from each TSZ.

27
28 The mode choice step uses income distribution and household size data to estimate the number
29 of vehicles available to members of each household. The number of vehicles available,
30 household income and type of trip are all factored into mode choice decisions. A series of
31 nested multinomial logit models is applied to estimate the number of person trips from each TSZ
32 that will use each of the five-modeled modes: drive alone, two-person carpool, three-person or
33 more carpool, transit with walk access, and transit with vehicle access.

34
35 Each vehicle trip is classified by the purpose of the trip. Each vehicle trip of a given type is
36 treated equally by the model, so the socioeconomic factors that contributed to the creation of
37 any given vehicle trip do not factor into the trip assignment step of the modeling process. As
38 currently implemented, the modeling process requires all vehicle trips to operate under the
39 same value of time assumptions. No data to reliably estimate variations in the value of time
40 based on socioeconomic status is readily available. At the step in the modeling process where
41 socioeconomic variations in the value of time would need to be applied, some of the relevant
42 socioeconomic information is no longer tracked by the DFWRTM application.

1 Based on these characteristics of the modeling process, the environmental justice analysis
2 performed using the DFWRTM should be understood to have the following limitations:
3

4 • Data limitations:

- 5 ○ The current and future year demographics were generated on a geographic scale that is
6 not identical to the TSZ structure used in DFWRTM. Transferring demographic data from
7 U.S. Census geographies and NCTCOG Research and Information Services traffic
8 survey zones required the application of statistical techniques that reduce the reliability
9 of categorizations based on race, ethnicity, and economic status at the TSZ level.
- 10 ○ Income, race, and ethnicity are based on 2000 census data. Therefore, the data used
11 does not reflect any changes to these factors.
- 12 ○ Model-derived production of socioeconomic characteristics of vehicle trips has not been
13 validated using any control data and should not be assumed to be accurate.
- 14 ○ Demographic projections to 2030 assume the same distribution of income, race, and
15 ethnicity and does not account for any potential shifts in population types across the
16 region.

17
18 • Model limitations:

- 19 ○ Model inputs do not include race or ethnicity; therefore, the model cannot identify trips
20 based on the race or ethnicity of an individual user.
- 21 ○ Income quartiles are only used in the assignment of home-based work trips, which are
22 only 25% of trips. All other vehicle trips are not assigned based on income.
- 23 ○ For the purposes of trip distribution, mode choice, and traffic assignment, all vehicle trips
24 of the same type are treated identically. The DFWRTM model, as implemented, is not
25 capable of generating results that produce outputs that differentiate vehicle trips based
26 on the economic characteristics of transportation system users.
- 27 ○ The vehicle trip assignment process does not consider relative income differences or the
28 differences in relative cost to potential users in the population when assigning vehicle
29 trips. All vehicle trips operate under the same value of time assumptions.
- 30 ○ The DFWRTM was not designed to model the socioeconomic characteristics of each
31 trip. Model-derived reproductions of socioeconomic characteristics of trips have not been
32 validated using any control data and should not be assumed to be accurate.
- 33 ○ The DFWRTM cannot replicate dynamic pricing.

34
35 *Summary*

36 Results from the performance reports prepared for the MPA showed an increase in roadway
37 speed and an improvement in LOS for the majority of the roadway classifications in the 2030
38 system build condition compared to the 2030 system no build condition. The 2030 system build
39 condition for the MPA would generally maintain the 2009 baseline roadway performance
40 conditions throughout the NCTCOG region while accommodating the travel demands of the
41 growing regional population.
42

1 Although environmental justice populations would see an increase in spending for priced facility
2 usage under the future facilities scenario, it is proportional to the increased usage of the entire
3 MPA as the priced system expands. Almost all environmental justice TSZ were identified by the
4 NCTCOG travel demand model to potentially sending trips along priced facilities in the existing
5 facilities and future facilities scenarios. As shown in **Table 14**, 75 of the proposed 108 projects
6 include the addition of general purpose lanes that would not be tolled. For populations (including
7 environmental justice populations) who would opt to use non-priced facilities, the 2030 system
8 build condition would provide a non-priced roadway network that would operate at better traffic
9 conditions (greater speeds and an improved LOS) on all roadways and an increased benefit
10 over the 2030 system no build condition.

11
12 Avoidance and minimization of adverse effects to environmental justice populations occurred
13 during the development of the MTP. Impacts to environmental justice populations were one of
14 the several issues included and considered during the MTP planning process. All corridor
15 planning and development activities are consistent with the MTP recommendations for
16 congestion management and multimodal opportunities which benefit all segments of
17 populations. The region will continue its efforts to work with all communities in the planning
18 process to identify transportation challenges and explore and develop the appropriate strategies
19 to respond to the issues. Example strategies could include programs and projects to improve
20 availability and accessibility to alternate transportation options such as discounted transit fares
21 and tolls, HOV discounts on priced facilities, better accessibility to regional transportation
22 systems, and community level congestion management. Specific strategies and projects would
23 be developed through discussions with local governments and community representatives, as
24 needed.

25
26 Based on these analyses, the 2030 system build condition and the future facilities scenario for
27 the MPA would not cause disproportionately high and adverse cumulative impacts on any
28 minority or low-income populations as per Executive Order 12898 regarding environmental
29 justice. Therefore, no regional mitigation measures are proposed. This regional analysis is
30 based on the most recent policies, programs, and projects included in *Mobility 2030 – 2009*
31 *Amendment*. These elements are subject to change in future MTPs. At the time of approval of
32 future MTPs, a new analysis of the effects to environmental justice and protected classes would
33 be conducted.

34
35 Air Quality
36 The NCTCOG serves as the MPO for the DFW area, a 12-county metropolitan region centered
37 on Dallas and Fort Worth. Since the early 1970s, MPO have had the responsibility of developing
38 and maintaining a MTP. The MTP is federally mandated; it serves to identify transportation
39 needs; and guides federal, state, and local transportation expenditures.

40
41 Passed in 1991, ISTEA strengthened the role of the MTP and made it the central mechanism for
42 the decision-making process regarding transportation investments. The passage of the TEA-21
43 in 1998 continued this emphasis. The Safe, Accountable, Flexible, Efficient Transportation

1 Equity Act: A Legacy for Users (SAFETEA-LU) was signed into law on August 10, 2005.
2 SAFETEA-LU addresses the challenges on our transportation system such as improving safety,
3 reducing traffic congestion, improving efficiency in freight movement, increasing intermodal
4 connectivity, and protecting the environment. Both SAFETEA-LU and the CAAA impose certain
5 requirements on long-range transportation plan for the urbanized area.
6

7 Transportation plans such as *Mobility 2030 – 2009 Amendment*, according to SAFETEA-LU
8 metropolitan planning regulations, must be fiscally constrained, that is, based on reasonable
9 assumptions about future transportation funding levels. Because the DFW area is designated as
10 a nonattainment area for the 8-hour O₃ standard, the CAAA require the transportation plan to be
11 in conformity with the SIP for air quality to demonstrate that projects in the MTP meet air quality
12 goals. *Mobility 2030 – 2009 Amendment* specifically addresses regional O₃ in addition to its
13 studies of general regional air quality and the final result of the studies showed that the regional
14 roadway network (including priced facilities) would show a decrease in nitrogen oxides and
15 emissions of volatile organic compounds, which are both precursors to O₃.
16

17 Transportation conformity is a process which ensures federal funding and approval goes to
18 transportation activities that are consistent with air quality goals. Transportation activities that do
19 not conform to state air quality plans cannot be approved or funded.

20 The CAAA established specific criteria which must be met for air quality non-attainment areas.
21 The criteria are based on the severity of the air pollution problem. Transportation conformity is a
22 CAAA requirement that calls for the EPA, U.S. Department of Transportation, and various
23 regional, state, and local government agencies to integrate air quality and transportation
24 planning development processes. Transportation conformity supports the development of
25 transportation plans, programs, policies, projects, partnerships, and performance that enable
26 areas to meet and maintain national air quality standards for O₃, particulate matter, and CO,
27 which impact human health and the environment. Through the SIP, the air quality planning
28 process ties transportation planning to the conformity provisions of the CAAA. This ensures that
29 transportation investments are consistent with state and local air quality objectives. The
30 NCTCOG is responsible for the conformity analysis in the DFW area. If the criteria are not met,
31 EPA can then impose sanctions on all or part of the state. Sanctions include stricter industrial
32 controls and the withholding of federal highway and transit funds.
33

34 In the DFW region, a nine-county serious nonattainment area for the 8-hour O₃ standard has
35 been designated by the EPA. As discussed in Section 1.0, the metropolitan planning process
36 must include a CMP to address congestion. The evaluation of additional transportation system
37 improvements beyond the committed system began with a detailed assessment of
38 transportation improvements that would not require building additional facilities for single
39 occupant vehicles (SOV).
40

41 Transportation system performance information was developed as a product of the DFWRTM
42 throughout the MTP development process. This information guided development of the system

1 alternatives and indicated the impact of various improvements. The improvements
2 recommended in *Mobility 2030 – 2009 Amendment* include regional congestion management
3 strategies, bicycle and pedestrian facilities, managed HOV lanes, light/commuter rail and bus
4 transit improvements, ITS technology, freeway and tollway lanes, and improvements to the
5 regional arterial and local thoroughfare system such as intersection improvements and signal
6 timing. Because *Mobility 2030 – 2009 Amendment* is financially and air quality constrained,
7 other more cost effective methods are reviewed before SOV lanes (freeways and toll roads) are
8 added into the roadway system. ITS, transit, HOV lanes, and managed lanes are ways to meet
9 regional transportation demands under the financially constrained MTP while improving regional
10 air quality.

11
12 The additional introduction of priced facilities into the existing roadway network would not cause
13 any cumulative impacts to air quality. The regional priced facility system would provide
14 additional travel capacity to the roadway network which would allow a greater flow of traffic
15 throughout the region, decreasing the amount of cars traveling at lower speeds or idling
16 conditions. This would result in less fuel combustion and lower emissions including MSAT, CO,
17 and O₃. As noted in the direct, indirect, and system cumulative analysis discussions, EPA
18 vehicle and fuel regulations, coupled with fleet turnover, are expected to result in substantial
19 reductions of on-road emissions, including MSAT, CO, and O₃ precursors.

20
21 Water Quality

22 Water quality is regulated on the state level by Texas Council on Environmental Quality (TCEQ).
23 TCEQ monitors all major water bodies (rivers, lakes, and streams) and reports the conditions of
24 these streams in a biennial Texas Water Body Inventory report. Section 303(d) of this report
25 details those water bodies TCEQ has identified as impaired due to water contamination.

26
27 The Section 303(d) list identifies five major water systems as impaired with pollutants and
28 bacteria in the MPA. These major water bodies are the Upper Trinity River, the West Fork
29 Trinity River, the East Fork Trinity River, the Elm Fork Trinity River, and the Clear Fork Trinity
30 River. The construction of the proposed priced facility system would cross and impact these
31 water bodies at multiple locations and could cause water quality impacts.

32
33 As stated previously, TCEQ regulates water quality through storm water pollution prevention
34 plans (SW3P), municipal separate storm water sewer system (MS4), and best management
35 practices. All construction of these priced facilities would follow these water quality permits that
36 would prevent further pollution to these impaired waters and to waters that are not impaired.
37 Additionally any indirect land use development that would occur from the construction of these
38 facilities would follow TCEQ regulations for water quality through SW3P and MS4. Compliance
39 with state requirements from TCEQ for water quality is required for federal, state, local, and
40 private developments. Therefore, the regional priced facility network would not have a
41 cumulative impact to water quality.

42
43

1 Waters of the U.S.

2 The U.S. Army Corps of Engineers (USACE) regulates waters of the U.S. in the State of Texas.
3 The MPA is under the jurisdiction of the Fort Worth District of the USACE. Fill of any
4 jurisdictional waters of the U.S. is required to be permitted through the USACE.

5
6 While the USACE has specific guidelines for identifying waters of the U.S., several methods
7 exist to preliminarily identify these waters. USGS topography maps and the TCEQ Water
8 Quality Inventory database provide information for the location of larger rivers and streams that
9 would fall under the USACE jurisdiction. The National Wetlands Inventory maps created and
10 maintained by the U.S. Fish and Wildlife Service (USFWS) attempts to identify potential
11 wetlands through the use of infrared aerial photography (digital ortho quarter quads). The
12 current status for the National Wetland Inventory maps for the MPA consists of digital formats
13 and hard copy formats; some areas are currently not mapped.

14
15 Although this data is incomplete, it serves as a background for the identification of waters of the
16 U.S. Government and private developments must receive permits to fill waters of the U.S. and
17 the identification of these waters of the U.S. is completed at the project level with field surveys.

18
19 From the available data, the regional priced facility system would impact and cause fill to waters
20 of the U.S., both streams and potential wetlands. USACE policy requires that any potential
21 impacts to waters of the U.S. be avoided or minimized before impacts are assessed.
22 Additionally, any permit for impacts to waters of the U.S. requires statements regarding
23 avoidance and minimization measures taken for the project as stated in 33 CFR 325.1(d)(7).
24 These priced facility projects would be required to comply with permitting and mitigation for the
25 fill of these waters of the U.S. Any land use change or development that would occur from this
26 regional priced facility system would also be required to acquire a permit and provide mitigation
27 for fill and loss of waters of the U.S.

28
29 Through the permitting and mitigation process the USACE has implemented a no net loss policy
30 for permanent impacts to wetlands and waters of the U.S. This ensures that loss of these waters
31 would require mitigation that is equal or greater than the loss. Because the USACE would
32 regulate and require mitigation for loss of these waters of the U.S., the priced facility network
33 would not cause a cumulative impact to waters of the U.S.

34
35 Vegetation

36 An inventory of regional vegetation is not available for the MPA. General vegetation descriptions
37 identifying regions and ecological areas are available from many resources. These resources
38 (e.g., *Vegetation Types of Texas*) vary in description of areas of regions and do not update their
39 descriptions from the original publications. Project specific vegetation descriptions are the best
40 method to map the vegetation that would be affected by a project.

41 The MPA lies in the Blackland Prairie and Cross Timbers ecological regions identified by the
42 TPWD. The construction of most of the proposed priced facility system would occur in areas
43 already developed and contain urban type vegetation. The projects outside the urban areas

1 could impact natural vegetation and the changes in land use and development that may be
2 caused by these facilities would impact vegetation surrounding these projects.

3
4 Under Planning and Environmental Linkages (PEL) and SAFETEA-LU Section 6001,
5 coordination with resource agencies is encouraged to help minimize and avoid impact to the
6 environment (both human and biological). Through different programs and grants, the NCTCOG
7 works with various supporting agencies on resource protection from the transportation system,
8 including vegetation. Currently, the NCTCOG is working to implement PEL efforts in
9 consultation with resource agencies. Consultation efforts are conducted at Transportation
10 Resource Agency Consultation and Environmental Streamlining meetings that offer both
11 transportation and environmental planning professionals a forum to develop consensus on
12 environmental and transportation aspects of long-range transportation plans. Other mitigation
13 can occur through TxDOT districts for loss of vegetation based on the Memorandum of
14 Understanding and Memorandum of Agreement with TPWD, which focuses on special habitat
15 types of wildlife and protected species. Wetlands are under the jurisdiction of the USACE and
16 mitigation for the loss of these wetlands (which includes the vegetation) would occur through the
17 permitting process. The USFWS can regulate and require mitigation for loss of vegetation that is
18 designated habitat for a threatened or endangered species. Finally, municipalities can
19 implement ordinances to protect trees, natural land, or open green spaces.

20
21 Although impacts to vegetation would occur from the priced facility system, these impacts could
22 be regulated at the project level for each individual roadway project. Regulated vegetation (i.e.,
23 wetlands, threatened, or endangered species habitat) would be protected and any impacts to
24 these regulated vegetation areas would require mitigation. Unregulated vegetation would not
25 receive any direct protection or mitigation through laws or regulations. Any potential protection
26 would be done on a per project basis and would be implemented by the project owner. Because
27 of the potential mitigation for vegetation, most impacts would be avoided or minimized;
28 therefore, there would be no cumulative impacts to vegetation from the priced facility system.

29 30 Conclusion

31 The regional priced facility system would cause minor impacts to some of the identified
32 resources in this section. Land use impacts cannot be mitigated at a regional level, but at a
33 municipal level because these entities have direct control over land use. Municipalities would
34 work with TxDOT, DART, The T, and the NCTCOG to address regional infrastructure changes
35 in their comprehensive plans.

36
37 As part of *Mobility 2030 – 2009 Amendment*, the NCTCOG specifically addresses two issues –
38 air quality and environmental justice populations. The transportation planning process, at a
39 regional level, provides ways to avoid and minimize potential impacts that could occur. To be
40 implemented, priced facility projects must be included in the Statewide Transportation
41 Improvement Program (STIP), Transportation Improvement Program (TIP), and MTP;
42 additionally, the TIP and MTP must conform to the SIP. Additionally, the NCTCOG performed
43 an environmental justice and Title VI analysis to ensure that no person is excluded from

1 participation in, denied benefits of, or discriminated against in planning efforts, including the
2 development of the MTP. This assures that each project is in compliance with the STIP/TIP and
3 MTP for air quality under the CAAA and the MTP is consistent with Title VI of the Civil Rights
4 Act of 1964 and Executive Order 12898 on environmental justice, as well as the Civil Rights
5 Restoration Act of 1987.

6
7 State and federal regulatory agencies that have direct jurisdiction over natural and cultural
8 resources would be responsible for requiring avoidance, minimization, and mitigation from any
9 entity whose proposed project (transportation or other type) has a direct impact to any of these
10 resources.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

THIS PAGE LEFT BLANK INTENTIONALLY

Maintenance and Operation of Existing Facilities

Improve Efficiency of Existing Facilities

Trans. System Management
Intelligent Trans. Systems

Remove Trips From System

Carpool/Vanpool Program
Pedestrian/Bicycle Facilities

Induce Switch to Transit

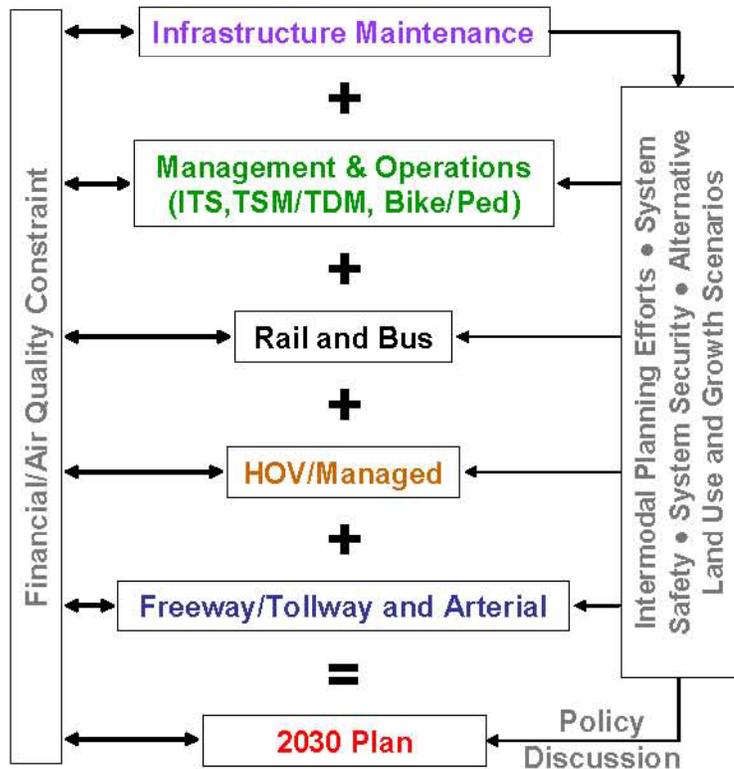
Bus/Commuter Rail/Light Rail

Increase Auto Occupancy

HOV System

Additional Single Occupant Vehicle Capacity

Freeway/Tollway
Regional Arterial



Regional Priced Facility System Analysis



Figure 1
Mobility 2030 - 2009 Amendment
Prioritization of Improvements

Texas Department of Transportation

Date Created: December 2010

Source: NCTCOG, 2010

Funded Roadway Recommendations

Legend

- New Freeway Facilities
- New Tollway Facilities
- Additional Capacity To Existing Freeway/Tollway
- HOV/Managed Lanes
- Improvements to Existing Freeway and HOV/Managed Lanes
- Selected New/Improved Regionally Significant Arterials
- Freeways/Tollways

Fort Worth CBD



Dallas CBD



Corridor specific design and operational characteristics for the Freeway/Tollway system will be determined through ongoing project development.

Additional and improved Freeway/Tollway interchanges and service roads should be considered on all Freeway/Tollway facilities in order to accommodate a balance between mobility and access needs.

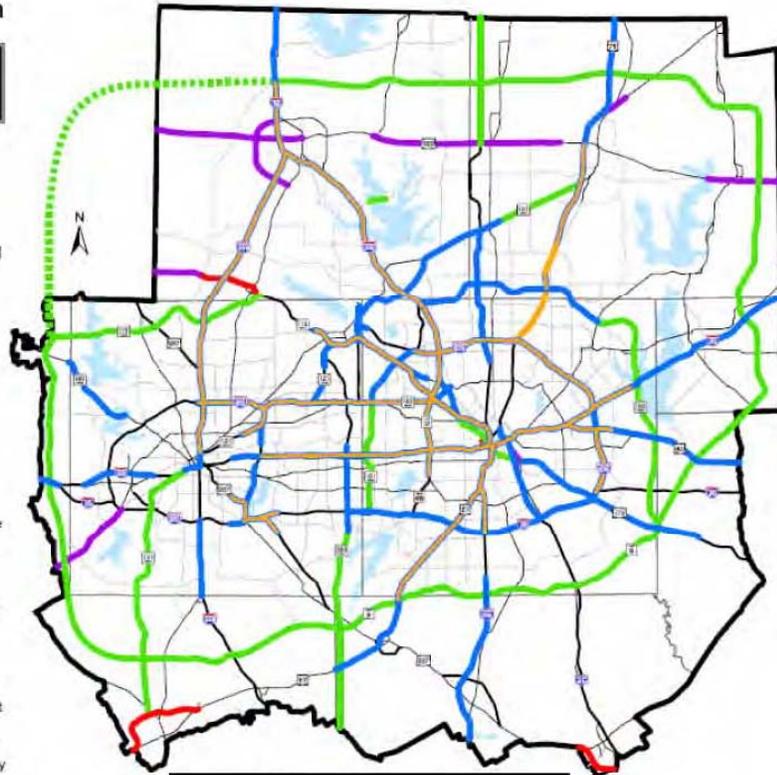
All Freeway/Tollway corridors require additional study for capacity, geometric, and safety improvements related to truck operations.

New facility locations indicate transportation needs and do not represent specific alignments

Operational strategies to manage the flow of traffic should be considered in the corridors where additional freeway or tollway lanes are being considered.



North Central Texas
Council of Governments
Transportation



\$68.9 Billion Regional Roadway System
Additional Freeway/Tollway lane miles = 3,500
Additional HOV/Managed lane miles = 700

August 13, 2009

Regional Priced Facility System Analysis



Figure 2
Mobility 2030 - 2009 Amendment
2030 Funded Roadway Improvements

Texas Department of Transportation

Date Created: December 2010

Source: NCTCOG, 2010

Mobility 2030 The Metropolitan
2009 AMENDMENT Transportation Plan

Passenger Rail Recommendations

Legend

- Light Rail
- Light Rail - New Technology
- Regional Rail
- - - Regional Rail - Special Events Only
- Existing Rail Corridors
- Highways
- Modern Streetcar

Fort Worth CBD



Dallas CBD



The Dallas and Fort Worth Streetcar systems are included in the plan and final alignments will be determined by each city.

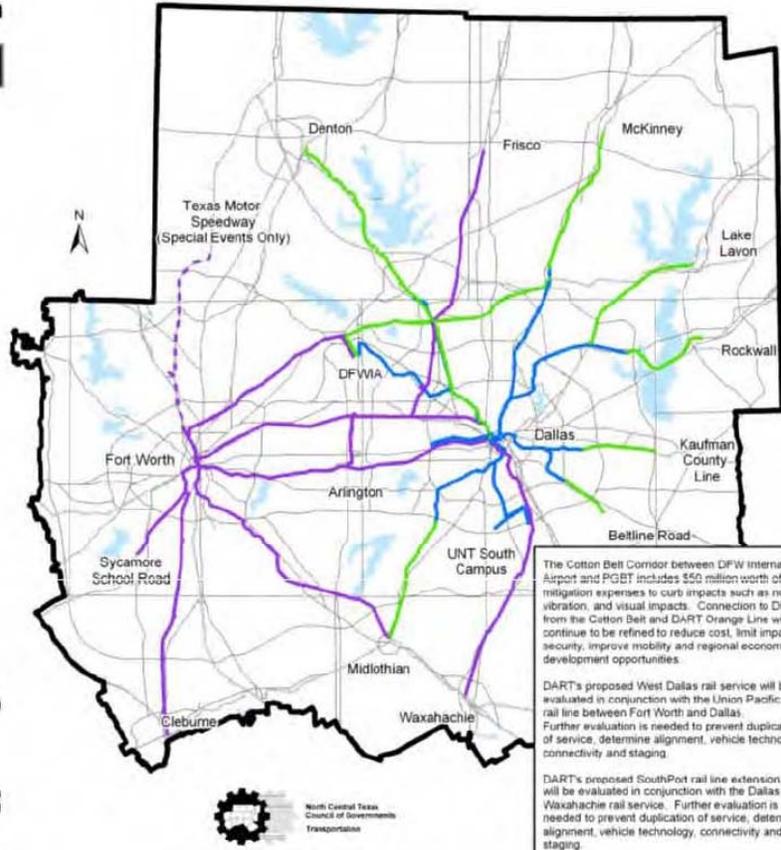
Corridor specific design and operation characteristics for the Intercity Passenger, Regional Passenger and Freight Rail Systems will be determined through capacity evaluation and ongoing project development. Refined rail forecasts are necessary to determine technology and alignment in Future Rail corridors.

All existing railroad rights-of-way should be monitored for potential future transportation corridors. New facility locations represent transportation needs and do not reflect specific alignments.

Institutional structure being reviewed for the region.

The need for additional rail capacity in the Dallas CBD, Fort Worth CBD, DFW International Airport, and other inter-modal centers will be monitored. A grade separation is needed for the Dallas CBD second alignment.

April 09, 2009



The Cotton Belt Corridor between DFW International Airport and PGBT includes \$50 million worth of mitigation expenses to curb impacts such as noise, vibration, and visual impacts. Connection to DFWIA from the Cotton Belt and DART Orange Line will continue to be refined to reduce cost, limit impacts to security, improve mobility and regional economic development opportunities.

DART's proposed West Dallas rail service will be evaluated in conjunction with the Union Pacific rail line between Fort Worth and Dallas. Further evaluation is needed to prevent duplication of service, determine alignment, vehicle technology, connectivity and staging.

DART's proposed SouthPort rail line extension will be evaluated in conjunction with the Dallas to Waxahachie rail service. Further evaluation is needed to prevent duplication of service, determine alignment, vehicle technology, connectivity and staging.



Regional Priced Facility System Analysis



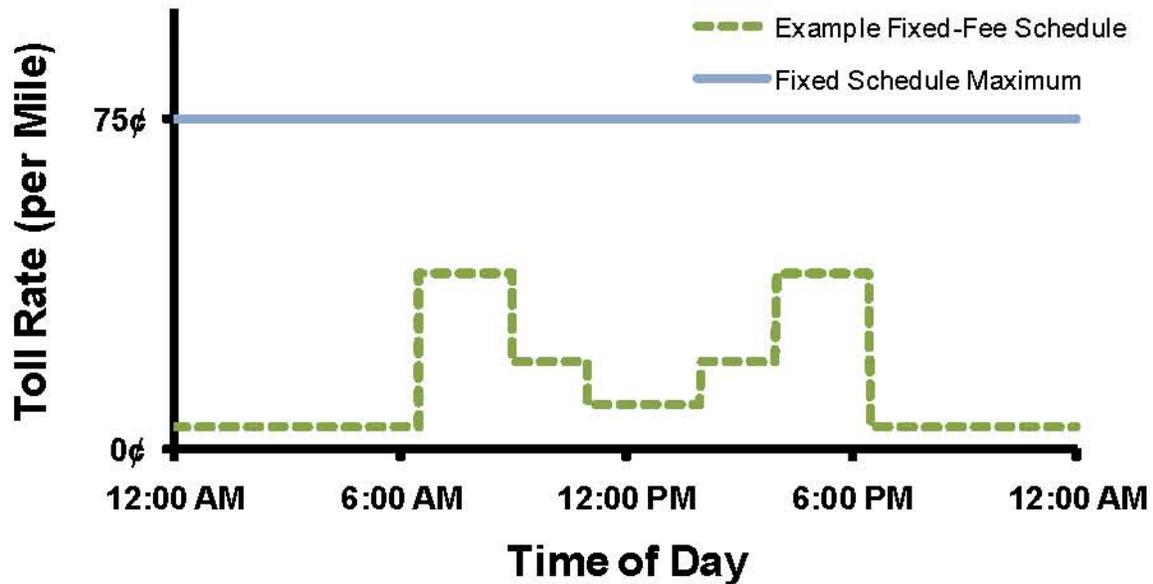
Figure 3
Mobility 2030 - 2009 Amendment
2030 Passenger Rail Recommendations

Texas Department of Transportation

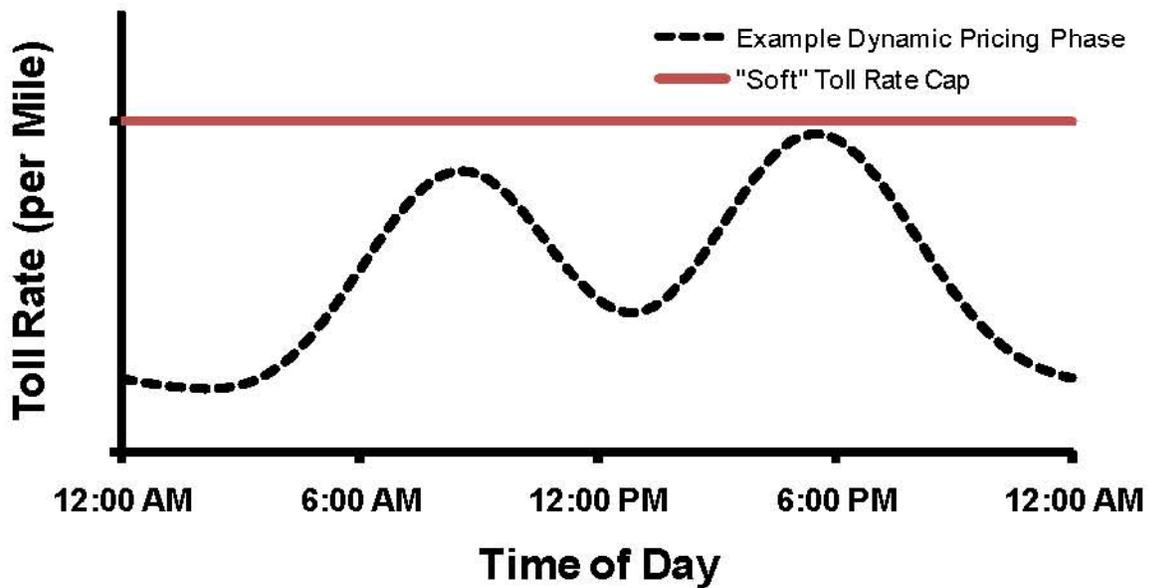
Date Created: December 2010

Source: NCTCOG, 2010

Variable Rate Tolls (First Six Months)



Variable Rate Tolls (After Six Months)



Regional Priced Facility System Analysis

Figure 4 – Variable Toll Rates

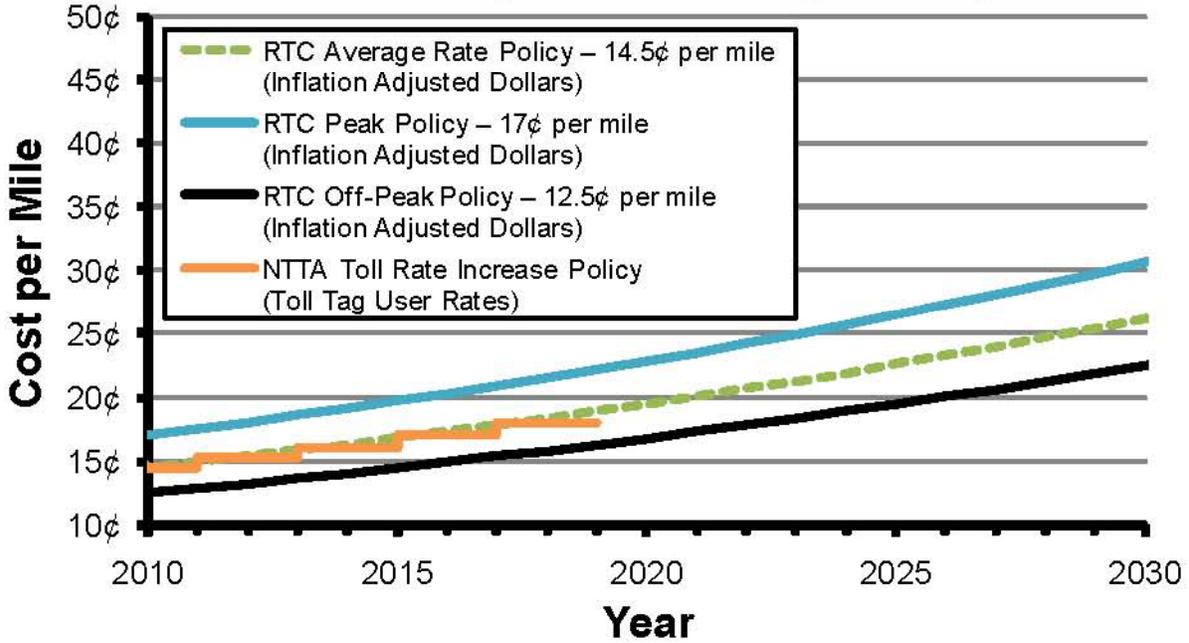


Texas Department of Transportation

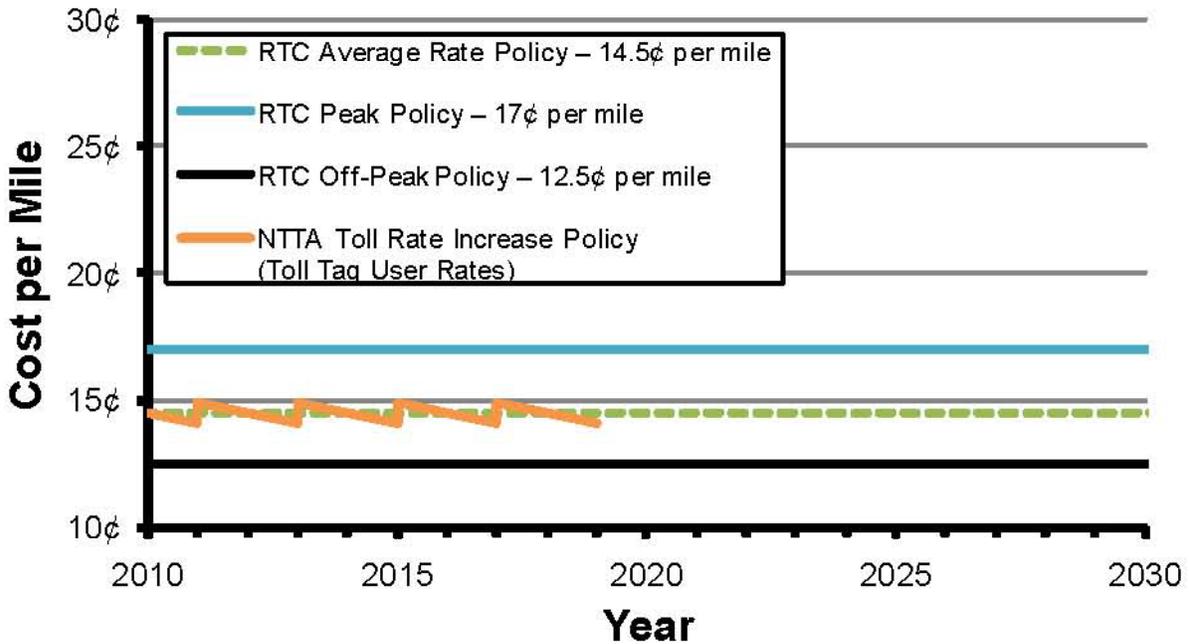
Date Created: December 2010

Source: NCTCOG, 2010

Toll Rates (Inflation Adjusted)



Toll Rates (Constant Dollars)



Regional Priced Facility System Analysis

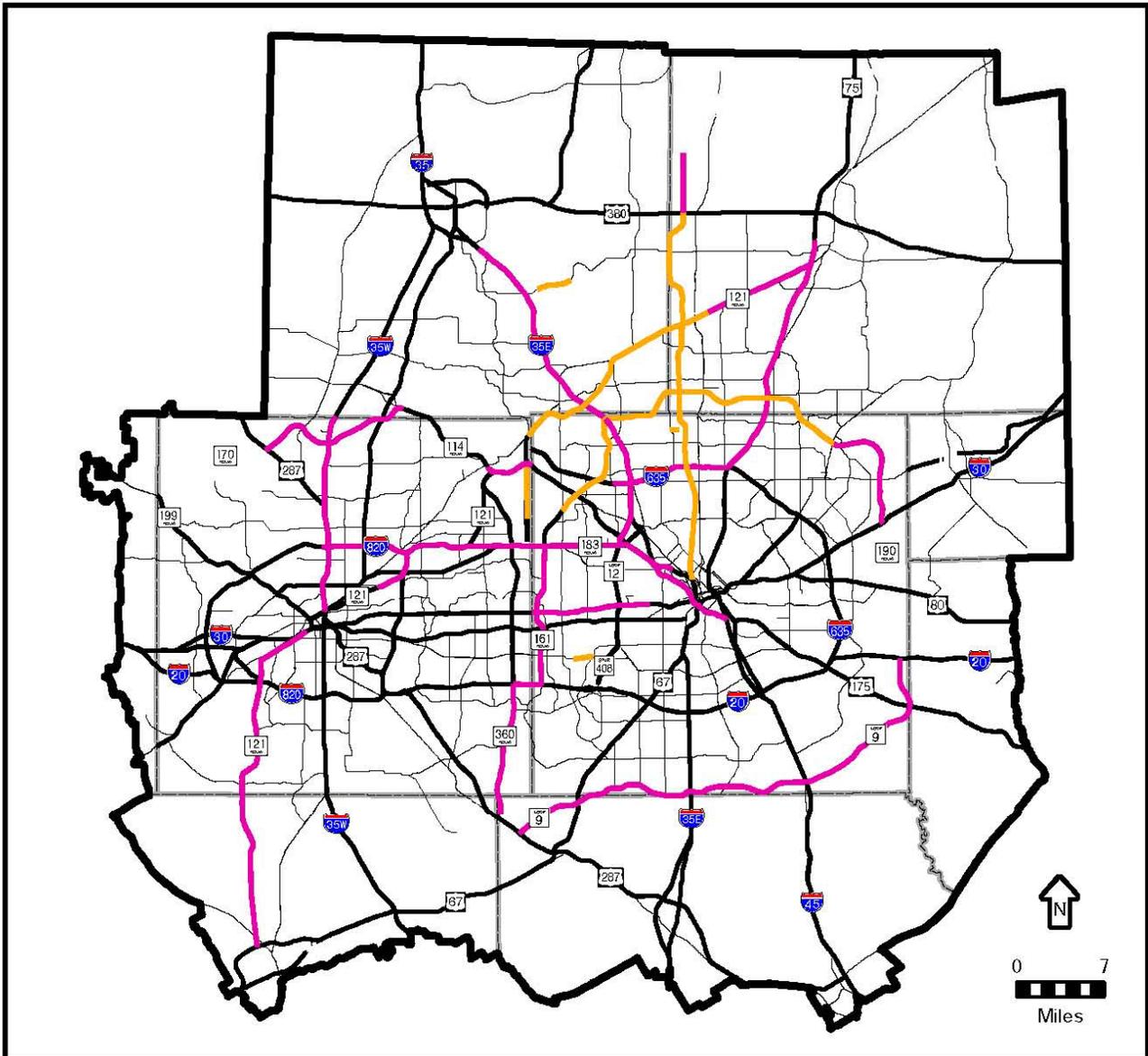
Figure 5 – Toll Rate Inflation Adjustments



Texas Department of Transportation

Date Created: December 2010

Source: NCTCOG, 2010



Legend

- 2009 Facilities
- Open to Traffic by 2019
- Freeway/Tollway
- Major Arterial
- County Limits
- MPA Boundary (Mobility 2030 - 2009 Amendment)

Regional Priced Facility System Analysis

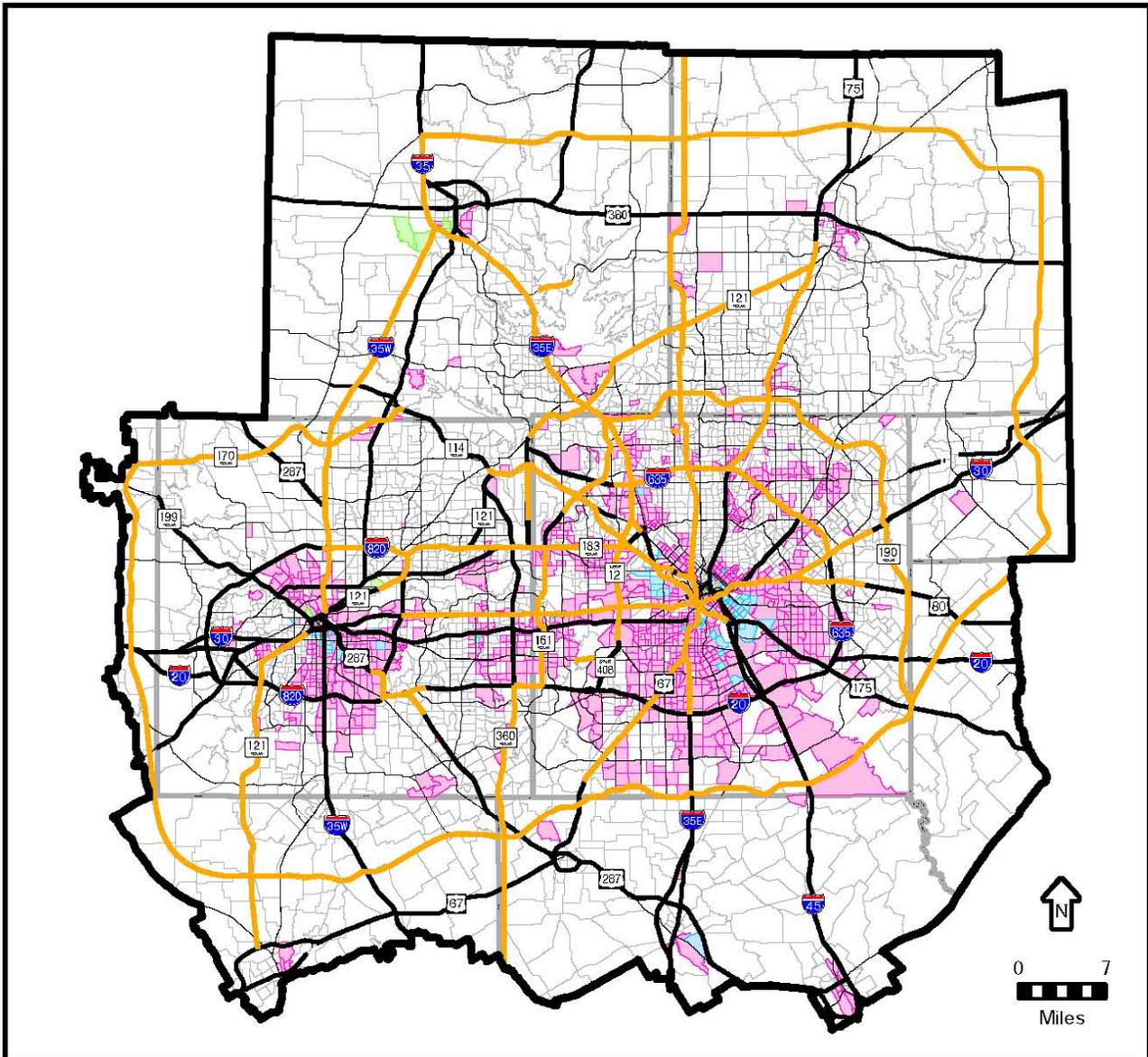
Figure 6
Mobility 2030 - 2009 Amendment
 2019 Priced Facilities



Texas Department of Transportation

Date Created: December 2010

Source: NCTCOG, 2010



Legend

- Existing or Future Priced Facility through 2030
- Freeway/Tollway
- Major Arterial
- County Limits
- MPA Boundary (Mobility 2030 - 2009 Amendment)

Environmental Justice Transportation Survey Zones

- Low Income (Median Income)
- Minority (> 50 Percent)
- Both Minority and Low Income
- Non-EJ Zone

Regional Priced Facility System Analysis

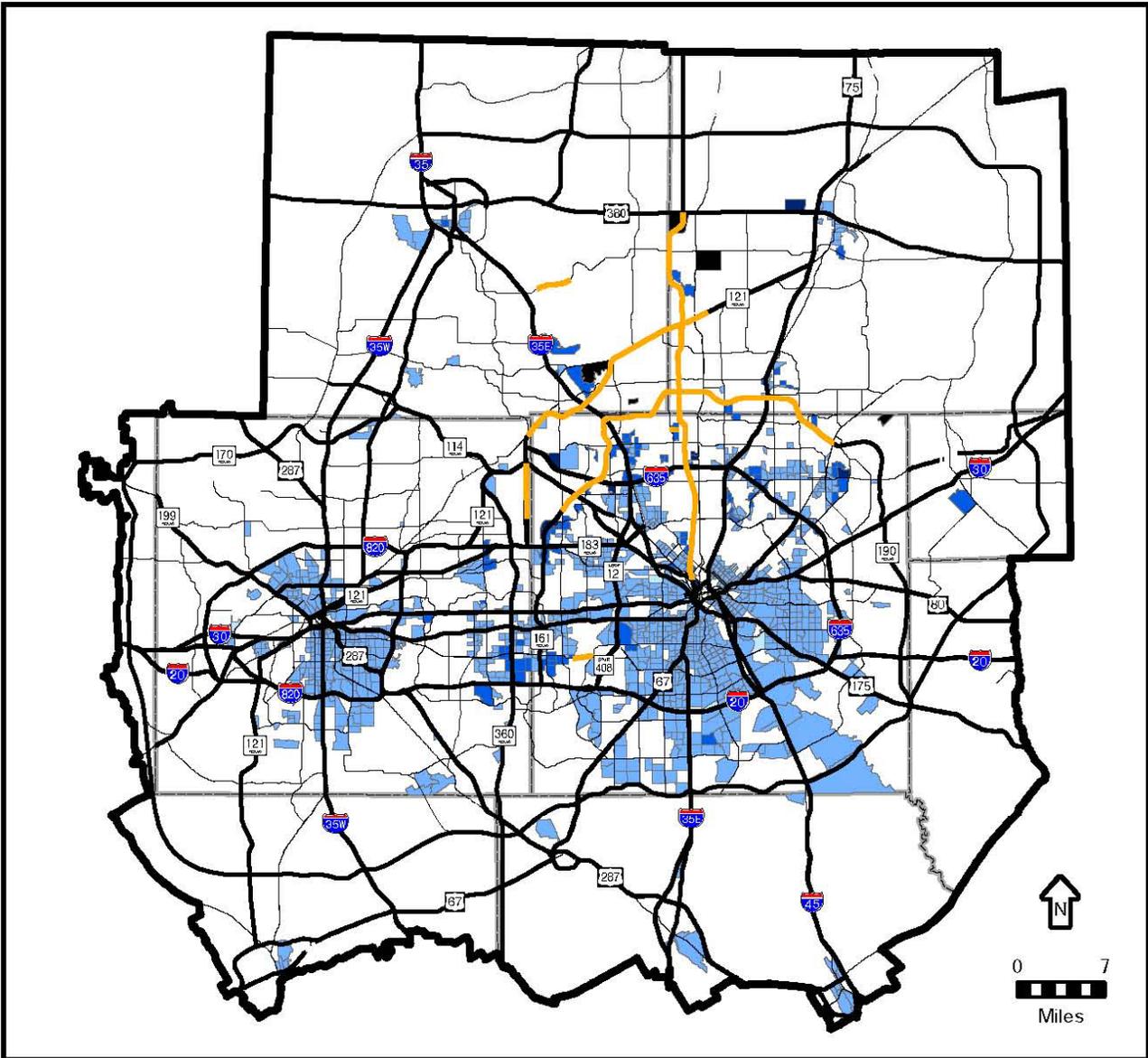
Figure 9 – Environmental Justice Travel Survey Zones



Texas Department of Transportation

Date Created: December 2010

Source: NCTCOG, 2010



Legend

- | | | | | | |
|---------------------------------|-----------------|----------------|---------------|---|---|
| Existing Priced Facility (2009) | Freeway/Tollway | Major Arterial | County Limits | MPA Boundary (Mobility 2030 - 2009 Amendment) | Environmental Justice Transportation Survey Zones (TSZs) |
| | | | | | Less than 1 Trip |
| | | | | | 1-50 Trips (19,548 Trips, 51% of Environmental Justice TSZ Trips) |
| | | | | | 51-150 Trips (10,971 Trips, 28% of Environmental Justice TSZ Trips) |
| | | | | | 151-300 Trips (3,766 Trips, 10% of Environmental Justice TSZ Trips) |
| | | | | | More than 300 Trips (4,327 Trips, 11% of Environmental Justice TSZ Trips) |

Regional Priced Facility System Analysis

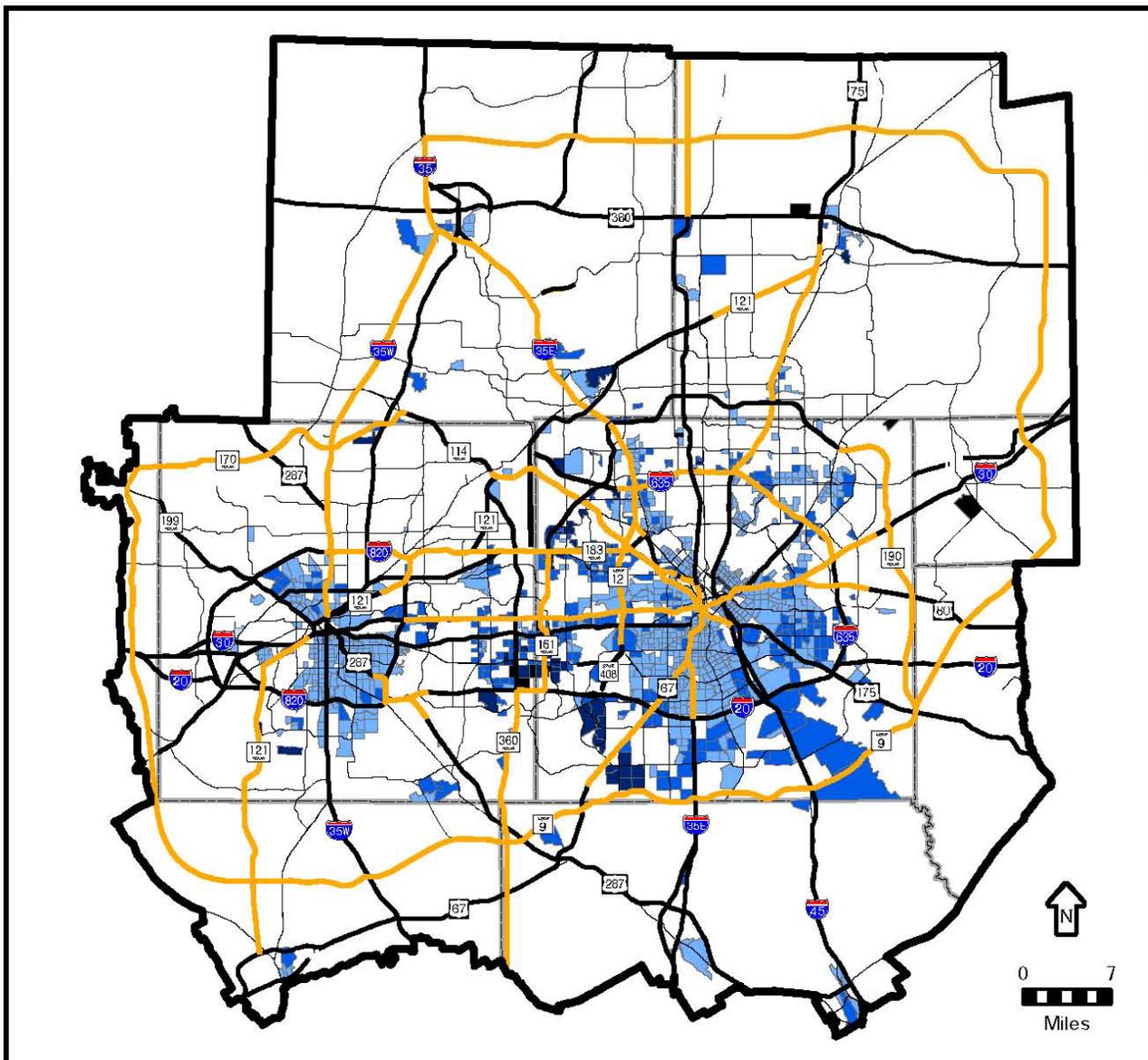
**Figure 10 – Environmental Justice Traffic Survey Zones:
Daily Trips on Existing (2009) Priced Facilities**



Texas Department of Transportation

Date Created: December 2010

Source: NCTCOG, 2010



Legend	
New Priced Facility (Through 2030)	Environmental Justice Transportation Survey Zones (TSZs)
Freeway/Tollway	Less than 1 Trip
Major Arterial	1-50 Trips (24,481 Trips, 32% of Environmental Justice TSZ Trips)
County Limits	51-150 Trips (34,486 Trips, 44% of Environmental Justice TSZ Trips)
MPA Boundary (Mobility 2030 - 2009 Amendment)	151-300 Trips (12,697 Trips, 16% of Environmental Justice TSZ Trips)
	More than 300 Trips (6,151 Trips, 8% of Environmental Justice TSZ Trips)

Regional Priced Facility System Analysis



**Figure 11 – Environmental Justice Traffic Survey Zones:
 Daily Trips on Future (2010-2030) Priced Facilities**

Texas Department of Transportation *Date Created: December 2010*

Source: NCTCOG, 2010

THIS PAGE LEFT BLANK INTENTIONALLY

Appendix 3-1

Texas Antiquities Permit Application

ANTIQUITIES PERMIT APPLICATION FORM ARCHEOLOGY

GENERAL INFORMATION

I. PROPERTY TYPE AND LOCATION

Project Name (and/or Site Trinomial) Dallas North Tollway Extension Phase 4B/5A
 County (ies) Collin, Denton, and Grayson counties, Texas
 USGS Quadrangle Name and Number Marilee, TX (N3322.5-W9645) and Celina, TX (N3315-W9645)
 UTM Coordinates Zone 14 E 0701386 N 3694139
 Location Centerline of a 12-mile tollway alignment northwest of Celina, TX
 Federal Involvement Yes No
 Name of Federal Agency _____
 Agency Representative _____

II. OWNER (OR CONTROLLING AGENCY)

Owner North Texas Tollway Authority
 Representative Elizabeth Mow, P.E. - Director of Project Delivery
 Address 5900 W. Plano Parkway, Ste. 100
 City/State/Zip Plano, TX 75093
 Telephone (include area code) 214-224-2157 Email Address emow@ntta.org

III. PROJECT SPONSOR (IF DIFFERENT FROM OWNER)

Sponsor _____
 Representative _____
 Address _____
 City/State/Zip _____
 Telephone (include area code) _____ Email Address _____

PROJECT INFORMATION

I. PRINCIPAL INVESTIGATOR (ARCHEOLOGIST)

Name Rebecca Shelton
 Affiliation AR Consultants, Inc.
 Address 11020 Audelia Rd Suite C105
 City/State/Zip Dallas, Texas 75243
 Telephone (include area code) 214-368-0478 Email Address arcdigs@aol.com

(OVER)

ANTIQUITIES PERMIT APPLICATION FORM (CONTINUED)

II. PROJECT DESCRIPTION

Proposed Starting Date of Fieldwork January 17, 2011
Requested Permit Duration 2 Years 0 Months (1 year minimum)
Scope of Work (Provided an Outline of Proposed Work) Intensive pedestrian survey of the entire 12-mile long proposed route and mechanical testing in high potential areas along the route, and elsewhere as needed, see attached scope for details.

III. CURATION & REPORT

Temporary Curatorial or Laboratory Facility AR Consultants, Inc.
Permanent Curatorial Facility TARL

IV. LAND OWNER'S CERTIFICATION

I, _____, as legal representative of the Land Owner, do certify that I have reviewed the plans and research design, and that no investigations will be preformed prior to the issuance of a permit by the Texas Historical Commission. Furthermore, I understand that the Owner, Sponsor, and Principal Investigator are responsible for completing the terms of the permit.
Signature _____ Date _____

V. SPONSOR'S CERTIFICATION

I, Allen Clemson, as legal representative of the Sponsor, do certify that I have review the plans and research design, and that no investigations will be performed prior to the issuance of a permit by the Texas Historical Commission. Furthermore, I understand that the Sponsor, Owner, and Principal Investigator are responsible for completing the terms of this permit.
Signature Allen Clemson Date 1-14-11

VI. INVESTIGATOR'S CERTIFICATION

I, Rebecca Shelton, as Principal Investigator employed by AR Consultants, Inc. (Investigative Firm), do certify that I will execute this project according to the submitted plans and research design, and will not conduct any work prior to the issuance of a permit by the Texas Historical Commission. Furthermore, I understand that the Principal Investigator (and the Investigative Firm), as well as the Owner and Sponsor, are responsible for completing the terms of this permit.
Signature Rebecca Shelton Date Jan. 10, 2011.

Principal Investigator must attach a research design, a copy of the USGS quadrangle showing project boundaries, and any additional pertinent information. Curriculum vita must be on file with the Division of Antiquities Protection.

FOR OFFICIAL USE ONLY

Reviewer _____ Date Permit Issues _____
Permit Number _____ Permit Expiration Date _____
Type of Permit _____ Date Received for Data Entry _____

Texas Historical Commission
Archeology Division
P.O. Box 12276, Austin, TX 78711-2276
Phone 512/463-6096
www.thc.state.tx.us



AR Consultants, Inc.

Archaeological and Environmental Consulting

11020 Audelia Road, Suite C105, Dallas, TX 75243

Phone: (214) 368-0478

Fax: (214) 221-1519

E-mail: arcdigs@aol.com

January 10, 2011

Mr. Mark Denton, Archeologist
Texas Historical Commission
P. O. Box 12276
Austin, Texas 78711-2276

Subject: Texas Antiquities Permit - Dallas North Tollway (DNT) Extension Phase 4B/5A

Dear Mark:

The North Texas Tollway Authority (NTTA) is proposing to construct approximately 12 miles of tollway extension in Collin, Denton, and Grayson counties, Texas. The proposed project begins at FM 428 in Collin County and parallels the Denton and Collin county line. The proposed route follows the county line north into Grayson County, where it terminates at FM 121. The project alignment and locations of cross drainage culverts and bridges for this tollway are shown in Attachments 1 and 2. The proposed project would require 400 ft of new right-of-way (ROW) and drainage easements typically extending no more than 100 ft beyond the ROW limit on either side at drainage crossings; however, the drainage easement in the Little Elm Creek floodplain is 200 ft to 500 ft beyond the ROW. The total ROW requirement for this project is approximately 584 acres, plus approximately 34 acres of drainage easements.

Construction of proposed main lanes (three lanes in each direction) and frontage roads (three lanes in each direction) would generally result in excavation of soil to a depth of 5 ft or less, but excavation to a maximum depth of 10 ft may be required at some locations. However, excavation of soil for main lanes to a depth of up to 35 ft would occur at five locations (shown on Attachments 1 and 2) where the tollway would pass under the following cross streets: CR 54, FM 455, CR 60, a future street 0.5 mile south of Stiff Chapel Road, and at Stiff Chapel Road; frontage roads at these locations would remain at grade. The proposed facility would require 11 bridges, eight of which would support main lane crossings of cross streets. The other three bridges would support main lane and frontage road crossings of stream channels, two of which are located at the intersection of CR 8 and CR 9 and 2,000 ft north of this intersection, with the largest bridge crossing located over Little Elm Creek. At this stage of project design, there has been no geotechnical survey of soil conditions at these bridge crossings so it is not possible to estimate the depth of excavation necessary for drilled bridge shafts. Grading of the Little Elm Creek floodplain to an estimated maximum depth of 5 ft would be necessary to preserve the hydraulic functioning of the floodplain; grading to a depth of 4 ft to 8 ft would be necessary for the other two bridge crossings of streams. The tollway

design will also include a storm sewer system to accommodate storm runoff from the facility. At this stage of project development there has been no comprehensive survey of utilities that may be affected by the proposed project. As the tollway would be located in a rural area, few utilities are expected to occur within the ROW. The only known utilities that would need to be relocated are above-ground electrical distribution lines along some of the existing roads within the ROW. A buried natural gas pipeline crosses the proposed tollway near its southern end (location shown in Attachment 1), which may need to be relocated, depending on its depth and final design of the tollway.

A desktop evaluation and literature review of the project with recommendations regarding survey of the high potential areas was conducted by AR Consultants, Inc. (ARC) and reviewed by the Texas Historical Commission (THC) in October 2010. The evaluation recommended survey of approximately 5.5 miles of the route, which contained high potential areas for cultural resources (boxed areas shown in Attachments 1 and 2). These sections include investigating both sides of the proposed tollway where the ROW traverses or parallels historic roads and the portion where the route crosses Little Elm Creek. In a letter dated October 28, 2010, your office recommended that the entire proposed ROW receive a pedestrian archaeological survey. ARC was contracted to conduct the archaeological survey by Halff Associates, Inc. (Halff). Halff is conducting the environmental permitting on behalf of NTTA.

The following scope of work outlines the tasks ARC will complete in order to conduct the intensive pedestrian archaeological survey for the proposed project.

1. Acquire a Texas Antiquities Permit.
2. Conduct further archival research and compile records about archaeological surveys conducted and sites recorded in the area and combine these with the results of the previous desktop evaluation.
3. Conduct a Phase I intensive pedestrian survey of the entire proposed ROW. Survey standards will be followed to meet the minimum requirements as accepted by the THC (n.d.). Backhoe trenching will be conducted in the floodplain of Little Elm Creek within the proposed ROW to determine if buried cultural deposits are present and at other places as needed. A profile of each trench will be prepared and a sample of soil from each of the strata will be screened through 0.25-in. mesh shaker screens. Dig Test services will be requested to check for existing utilities in the area before trenching is begun. A descriptive profile will be prepared of each trench. The trenches will be stepped according to Occupational Safety and Health Administration (OSHA) standards. Soil profiles will be made, photographed, and the trenches backfilled. Notes will be taken about the surface visibility, land disturbances, drainage channels, and vegetation.

Right of entry to perform archaeological surveys has already been obtained from 16 of the 17 property owners within the proposed ROW. Right of entry letters were prepared by NTTA, and Halff and NTTA have been contacting property owners to arrange for access to properties. It is expected that discussions with the remaining property owner will result in permission to access the property. In the event that access is denied, archaeological evaluation of the property will be made

- by observing the 200-foot wide area of the subject property from the edge of an adjacent public road that runs parallel to it and from detailed aerial photography.
4. Define site boundaries (i.e., the limits of any archaeological sites or structures that are recognized during the survey) within the ROW on the horizontal plane, and define deposit depth using shovel tests and backhoe trenches as necessary. The Texas Archeological Site Form will be completed for sites recorded. Maps of the sites recorded and the overall project area will be made.
 5. Any standing structures 45 years old or older within the Area-of-Potential Effect (APE) will be evaluated by Halff who will prepare a historic resources report.
 6. Only diagnostic artifacts will be collected from the surface and from subsurface excavation. Non-diagnostic artifacts will be photographed, described, and sketched in the field and notes made on where they were found on the surface or in the shovel test. Collected artifacts will be washed, labeled, analyzed, and prepared for permanent curation at the Texas Archeological Research Laboratory (TARL) in Austin. Records will be prepared for curation at TARL.
 7. Prepare a draft report, following the guidelines recommended by the Council of Texas Archeologists (n.d.) and accepted by the THC. The report will conclude with recommendations for further work or no further work in the project area with appropriate justifications based on requirements of 13 TAC 26.5 and 13 TAC 26.20. The draft will be submitted to Halff and NTTA. Once approved, the draft report will be submitted to the Archeology Division of the THC for review.
 8. Once the draft report is approved by the THC, a final report will be prepared after review by the agencies above. Five final copies will be submitted to Halff and NTTA. One unbound copy of the report will be submitted to the THC along with a copy of the report on an archival quality CD.

STAFFING

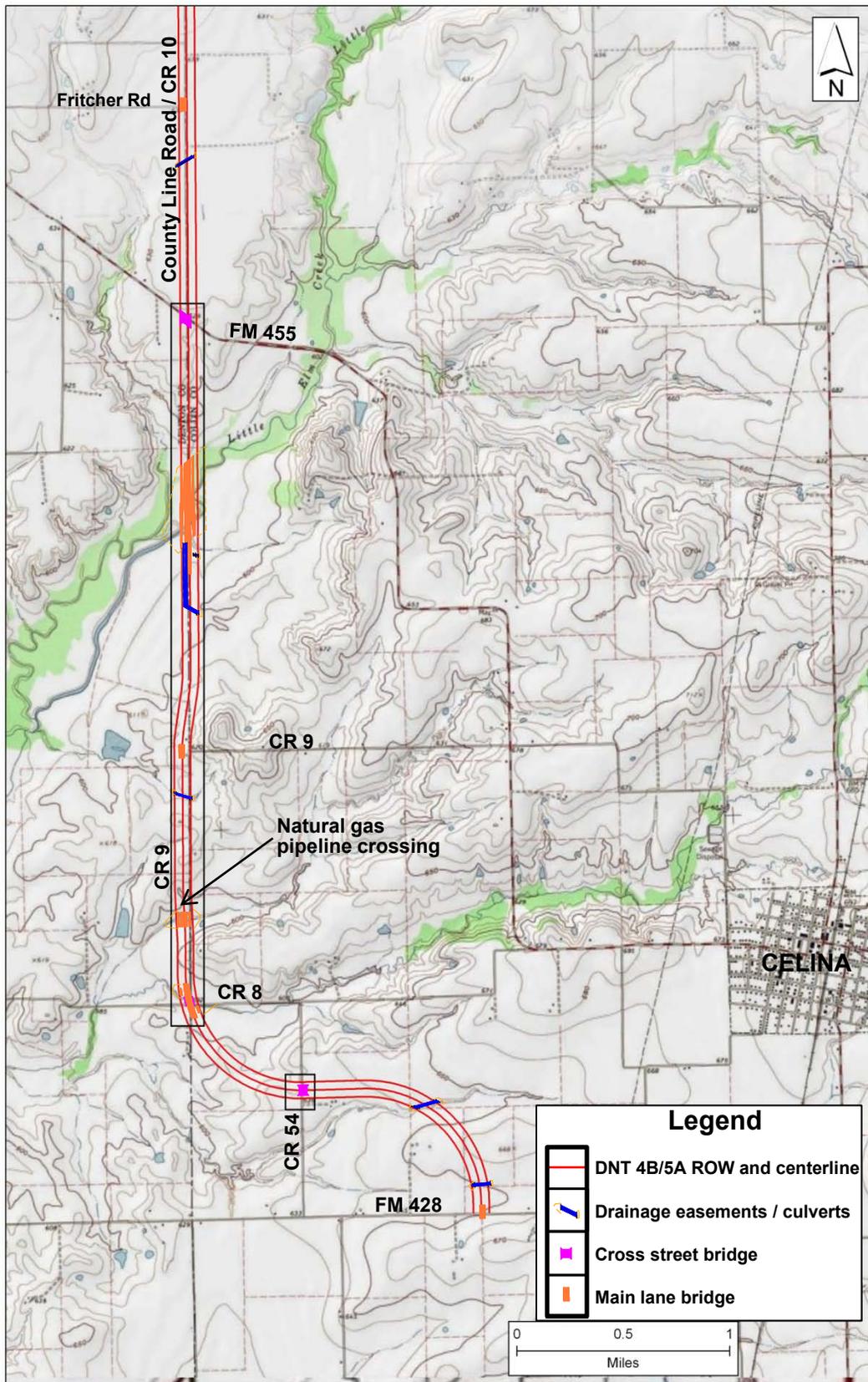
Rebecca Shelton will serve as Principal Investigator for the proposed project and will be assisted by personnel from ARC. Ms. Shelton's resume is on file with the THC.

If you have any questions, please contact me at 214-368-0478.

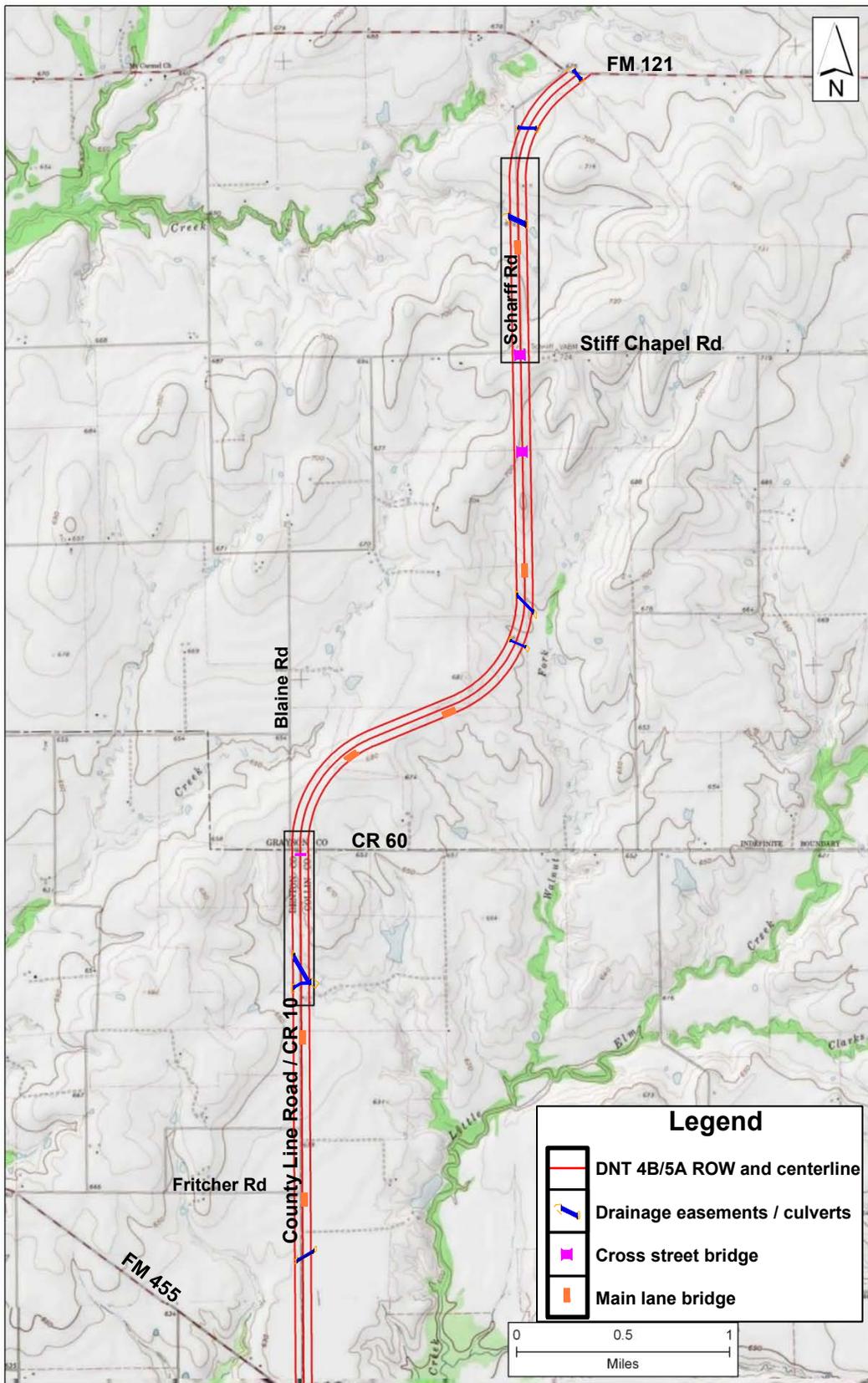
Sincerely,



Rebecca Shelton, MA
Project Archaeologist
AR Consultants, Inc.
Encl: Antiquities Permit Application



Attachment 1. Southern section of proposed route with high potential areas outlined on a section of the Celina, TX 7.5' USGS map.



Attachment 2. Northern section of proposed route with high potential areas outlined on a section of the Marilee, TX 7.5' USGS map.

THIS PAGE LEFT BLANK INTENTIONALLY

Appendix 5-1
Agency Correspondence

Table of Contents

Date	Document Description	Page #
30 July 2010	NTTA email request to NCTCOG for MSAT/EJ modeling data	1
30 Sep. 2010	NTTA transmittal cover letter of archeology archival report to the Texas Historical Society	2
12 Oct. 2010	NTTA (Halff) email request for data on rare species from the Texas Natural Diversity Database (TXNDD)	3
13 Oct. 2010	TXNDD email response transmitting rare species data, and copy of the rare species occurrence list and element occurrence records provided with the response	4-13
28 Oct. 2010	THC letter response regarding archeology archival report	14
19 Nov. 2010	NCTCOG email response transmitting MSAT/EJ data	15
1 Jan. 2011	NTTA transmittal letter to the THC for Texas Antiquities Permit (TAP) application	16
25 Jan. 2011	THC letter response approving/enclosing TAP	17-19
3 March 2011	NTTA transmittal email sending the historic-age resources due diligence report to the THC	20-21
4 March 2011	NTTA coordination letter (including map enclosures) to the TPWD	22-25

From: Shelton, Lori
Sent: Friday, July 30, 2010 12:20 PM
To: 'Chad McKeown'
Cc: 'Randolph Acosta'; Hutchison, Mike; Hancock, Craig
Subject: DNT Phase 4B/5A NCTCOG Modeling Data Request

Chad,

The following is the modeling data request we briefly discussed yesterday. Please prepare a proposal and fee estimate for Task Order 3, Contract 02726-NTT-00-IL-PM for the scope of work described below. Also, please prepare the same for Task Order 2 to address the overpayment that was made on Task Order 1. I believe Randy Acosta forwarded the information to you regarding this situation. If you need any further information on either task order, please contact me.

NCTCOG Modeling Data Request

Project Name: Dallas North Tollway Extension Phase 4B/5A
Project Limits: FM 428 (Collin County) to FM 121 (Grayson County) (see attached map)
[Phase 4B is within Collin and Denton counties; Phase 5A is within Grayson County]
Project Length: 11.9 miles
Proposed Project: new location tollway with six mainlanes (plus auxiliary lanes) and six frontage road lanes (plus auxiliary lanes near ramp locations and cross streets)
Year Open to Traffic: 2025, as reflected in MTP 2030 Corridor Fact Sheet and Mobility 2030 – 2009 Amendment (see attached pages)

The following data is required to complete analyses for an environmental evaluation of the proposed project:

1. Mobile Source Air Toxics (MSATs) emissions data for --
 - a. 2009 Base Year: No-Build scenario
 - b. 2025 Interim Year (ETC): Build Toll and No-Build scenarios
 - c. 2030 Design Year: Build Toll and No-Build scenarios
2. Performance Reports for –
 - a. 2009 Base Year No-Build scenario
 - b. 2025 Interim Year (ETC): Build Toll and No-Build scenarios
 - c. 2030 Design Year: Build Toll and No-Build scenarios
3. EJ Origin-Destination data for the 2030 Design Year Build and No-Build scenarios

Note: While the DNT Phase 5A portion of this facility is outside the NCTCOG area, we nevertheless request modeling data for the Grayson County portion of this project provided that source data is available and existing NCTCOG models are able to include this area with the modeling for the Phase 4B portion. Additionally, we respectfully request that the data be provided by October 1, 2010.

It is our understanding that data based on the 2010 Census that would be used for the Mobility 2035 plan will not be available for some time, but if there is draft data that is 2010 Census-based available by this date, we would prefer to use the most recent data possible.

Lori Shelton, AICP
Project Manager of Project Delivery
North Texas Tollway Authority
5900 W. Plano Parkway, Ste. 100
Plano, TX 75093
214.224.2467
Fax 972.930.3467



September 30, 2010

Mr. Bill Martin
Texas Historical Society
1511 Colorado
Austin, TX 78701

Dear Mr. Martin:

AR Consultants, Inc. (ARC) has performed an evaluation of the archaeological potential along the proposed Dallas North Tollway Extension Phase 4B/5A alignment. The proposed extension is plotted as an approximately 12 mile long alignment beginning at FM 428 in Collin County and proceeding north along the Denton and Collin County line, extending into Grayson County. Horizontal area-of-potential-effect (APE) will not exceed 300 feet from either side of the centerline, for a total APE of 600 feet. In assessing archaeological potential, this evaluation considered previously recorded sites, previous archaeological investigations, local topography, geology, and soils, as well as several historic maps. Additionally, a windshield survey of all accessible portions of the proposed route provided information on standing structures, topography, and land use.

The evaluation concludes the highest potential for prehistoric resources occurs at the crossing of Little Elm Creek, where pedestrian survey and subsurface testing in the form of trenching is recommended. Pedestrian survey of the uplands is also recommended as our review shows high potential for encountering the remains of historic structures along roads, as well as two standing historic structures near the northern terminus of the route. We seek concurrence from the Texas Historical Commission on these findings and recommendations.

Sincerely,

Elizabeth Mow
Director of Project Delivery

EM/rc

cc: Julie Morse, Environmental Planning Manager
Tom Diamond, Corridor Manager Dallas North Tollway 4 and 5

Enclosures: AR Consultants, Inc. Archaeological Evaluation of the Dallas North Tollway Extension Phase 4B/5A (2 copies)

From: Jaynes, Rich [mailto:rJaynes@Halff.com]
Sent: Tuesday, October 12, 2010 6:54 AM
To: Texas Natural Diversity Database
Subject: NDD Request in Collin and Grayson Counties

Good morning--

I am sending this email to request a NDD search. Please let me know if you need clarification on the following information:

1. ArcGIS shapefiles, EOR report, EOR list, Management Area report, and Management Area list, and anything else you may have pertaining to wildlife/habitat in the area.
2. USGS quadrangles: There are 12 quadrangles relating to our study area that lies within the Celina and Marilee Quads in Collin and Grayson Counties, Texas, which are listed alphabetically below; that is, the 10 quads surrounding these two USGS map quadrangles have been included to ensure adequate data capture for the area of interest (which includes a larger cumulative impacts resource study area).
3. Scope of project: The proposed project involves the design and construction of approximately 12 miles of six-lane controlled access tollway on new location. Information regarding threatened or endangered species is essential to the preparation of an environmental study of potential impacts to habitat and wildlife.

Thank you for your help with this!

1. Aubrey
2. Celina
3. Collinsville
4. Dorchester
5. Ethel
6. Frisco
7. Gunter
8. Little Elm
9. Marilee
10. McKinney West
11. Pilot Point
12. Weston

Rich Jaynes
Sr. Environmental Scientist



HALFF ASSOCIATES, INC.
1201 North Bowser Road
Richardson, Texas 75081
Phone 214-346-6397
Fax 214-739-0095
www.halff.com

From: Texas Natural Diversity Database [mailto:txnidd@tpwd.state.tx.us]
Sent: Wednesday, October 13, 2010 4:05 PM
To: Jaynes, Rich
Subject: RE: NDD Request in Collin and Grayson Counties

Hi Rich,

The Texas Natural Diversity Database (TXNDD) includes federal, and state listed and tracked Threatened, Endangered, and Rare species. The attached .zip file contains documents that will guide you in appropriate use, restrictions, and shapefile interpretation of Texas NDD data as well as a request for adding data to the TXNDD. Also included is a shapefile of the T&E and Rare species element occurrences, information the TXNDD has available presently, within and touching the requested quads along with a companion EO **report**; areas where EO data are absent **do not mean** absence of occurrence for Threatened, Endangered, and Rare species. An EO **list** is included, buffered to approximately 10 miles from the requested quad boundaries to notify you of other potential federal, and state listed and tracked Threatened, Endangered, and Rare species within the area. To round out your review, please use the pertinent TPWD Annotated County lists of Rare Species; webpage address found below. For questions on these county lists please contact Celeste Brancel at celeste.brancel@tpwd.state.tx.us or (512)389-8021.

Your information request includes one or more records for **Bald Eagle**. For more up-to-date information on the **Bald Eagle** you will need to contact Brent Ortego at brent.ortego@tpwd.state.tx.us or (361) 576-0022.

Absence of information in an area does not mean absence of occurrence. *Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Data from the TXNDD do not provide a definitive statement as to the presence, absence, or condition of special species, natural communities, or other significant features within your project area. These data cannot substitute for an on-site evaluation by qualified biologists.*

TPWD Annotated County Lists:

http://www.tpwd.state.tx.us/landwater/land/maps/gis/ris/endangered_species/

USFWS species lists: http://ecos.fws.gov/tess_public/servlet/gov.doi.tess_public.servlets.EntryPage

USFWS CRITICAL HABITAT: <http://criticalhabitat.fws.gov/>

There is a one week turn-around due to the number of requests that we receive. Thank you for your patience.

Best,

Cullen Hanks
Texas Natural Diversity Database
512-389-8253

Occurrence List for Surrounding Quads

<u>Scientific Name:</u>	<u>Common Name:</u>	<u>Occurrence Number:</u>	<u>State Status:</u>	<u>Federal Status:</u>	<u>Eo Id:</u>
<i>Haliaeetus leucocephalus</i>	Bald Eagle	42	T		4276
<i>Haliaeetus leucocephalus</i>	Bald Eagle	53	T		615
<i>Schizachyrium scoparium-sorghastrum nutans series</i>	Little Bluestem-indiangrass Series	8			988
<i>Schizachyrium scoparium-sorghastrum nutans series</i>	Little Bluestem-indiangrass Series	32			6038
<i>Schizachyrium scoparium-sorghastrum nutans series</i>	Little Bluestem-indiangrass Series	49			2718
<i>Schizachyrium scoparium-sorghastrum nutans series</i>	Little Bluestem-indiangrass Series	50			2719
<i>Schizachyrium scoparium-sorghastrum nutans series</i>	Little Bluestem-indiangrass Series	60			3102
<i>Schizachyrium scoparium-sorghastrum nutans series</i>	Little Bluestem-indiangrass Series	78			3741
<i>Schizachyrium scoparium-sorghastrum nutans series</i>	Little Bluestem-indiangrass Series	105			2293
<i>Sterna antillarum athalassos</i>	Interior Least Tern	9	E	LE	5888
<i>Thamnophis sirtalis annectens</i>	Texas Garter Snake	20			434
<i>Ulmus americana-celtis spp. series</i>	American Elm-hackberry Series	1			5028
<i>Ulmus americana-quercus muhlenbergia-celtis spp. series</i>	American Elm-chinkapin Oak-hackberry Series	1			3578

Element Occurrence Record

Scientific Name: Haliaeetus leucocephalus

Occurrence #: 53

Eo Id: 615

Common Name: Bald Eagle

Track Status: Track all extant and selected historical EOs

TX Protection Status: T

Global Rank: G4

State Rank: S3B,S3N

Federal Status:

Location Information:

Watershed:

12030103 - Elm Fork Trinity

County Name:

State:

Mapsheet:

Cooke

TX

33096-D8, Pilot Point

Denton

TX

33097-D1, Mountain Springs

Grayson

TX

33096-E8, Collinsville

33097-E1, Woodbine

Directions:

TERRITORY ON LAKE RAY ROBERTS BETWEEN MOUNTAIN SPRINGS AND TIEGA; INCLUDES ISLE DU BOIS CREEK, INDIAN CREEK, WOLF CREEK, AND WALNUT CREEK BRANCHES

Survey Information:

First Observation: 1992

Survey Date: 1999

Last Observation: 1992

Eo Type:

Eo Rank:

Eo Rank Date:

Observed Area:

Comments:

General

Description:

Comments: TPWD NEST # 049-1A

Protection

Comments:

Management

Comments:

Data:

EO Data: NEST # 049-1A: 1992 - NEST PRODUCED 2 YOUNG; 1993-1994 - NEST WAS INACTIVE; 1995 - NO DATA; 1996 - NEST WAS INACTIVE; 1997 - NO DATA; 1998-1999 - NEST WAS INACTIVE.

Managed Area:

Managed Area Name

Ray Roberts Lake State Park

LAKE RAY ROBERTS WILDLIFE MANAGEMENT AREA

Element Occurrence Record

Reference:

Citation:

MITCHELL, MARK. 1999. PROJECT NO. 30: BALD EAGLE NEST SURVEY AND MANAGEMENT. PERFORMANCE REPORT. AUGUST 31, 1999.

MITCHELL, MARK. 1997. MEMO TO SHANNON BRESLIN OF 30 JULY 1997 PROVIDING BALD EAGLE NESTING DATA, INCLUDING COUNTY MAPS WITH ESTIMATED TERRITORIES.

Specimen:

Element Occurrence Record

Scientific Name: Schizachyrium scoparium-sorghastrum nutans series

Occurrence #: 8 **Eo Id:** 988

Common Name: Little Bluestem-indiangrass Series

Track Status: Track all extant and selected historical EOs

TX Protection Status:

Global Rank: G2

State Rank: S2

Federal Status:

Location Information:

Watershed:

12030106 - East Fork Trinity

County Name:

Collin

State:

TX

Mapsheet:

33096-C6, Weston

Directions:

2.8 MILES EAST OF JUNCTION 289 WITH 455, THEN SOUTH 1 MILE, THEN EAST 0.2 MILES; PRAIRIE IS ON THE SOUTH SIDE OF ROAD.

Survey Information:

First Observation: 1984

Survey Date: 1984-06-28

Last Observation: 1984-06-28

Eo Type:

Eo Rank: A

Eo Rank Date:

Observed Area: 9.00

Comments:

General Description: LITTLE BLUESTEM, INDIANGRASS, BIG BLUESTEM, TALL DROPSEED; GAMMAGRASS AT BASE OF SLOPE

Comments: EXCELLENT CONDITION

Protection Comments: ENCOURAGE GOOD MANAGEMENT BY COLLIN COUNTY AFTER PURCHASE

Management

Comments:

Data:

EO Data:

Managed Area:

Managed Area Name

Reference:

Citation:

DIAMOND, D. D. 1984. FIELD SURVEY TO COLLIN COUNTY OF JUNE 27-28, 1984.

Element Occurrence Record

Specimen:

Element Occurrence Record

Scientific Name: Schizachyrium scoparium-sorghastrum nutans series

Occurrence #: 50 **Eo Id:** 2719

Common Name: Little Bluestem-indiangrass Series

Track Status: Track all extant and selected historical EOs

TX Protection Status:

Global Rank: G2

State Rank: S2

Federal Status:

Location Information:

Watershed:

12030106 - East Fork Trinity

County Name:

Collin

State:

TX

Mapsheet:

33096-C6, Weston

Directions:

0.8 MILES NORTH, NORTHWEST OF CORINTH CEMETERY, ON WEST SIDE OF COUNTY ROAD

Survey Information:

First Observation: 1986

Survey Date: 1986-11-03

Last Observation: 1986-11

Eo Type:

Eo Rank: B?

Eo Rank Date:

Observed Area: 30.00

Comments:

General Description: GRAZED, SHALLOW SOIL PRAIRIE; SILVER BLUE COMMON IN 11-86; SITE NOT CLOSELY EXAMINED

Comments: COLLIN COUNTY MAY BUY THIS SITE AS PART OF THEIR OPEN SPACE PLAN

Protection

Comments:

Management

Comments:

Data:

EO Data:

Managed Area:

Managed Area Name

Reference:

Citation:

DIAMOND, D. D. 1986. FIELD TRIP TO COLLIN COUNTY OF NOVEMBER 3-4, 1986.

Element Occurrence Record

Specimen:

Element Occurrence Record

Scientific Name: Thamnophis sirtalis annectens

Occurrence #: 20

Eo Id: 434

Common Name: Texas Garter Snake

Track Status: Track all extant and selected historical EOs

TX Protection Status:

Global Rank: G5T3

State Rank: S3

Federal Status:

Location Information:

Watershed:

12030103 - Elm Fork Trinity

County Name:

Denton

State:

TX

Mapsheet:

33097-A1, Lewisville West

33097-B1, Denton East

33096-B8, Little Elm

33096-A8, Lewisville East

Directions:

LAKE DALLAS

Survey Information:

First Observation:

Survey Date:

Last Observation:

Eo Type:

Eo Rank:

Eo Rank Date:

Observed Area:

Comments:

General

Description:

Comments:

Protection

Comments:

Management

Comments:

Data:

EO Data:

Managed Area:

Managed Area Name

Element Occurrence Record

Reference:

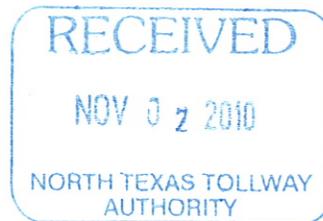
Citation:

Specimen:

Baylor University, Bryce C. Brown Collection at Strecker Museum. No Date. H. Kirby, Catalog # 4644 BCB, SM.

TEXAS HISTORICAL COMMISSION

real places telling real stories



October 28, 2010

Elizabeth Mow
North Texas Tollway Authority
5900 West Plano Parkway, Suite 100
Plano, TX 75093

Re: Project review under the Antiquities Code of Texas, Proposed Dallas North Tollway Extension 4B/5A Alignment, Cultural Resources Survey Needed (NTTA)

Dear Ms. Mow:

Thank you for your correspondence concerning the above referenced project. This letter presents the comments of the Executive Director of the Texas Historical Commission (THC), the state agency responsible for administering the Antiquities Code of Texas. We have recently reviewed your letter and the attached AR Consultants' desktop review concerning the above referenced proposed roadway development project, and while we generally concur with their recommendations we also believe the entire right-of way should receive a pedestrian archeological survey. Additionally, we need to know whether this roadway project will involve federal or TxDOT funding or permits.

If this project does include TxDOT involvement, or a federal undertaking a historic structures survey will also be required and NTTA should contact the History Programs Division of the THC to resolve the Area of Potential Effect for this project, and the pedestrian survey must conform to the "Archeological Survey Standards for Texas." Your archeological principal investigator must also contact us to obtain an Antiquities Permit for these investigations, and a report on the investigations will have to be produced in conformance with the report standards under the Chapter 26 Rules of the Antiquities Code of Texas.

Thank you for your cooperation in this state review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions, please contact Mark H. Denton, of our staff at (512) 463-5711.**

Sincerely,

A handwritten signature in black ink, appearing to read "Mark H. Denton".

for
Mark Wolfe
Executive Director

MW/mhd



From: Berrien Barks [<mailto:BBarks@nctcog.org>]

Sent: Friday, November 19, 2010 4:46 PM

To: Hutchison, Mike; Teresa Barlow

Cc: Chad McKeown

Subject: Dallas North Tollway Phase 4B - MSAT Data

As requested by NTTA, NCTCOG has developed Mobile Source Air Toxics (MSAT) and Environmental Justice (EJ) data in support of the environmental document being completed for the Dallas North Tollway Phase 4B Extension from FM 428 to the Grayson County Line.

MSAT data is now available for your review at the following address:

ftp://ftp.nctcog.org/Outgoing/MSAT_and_EJ/DNT_4B/MSAT/

The MSAT data provided includes:

- Year 2025 Build modeled roadway network with planned facility configuration and year 2025 demographics
- Year 2025 No-Build modeled roadway network with existing facility configuration and year 2025 demographics
- Year 2025 Build Emissions Data (Used 2025 emission factors)
- Year 2030 Build modeled roadway network with planned facility configuration and year 2030 demographics
- Year 2030 No-Build modeled roadway network with existing facility configuration and year 2030 demographics
- Year 2030 Build Emissions Data
- Roadway network No-Build and Build traffic volume comparison map for year 2030 (the +/- 5% Map)
- Roadway network No-Build and Build traffic volume comparison shapefile for year 2030 (the "Y" Links shapefile)

MSAT emissions data for the 2025 no-build and 2030 no-build scenarios is still being developed and we will notify you as soon as it is available.

The Environmental Justice origin-destination Excel table for the DNT 4B corridor is also available for download at the following address:

ftp://ftp.nctcog.org/Outgoing/MSAT_and_EJ/DNT_4B/Environmental_Justice/

The filename is: TSZ_EJ_DNT_4B.xls

This table displays the demographic information for each of the traffic survey zones (TSZ) in the Metropolitan Planning Area as well as the number of vehicles from each TSZ which are using this facility in the year 2030. The columns in the table which show number of vehicles per scenario are the following:

- Build_Mainlanes_Cars (number of cars using the mainlanes in the build scenario)
- Build_Mainlanes_Trucks (number of trucks using the mainlanes in the build scenario)

Please remember that due to the unique situations associated with this roadway and travel model limitations as noted in our discussions on this project, the EJ table shows zero volume for all TSZs using this section of the DNT. Further evaluation including a qualitative analysis may be required to fully document potential EJ impacts due to the construction of this roadway corridor.

The MSAT and EJ analyses being provided for this study are based on Mobility 2030 – 2009 Amendment, and its associated Conformity networks, which were approved by the Regional Transportation Council in April 2009 and the Federal Highway Administration in August 2009.

If you have any questions about this data, please contact me.

Berrien Barks

Senior Transportation Planner

North Central Texas Council of Governments

Phone: (817) 695-9282

Fax: (817) 640-3028

Email: bbarks@nctcog.org

North Texas Tollway Authority
5900 W. Plano Parkway, Suite 100
Plano, TX 75093

Phone (214) 224-2168
Fax (214) 224-2158
www.ntta.org

Letter of
Transmittal

Project Dallas North Tollway Extension - Phase 4B/5A
VIA FedEx
Date January 14, 2011

To Mr. Mark Denton **Regarding** Texas Antiquities Permit Application
Coordinator, State and Federal Review Section
Archeology Division
Texas Historical Commission
1511 Colorado
Austin, Texas 78701

We are forwarding to you

<input type="checkbox"/> Estimates	<input type="checkbox"/> Plans	<input type="checkbox"/> Prints
<input type="checkbox"/> Report	<input type="checkbox"/> Shop Drawings	<input type="checkbox"/> Samples
<input type="checkbox"/> Change Order	<input type="checkbox"/> Disk	<input type="checkbox"/> Copy of Letter
<input type="checkbox"/> Manual	<input checked="" type="checkbox"/> Other	

# of Copies	Drawing #	Last Dated	Code	Description
1		January 2011		Texas Antiquities Permit Application for Archaeological Pedestrian Survey

These are transmitted

<input checked="" type="checkbox"/> For approval	<input type="checkbox"/> As requested	<input type="checkbox"/> Copies for distribution
<input type="checkbox"/> For your use	<input type="checkbox"/> Resubmit	<input type="checkbox"/> For review & comment
<input type="checkbox"/> Return	<input type="checkbox"/> Copies for review	<input type="checkbox"/> No exception taken
<input type="checkbox"/> Corrected prints	<input type="checkbox"/> Submit	<input type="checkbox"/> Amend and resubmit

Please note

By Elizabeth Mow, P.E.
Copy to Julie Morse - HNTB Corporation
Rich Jaynes - Half Associates, Inc.

TEXAS HISTORICAL COMMISSION

real places telling real stories

RECEIVED
1/29/2011

January 25, 2011

Ms. Rebecca Shelton
AR Consultants
11020 Audelia Rd, Ste. C, 105
Dallas, TX 75243

Re: Project review under the Antiquities Code of Texas
Dallas North Tollway Extension Phase 4B/5A, Collin, Denton & Grayson Counties
Texas Antiquities Permit #5866

Dear Colleague:

Thank you for your Antiquities Permit Application for the above referenced project. This letter presents the final copy of the permit application from the Executive Director of the Texas Historical Commission, the state agency responsible for administering the Antiquities Code of Texas.

Please keep this copy for your records. Additionally, please note that due to a new rule change the THC no longer requires 20 copies of the final report be mailed to the THC, instead the Antiquities Permit investigations now require production of one printed copy of the final report, a completed abstract form, two copies of the final report on a tagged PDF CD (one with site location information & one without), and verification that any artifacts recovered and records produced during the investigations are curated at the repository listed in the permit.

If you have any questions concerning this permit or if we can be of further assistance, please contact Lillie Thompson at 512/463-1858. The reviewer for this project is Mark Denton, 512/463-6096.

Sincerely,



for
Mark Wolfe
Executive Director

MW/lft

Enclosure

Cc: Elizabeth Mow, North Texas Tollway Authority



State of Texas
TEXAS ANTIQUITIES COMMITTEE

ARCHEOLOGY PERMIT # 5866

This permit is issued by the Texas Historical Commission, hereafter referred to as the Commission, represented herein by and through its duly authorized and empowered representatives. The Commission, under authority of the Texas Natural Resources Code, Title 9, Chapter 191, and subject to the conditions hereinafter set forth, grants this permit for:

Intensive Survey

To be performed on a potential or designated landmark or other public land known as:

Title: *Dallas North Tollway Extension Phase 4B/5A*

County: *Collin, Denton, & Grayson*

Location: *Centerline of a 12-mile tollway alignment northwest of Celina, Texas.*

Owned or Controlled by: (hereafter known as the Permittee):

North Texas Tollway Authority
5900 West Plano Parkway, Ste. 100
Plano, TX 75093

Sponsored by (hereafter known as the Sponsor)

North Texas Tollway Authority
5900 West Plano Parkway, Ste. 100
Plano, TX 75093

The Principal Investigator/Investigation Firm representing the Owner or Sponsor is:

Rebecca Shelton
AR Consultants, Inc.
11020 Audelia Road, Suite C105
Dallas, TX 75243

This permit is to be in effect for a period of:

2 Years and 0 Months

and Will Expire on:

01/21/2013

During the preservation, analysis, and preparation of a final report or until further notice by the Commission, artifacts, field notes, and other data gathered during the investigation will be kept temporarily at:

AR Consultants, Inc.

Upon completion of the final permit report, the same artifacts, field notes, and other data will be placed in a permanent curatorial repository at:

Texas Archeological Research Lab.

Scope of Work under this permit shall consist of:

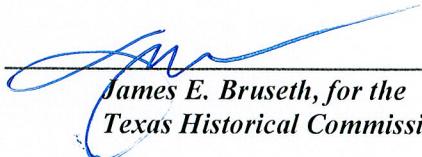
Intensive pedestrian survey of the entire 12-mile long proposed route and mechanical testing in high potential areas along the route, and elsewhere as needed. For details, see scope of work submitted with permit application.

ARCHEOLOGY PERMIT # 5866

This permit is granted on the following terms and conditions:

- 1) *This project must be carried out in such a manner that the maximum amount of historic, scientific, archeological, and educational information will be recovered and preserved and must include the scientific, techniques for recovery, recording, preservation and analysis commonly used in archeological investigations. All survey level investigations must follow the state survey standards and the THC survey requirements established with the projects sponsor(s).*
- 2) *The Principal Investigator/Investigation Firm, serving for the Owner/Permittee and/or the Project Sponsor, is responsible for insuring that specimens, samples, artifacts, materials and records that are collected as a result of this permit are appropriately cleaned, and cataloged for curation. These tasks will be accomplished at no charge to the Commission, and all specimens, artifacts, materials, samples, and original field notes, maps, drawings, and photographs resulting from the investigations remain the property of the State of Texas, or its political subdivision, and must be curated at a certified repository. Verification of curation by the repository is also required, and duplicate copies of any requested records shall be furnished to the Commission before any permit will be considered complete.*
- 3) *The Principal Investigator/Investigation Firm serving for the Owner/Permittee, and/or the Project Sponsor is responsible for the publication of results of the investigations in a thorough technical report containing relevant descriptions, maps, documents, drawings, and photographs. A draft copy of the report must be submitted to the Commission for review and approval. Any changes to the draft report requested by the Commission must be made or addressed in the report, or under separate written response to the Commission. Once a draft has been approved by the Commission, one (1) printed, unbound copy of the final report containing at least one map with the plotted location of any and all sites recorded and two copies of the report in tagged PDF format on an archival quality CD or DVD shall be furnished to the commission. One copy must include the plotted location of any and all sites recorded and the other should not include the site location data. A paper copy and an electronic copy of the completed Abstracts in Texas Contract Archeology Summary Form must also be submitted with the final report to the Commission. (Printed copies of forms are available from the Commission or also online at www.thc.state.tx.us.)*
- 4) *If the Owner/Permittee, Project Sponsor or Principal Investigator/Investigation Firm fails to comply with any of the Commission's Rules of Practice and Procedure or with any of the specific terms of this permit, or fails to properly conduct or complete this project within the allotted time, the permit will fall into default status. A notification of Default status shall be sent to the Principal Investigator/Investigation Firm, and the Principal Investigator will not be eligible to be issued any new permits until such time that the conditions of this permit are complete or, if applicable, extended.*
- 5) *The Owner/Permittee, Project Sponsor, and Principal Investigator/Investigation Firm, in the conduct of the activities hereby authorizes, must comply with all laws, ordinances and regulations of the State of Texas and of its political subdivisions including, but not limited to, the Antiquities Code of Texas; they must conduct the investigation in such a manner as to afford protection to the rights of any and all lessees or easement holders or other persons having an interest in the property and they must return the property to its original condition insofar as possible, to leave it in a state which will not create hazard to life nor contribute to the deterioration of the site or adjacent lands by natural forces.*
- 6) *Any duly authorized and empowered representative of the Commission may, at any time, visit the site to inspect the fieldwork as well as the field records, materials, and specimens being recovered.*
- 7) *For reasons of site security associated with historical resources, the Project Sponsor (if not the Owner/Permittee), Principal Investigator, Owner, and Investigation Firm shall not issue any press releases, or divulge to the news media, either directly or indirectly, information regarding the specific location of, or other information that might endanger those resources, or their associated artifacts without first consulting with the Commission, and the State agency or political subdivision of the State that owns or controls the land where the resource has been discovered.*
- 8) *This permit may not be assigned by the Principal Investigator/Investigation Firm, Owner/Permittee, or Project Sponsor in whole, or in part to any other individual, organization, or corporation not specifically mentioned in this permit without the written consent of the Commission.*
- 9) *Hold Harmless: The Owner/Permittee hereby expressly releases the State and agrees that Owner/Permittee will hold harmless, indemnify, and defend (including reasonable attorney's fees and cost of litigation) the State, its officers, agents, and employees in their official and/or individual capacities from every liability, loss, or claim for damages to persons or property, direct or indirect of whatsoever nature arising out of, or in any way connected with, any of the activities covered under this permit. The provisions of this paragraph are solely for the benefit of the State and the Texas Historical Commission and are not intended to create or grant any rights, contractual or otherwise, to any other person or entity.*
- 10) *Addendum: The Owner/Permittee, Project Sponsor and Principal Investigator/Investigation Firm must abide by any addenda hereto attached.*

Upon a finding that it is in the best interest of the State, this permit is issued on 01/21/2011.


James E. Bruseth, for the
Texas Historical Commission

From: Morse, Julie [jmorse@ntta.org]
Sent: Thursday, March 03, 2011 12:08 PM
To: 'Mark Denton'; Linda Henderson
Cc: Mow, Elizabeth; Shelton, Lori; Hutchison, Mike; Tom Diamond; Craig, Matt; Jaynes, Rich; '42436_DNTPhase4&5@hntb.com'; 'Ashley Oliver'; 'arcdigs@aol.com'; Julie Morse
Subject: RE: NTTA DNT Phase 4B/5A Historic-age Resources Survey Report
Attachments: DNT 4B-5A HRDDR Feb. 2011.pdf

Mark & Linda-

Please find attached for your files the historic-age resources survey report for the NTTA's proposed DNT Phase 4B/5A project. Please let me know if you have any questions.

The archeology survey is still underway. The NTTA will submit hard copies of the archeology survey report to your office once it is complete.

Julie

Julie Morse
Environmental Manager

North Texas Tollway Authority
Program Management Office
5910 W. Plano Parkway, Suite 200
Plano, TX 75093

Tel (214) 224-3037
Fax (972) 661-5614

From: Mark Denton [<mailto:Mark.Denton@thc.state.tx.us>]
Sent: Friday, January 21, 2011 2:11 PM
To: Morse, Julie; Linda Henderson
Cc: Mow, Elizabeth; Shelton, Lori; Hutchison, Mike; Tom Diamond; 'mcraig@halff.com'; 'rjaynes@halff.com'; '42436_DNTPhase4&5@hntb.com'; 'Ashley Oliver'; 'arcdigs@aol.com'; Julie Morse
Subject: RE: TAP application for NTTA DNT Phase 4B/5A

That's great and I'm sorry I missed the reference to the HS survey in the permit application (too many projects, not enough time). If Linda has any questions I'm sure she will contact you. Will the reports come to us as separate submission, and do you have a time frame on when we might receive the historic structures survey?

AR Consultants' permit number for the archeological survey is **Permit # 5866**.

From: Morse, Julie [<mailto:jmorse@ntta.org>]
Sent: Thursday, January 20, 2011 1:06 PM
To: Mark Denton
Cc: Mow, Elizabeth; Shelton, Lori; Hutchison, Mike; Tom Diamond; 'mcraig@halff.com'; 'rjaynes@halff.com'; '42436_DNTPhase4&5@hntb.com'; 'Ashley Oliver'; 'arcdigs@aol.com'; Julie Morse
Subject: RE: TAP application for NTTA DNT Phase 4B/5A

Mark-

NTTA conducted a historic-age resources reconnaissance field survey for the subject project in Oct. 2010. Notably, no structures were found within the floodplain of Little Elm Creek, where trenching has been proposed. The summary report for this survey is currently being finalized.

In anticipation of applying for a Section 404 permit prior to construction of the proposed tollway extension, the historic resources survey was conducted in accordance with Section 106 regulations/criteria so that the report can be provided to the USACE for coordination with the THC when NTTA submits a Section 404 permit application.

Consistent with the 1st amended Programmatic Agreement between FHWA, TxDOT, SHPO, and ACHP Regarding the Implementation of Transportation Undertakings (Dec 2005), NTTA used an APE of 300 feet beyond the proposed right-of-way for the historic resources survey.

Reference to the standing structures survey and report is included in the Antiquities Permit application (see paragraph 5 on page 3 of the scope letter attached to the permit application form). We believe that conducting a historic structures survey in accordance with established protocols for transportation projects adequately addresses your concerns.

Please let me know if you feel that the THC does not have enough information regarding historic structures to issue the TAP for archeological investigations, and we can set up a conference call to discuss further.

Thank you,
Julie

From: Mark Denton [<mailto:Mark.Denton@thc.state.tx.us>]

Sent: Tuesday, January 18, 2011 2:03 PM

To: Morse, Julie

Cc: Mow, Elizabeth; Shelton, Lori; Hutchison, Mike; Tom Diamond; 'mcraig@halff.com'; 'rjaynes@halff.com'; '42436_DNTPhase4&5@hntb.com'; 'Ashley Oliver'; 'arcdigs@aol.com'; Julie Morse

Subject: RE: TAP application for NTTA DNT Phase 4B/5A

We have received the hard copy of the permit application, but the new bridge crossings, including the Little Elm Creek crossing, must involve the need for a USACE permit(s), so you will need to coordinate with them and the History Programs Division of the THC, to determine whether a historic structures survey will be warranted and what the APE be for those locations. Once you've let me know that these issues have been resolved, I will be able to issue you a permit for the archeological investigations.

From: Morse, Julie [<mailto:jmorse@ntta.org>]

Sent: Friday, January 14, 2011 2:41 PM

To: Mark Denton

Cc: Mow, Elizabeth; Shelton, Lori; Hutchison, Mike; Tom Diamond; 'mcraig@halff.com'; 'rjaynes@halff.com'; '42436_DNTPhase4&5@hntb.com'; 'Ashley Oliver'; 'arcdigs@aol.com'; Julie Morse

Subject: TAP application for NTTA DNT Phase 4B/5A

Mark-

The hard copy of the attached TAP application for the NTTA's proposed Dallas North Tollway Extension Phase 4B/5A project was sent via fedex to your attention today. This project does not have any federal involvement. Our field archeologists are ready to begin as soon as the TAP is issued.

Thank you,
Julie

Julie Morse

Environmental Manager

North Texas Tollway Authority

Program Management Office

5910 W. Plano Parkway, Suite 200

Plano, TX 75093

Tel (214) 224-3037

Fax (972) 661-5614



March 4, 2011

Ms. Kathy Boydston
Habitat Assessment Branch, Resource Protection Division
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

Re: Dallas North Tollway Extension
Phase 4B/5A: FM 428 to FM 121
Collin, Denton, and Grayson Counties, Texas

Dear Ms. Boydston:

The North Texas Tollway Authority (NTTA) is currently conducting an Environmental Evaluation for the extension of the Dallas North Tollway (DNT) in Collin, Denton, and Grayson Counties. The proposed DNT Phase 4B/5A facility would extend north from Farm to Market Road (FM) 428 in Collin County to FM 121 in Grayson County, a distance of approximately 11.9 miles (**Exhibit 1-1**). The proposed project is on new location and would require land within Collin and Denton Counties (Phase 4B) as well as Grayson County (Phase 5A) (**Exhibit 1-2**). A letting date has not yet been determined for the proposed project, but construction is not anticipated to begin prior to the year 2020. The proposed project would be funded by NTTA system financing, and federal funding would not be utilized.

The proposed controlled-access toll road would ultimately have six tolled mainlanes, three lanes in each direction, and three-lane non-tolled northbound and southbound frontage roads. Portions of several two-lane county roads, which parallel the proposed tollway alignment, would be absorbed by the proposed frontage road lanes. These existing gravel roads include County Road (CR) 9, CR 10 (County Line Road), and Scharff Road. The proposed typical ROW width is 400 feet. Approximately 584 acres of ROW, including approximately 28 acres of existing road ROW, and 34 acres of drainage easements would be required to construct the proposed project.

We are seeking your input regarding recommended studies and actions to address the presence or absence of threatened or endangered wildlife and rare vegetation series within Collin, Denton, and Grayson Counties. Data obtained from the TPWD Texas Natural Diversity Database (TXNDD) in October 2010 did not indicate any records of rare species or wildlife management areas within the project area. It is understood the TXNDD data does not provide a definitive statement as to the presence, absence, or condition of special species, natural communities, or other substantial features within the proposed project area.

Field reconnaissance did not identify habitat for federal candidate, threatened, or endangered species or any rare vegetation series that is habitat for a state-listed species, and no S1 or S2

listed vegetation communities were identified. The proposed project area may contain preferred habitat for one state-listed species, the timber/canebrake rattlesnake (*Crotalus horridus*). The field reconnaissance did identify several areas of riparian forest and a few small native prairie remnants, consisting of big bluestem (*Andropogon gerardii*) and Texas cupgrass (*Eriochloa sericea*). Potential impacts to these areas cannot be fully determined until the proposed project progresses to final design. The NTTA would consider mitigation for impacts to the identified non-regulated habitats (native prairie and riparian forest) and would coordinate further with the TPWD prior to construction if impacts are unavoidable.

We would like to request your input regarding any additional concerns or recommendations to minimize or mitigate potential impacts to the fish and wildlife resources managed by your agency. If you should need further information concerning this request, please contact Julie Morse at 214-224-3037.

Sincerely,



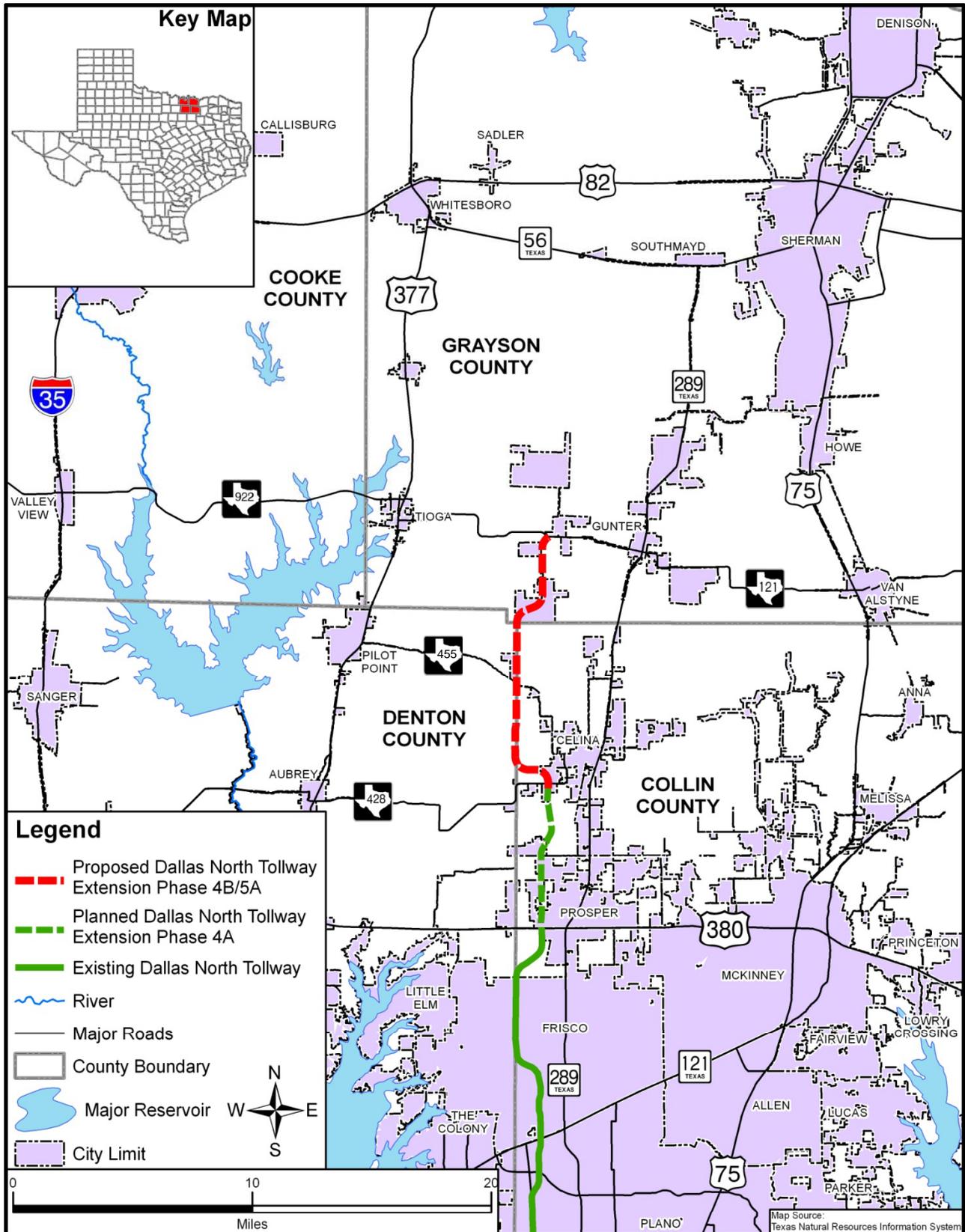
Elizabeth Mow, P.E.
Director of Project Delivery

EM/jsi

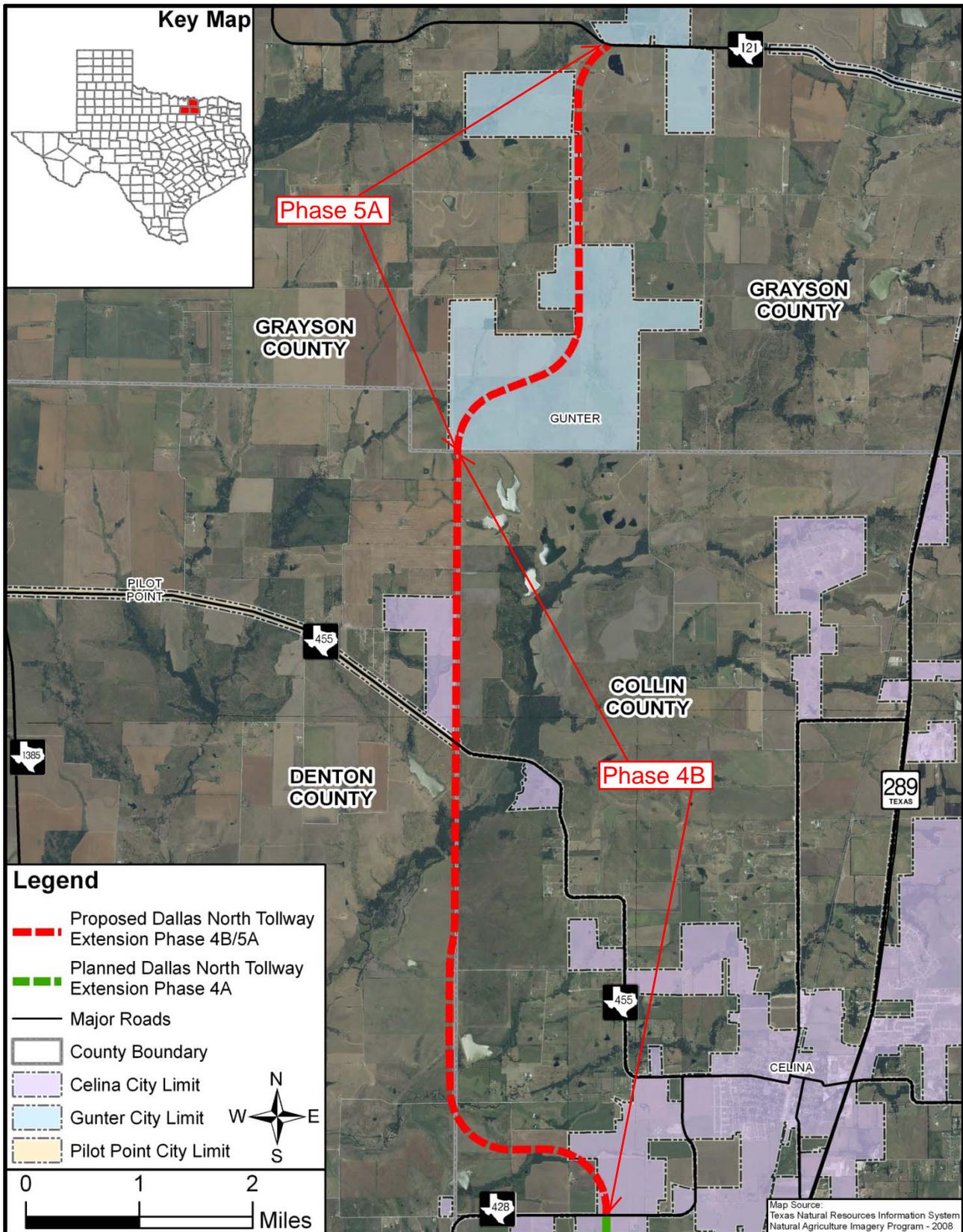
Enclosures:

- Exhibit 1-1: Regional Context of the Proposed Project
- Exhibit 1-2: Project Vicinity Map

cc: Julie Morse, Environmental Manager – HNTB Corporation
Rich Jaynes, Sr. Environmental Scientist – Halff Associates, Inc.



Regional Context of the Proposed Project
 Dallas North Tollway Extension Phase 4B/5A from FM 428 to FM 121



Project Vicinity Map

Dallas North Tollway Extension Phase 4B/5A from FM 428 to FM 121

THIS PAGE LEFT BLANK INTENTIONALLY

Appendix 5-2

Government Resolutions Regarding Preferred Alignment

Table of Contents

Date	Document Description	Page #
County Resolutions		
18 Jan. 2005	Denton County Commissioners Court Resolution	1-4
10 Jan. 2005	Collin County Commissioners Court Resolution	5-8
20 May 2008	Collin County Commissioners Court Rescission of Resolution	9
27 Apr. 2009	Grayson County Commissioners Court Resolution	10-14
City Resolutions		
14 Jan. 2008	City of Pilot Point Resolution	15-17
11 May 2009	City of Gunter Resolution	18-20

DENTON COUNTY COMMISSIONERS COURT

Month January Day 18 Year 2005

Court Order Number: 05-0042

3.A

THE ORDER Approval of a resolution to establish the Dallas North Tollway (DNT) preferred corridor alignment North of FM 428 and any appropriate action. Commissioner, Precinct 1.

Motion by White

Seconded by Horn

County Judge Yes
Mary Horn Abstain
No
Absent

Commissioner Pct No 1 Yes
Cynthia White Abstain
No
Absent

Commissioner Pct No 2 Yes
Sandy Jacobs Abstain
No
Absent

Commissioner Pct No 3 Yes
Bobbie J. Mitchell Abstain
No
Absent

Commissioner Pct No 4 Yes
Jim Carter Abstain
No
Absent

Motion Carried 4-0-0

Other Action: Pulled from Consent No Action Postponed

BY ORDER OF THE COMMISSIONERS COURT:

ATTEST:

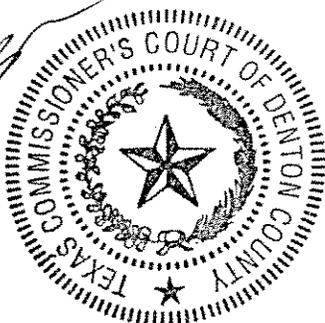
Mary Horn
Presiding Officer

Cynthia Mitchell, County Clerk
and Ex-Officio Clerk of the
Commissioners Court of
Denton County, Texas

APPROVED AS TO FORM:

Thomas J. Lewis
Assistant District Attorney

BY Eric McCabe
Deputy County Clerk



Resolution Establishing Preferred Corridor Alignment North of FM 428

Whereas the North Texas Tollway Authority (NTTA) in October 2004 approved construction plans and funding to extend the Dallas North Tollway (DNT) from its present terminus at Gaylord Parkway north to create a new interchange of the DNT with US 380. and;

Whereas, Grayson County has expressed an interest in preserving a similar corridor to connect with US 82 in Grayson County, and;

Whereas, proper regional transportation and land use planning requires that a complementary corridor be determined north of FM 428 and south of the common boundaries between Collin, Denton and Grayson counties, and;

Whereas, the above counties have conducted corridor planning studies that have determined that the major differences in potential alignments are the respective lengths, which directly influence the construction cost estimate, and the number of property owners, which influences the ability to minimize right-of-way acquisition costs or significant eminent domain efforts and;

Whereas, the general engineering consultant for NTTA has indicated that construction and operation of the "County Line" alignment could be more efficient due to one major floodplain crossing as compared to four smaller crossings for the other alternatives, and;

Whereas, Denton County has made significant progress in acquiring letters of intent to dedicate right-of-way along the "County Line" alignment, and to adopt a consensus alignment other than the "County-Line" alignment at this time may require a commitment of substantial funds by some entity for acquisition of right-of-way, and;

Whereas, Collin County has indicated that they will be willing and able to share costs of corridor development with Denton County, and;

Whereas, the traffic engineer for NTTA has provided an opinion that toll feasibility for the "County Line" alignment would be enhanced over other alternatives due to being the furthest distance from US 289 Preston Rd., the primary source of competition for the potential toll project.

Now Therefore Be It Resolved that the Commissioners Court of Denton County hereby accepts the "County Line" alignment between FM 428 and the Collin-Denton-Grayson County lines (exhibit A) as the best alignment for the initial construction of a farm-to-market facility and the eventual construction of a high-speed, limited access facility, and:

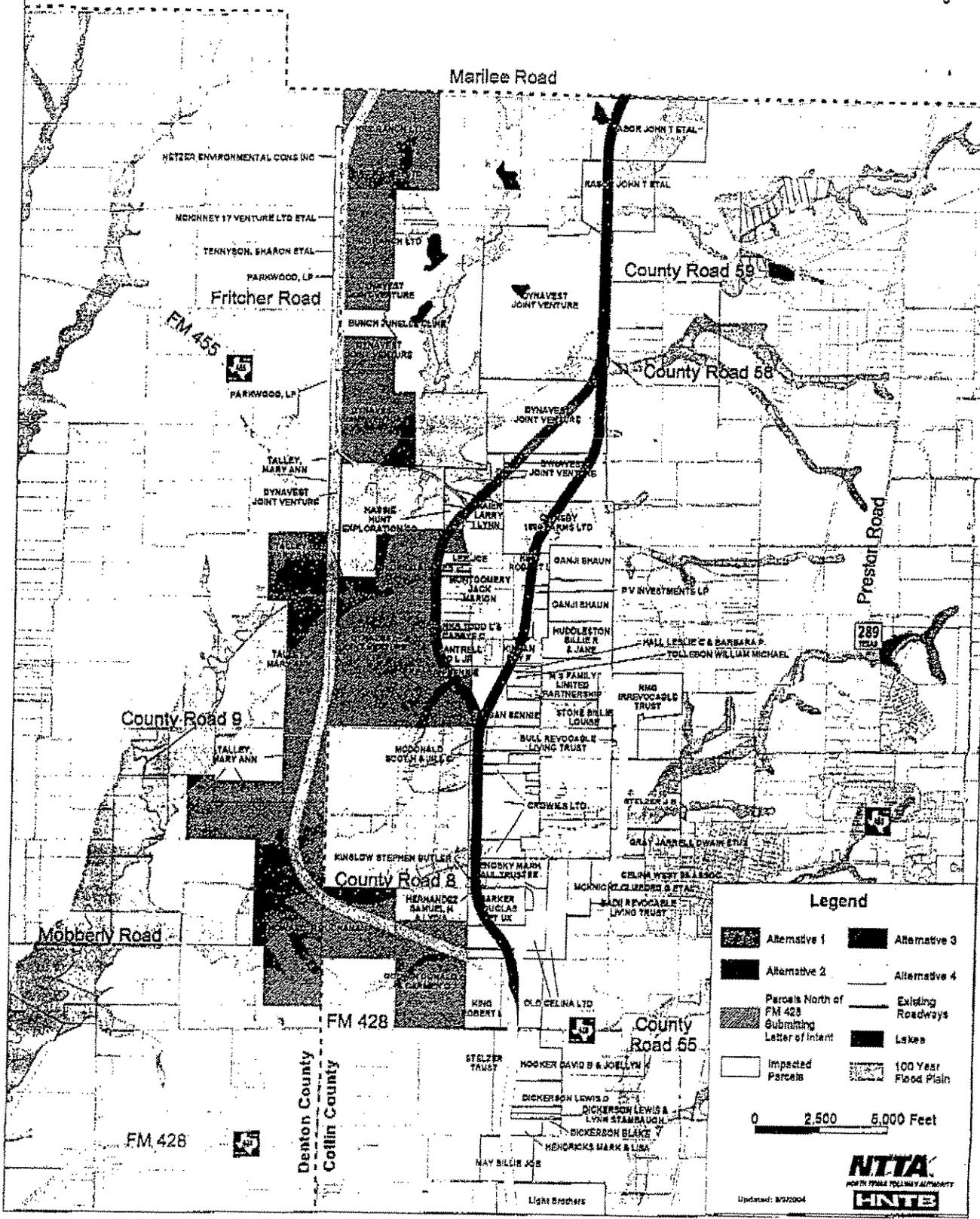
Be it Further Resolved that Denton County will jointly support Collin County in securing the definition of the "County Line" corridor on the regional transportation plan, and;

Be it Further Resolved that Denton County will jointly support Collin County in requesting that the NTTA consider participation in the preservation and enhancement of said "County Line" alignment for an eventual extension of the main lanes of the Dallas North Tollway, when determined feasible by the Board of Directors of the NTTA.

Dallas North Tollway Phase 4 (North of FM 428) Proposed Alignments

For NTTA use only.
 Draft document subject to change.
 No third party is authorized to rely
 on information contained in this document.

FOR DISCUSSION PURPOSES ONLY



Legend

	Alternative 1		Alternative 3
	Alternative 2		Alternative 4
	Parcels North of FM 428 Submitting Letter of Intent		Existing Roadways
	Impacted Parcels		Lakes
			100 Year Flood Plain

0 2,500 5,000 Feet

NTTA
 NORTH TOLLWAY AUTHORITY

HNTE

Updated: 8/22/04

THE STATE OF TEXAS

RESOLUTION
ESTABLISH THE PREFERRED CORRIDOR
ALIGNMENT NORTH OF FM 428
COMMISSIONERS COURT

COUNTY OF COLLIN

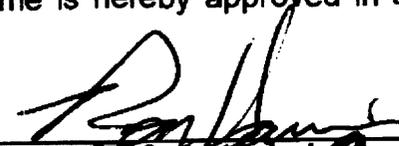
On January 10, 2005, the Commissioners Court of Collin County, Texas, met in regular session with the following members present and participating, to wit:

Ron Harris
Phyllis Cole
Jerry Hoagland
Joe Jaynes
Jack Hatchell

County Judge, Presiding
Commissioner, Precinct 1
Commissioner, Precinct 2
Commissioner, Precinct 3
Commissioner, Precinct 4

During such session the court considered a request approving the adoption of the attached resolution establishing the Dallas North Tollway (DNT) preferred corridor alignment North of FM 428.

Thereupon, a motion was made, second and carried with a majority vote of the court for approval to adopt the attached resolution establishing the Dallas North Tollway (DNT) preferred corridor alignment North of FM 428. Same is hereby approved in accordance with the attached documentation.



Ron Harris, County Judge



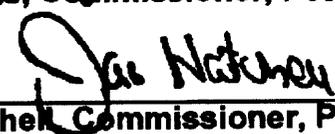
Phyllis Cole, Commissioner, Pct. 1

- no -

Jerry Hoagland, Commissioner, Pct. 2



Joe Jaynes, Commissioner, Pct. 3

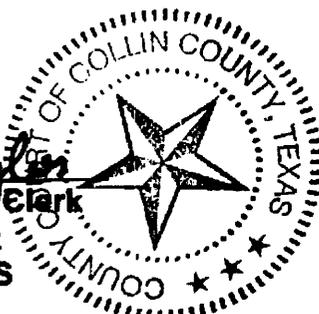


Jack Hatchell, Commissioner, Pct. 4

ATTEST:



Brenda Taylor, Ex-Officio Clerk
Commissioners' Court
Collin County, TEXAS



Resolution Establishing Preferred Corridor Alignment North of FM 428

Whereas the North Texas Tollway Authority (NTTA) in October 2004 approved construction plans and funding to extend the Dallas North Tollway (DNT) from its present terminus at Gaylord Parkway north to create a new interchange of the DNT with US 380, and;

Whereas, the 2003 Collin County bond program provided construction funds to extend a farm-to-market road from the terminus of the DNT and US 380 north to an intersection with FM 428, and;

Whereas, Collin County right-of-way acquisition processes are acquiring sufficient right-of-way to support the eventual construction of a high-speed, limited access facility within this corridor, and;

Whereas, Grayson County has expressed an interest in preserving a similar corridor to connect with US 82 in Grayson County, and;

Whereas, proper regional transportation and land use planning requires that a complementary corridor be determined north of FM 428 and south of the common boundaries between Collin, Denton and Grayson counties, and;

Whereas, the above counties have conducted corridor planning studies that have determined that the major differences in potential alignments are the respective lengths, which directly influence the construction cost estimate, and the number of property owners, which influences the ability to minimize right-of-way acquisition costs or significant eminent domain efforts, and;

Whereas, the general engineering consultant for NTTA has indicated that construction and operation of the "County Line" alignment could be more efficient due to one major floodplain crossing as compared to four smaller crossings for the other alternatives, and;

Whereas, Denton County has made significant progress in acquiring letters of intent to dedicate right-of-way along the "County Line" alignment, and to adopt a consensus alignment other than the "County-Line" alignment at this time may require a commitment of substantial funds by some entity for acquisition of right-of-way, and;

Whereas, Denton County has indicated that they will be willing and able to share costs of corridor development with Collin County, and;

Whereas, the traffic engineer for NTTA has provided an opinion that toll feasibility for the "County Line" alignment would be enhanced over other alternatives due to being the furthest distance from US 289/Preston Rd., the primary source of competition for the potential toll project. /

Now Therefore Be It Resolved that the Commissioners Court of Collin County hereby accepts the "County Line" alignment between FM 428 and the Collin-Denton-Grayson County lines (as shown in Exhibit A) as the best alignment for the initial construction of a farm-to-market facility and the eventual construction of a high-speed, limited access facility, and;

Be It Further Resolved that Collin County will share right-of-way and development costs equally with Denton County in the Development of said DNT Extension, and;

Be It Further Resolved that Collin County will jointly support Denton County in securing the definition of the "County Line" corridor on the regional transportation plan, and;

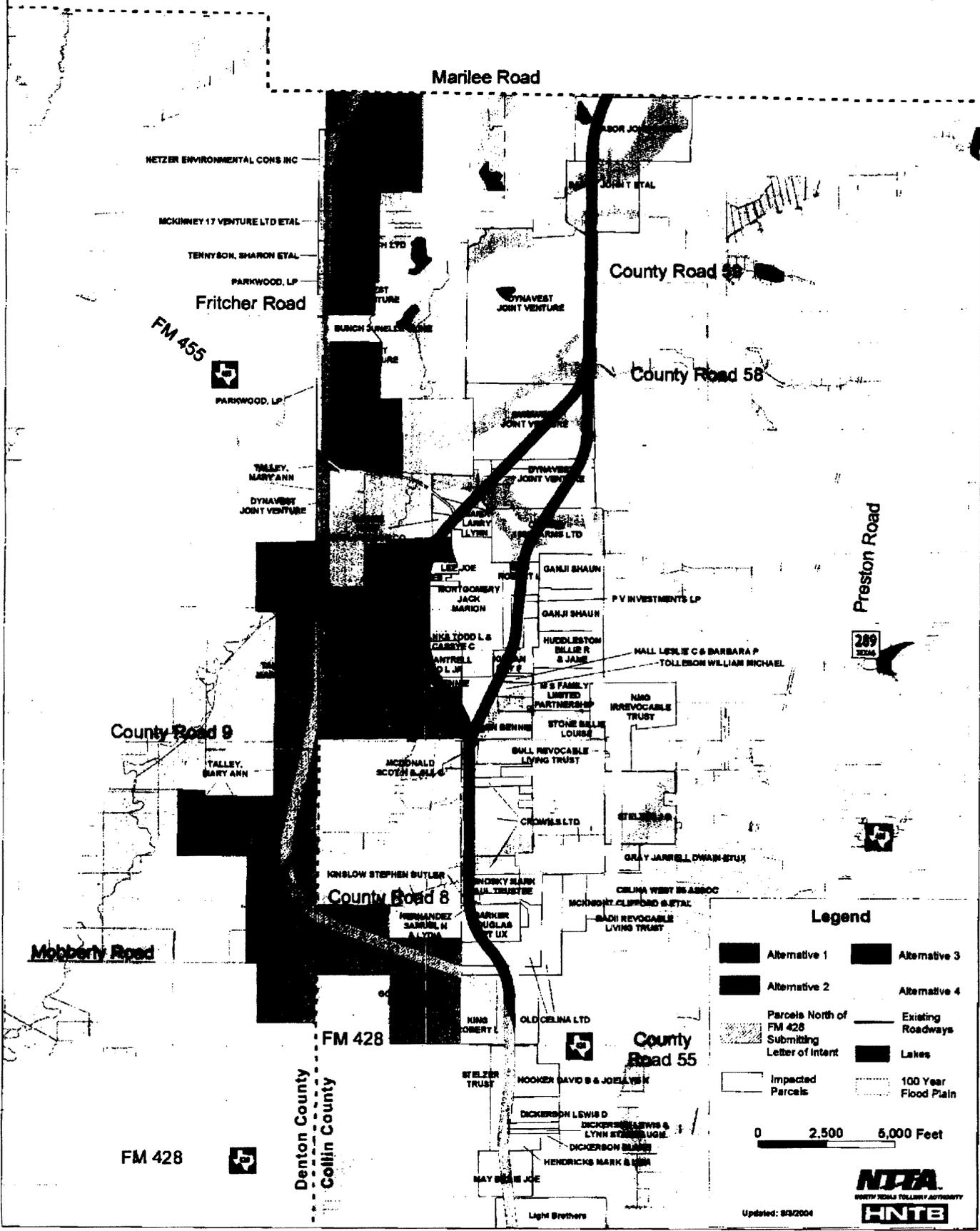
Be It Further Resolved that Collin County will jointly support Denton County in requesting that the NTTA consider participation in the preservation and enhancement of said "County Line" alignment for an eventual extension of the main lanes of the Dallas North Tollway, when determined feasible by the Board of Directors of the NTTA.

U:dnt_countlyline_res__110904

Dallas North Tollway Phase 4 (North of FM 428) Proposed Alignments

For NCTA use only.
 Draft document subject to change.
 No third party is authorized to rely
 on information contained in this document.

FOR DISCUSSION PURPOSES ONLY



Legend

	Alternative 1		Alternative 3
	Alternative 2		Alternative 4
	Parcels North of FM 428		Existing Roadways
	Submitting Letter of Intent		Lakes
	Impacted Parcels		100 Year Flood Plain

0 2,500 5,000 Feet



Updated: 03/2004

THE STATE OF TEXAS

COUNTY OF COLLIN

Subject: Rescind Court Order No. 2005-022-01-10, Establishing the Dallas North Tollway (DNT) Preferred Corridor Alignment North of FM 428 – Commissioners Court

On May 20, 2008, the Commissioners Court of Collin County, Texas, met in special session with the following members present and participating, to wit:

Keith Self
Phyllis Cole
Jerry Hoagland
Joe Jaynes
Jack Hatchell

County Judge, Presiding
Commissioner, Precinct 1
Commissioner, Precinct 2
Commissioner, Precinct 3
Commissioner, Precinct 4

During such session the court considered a request for approval to rescind Court Order No. 2005-022-01-10 establishing the preferred corridor alignment North of FM 428.

Thereupon, a motion was made, seconded and carried with a majority vote of the court for approval to rescind Court Order No. 2005-022-01-10 establishing the preferred corridor alignment North of FM 428 and approval to pursue other alternatives for the preferred alignment of the Dallas North Tollway (DNT) 4B with the caveat that Collin County be the lead agency. Same is hereby approved in accordance with the attached documentation.

Keith Self, County Judge

Phyllis Cole, Commissioner, Pct. 1

Jerry Hoagland, Commissioner, Pct. 2

Joe Jaynes, Commissioner, Pct. 3

Jack Hatchell, Commissioner, Pct. 4



ATTEST:

Stacey Kemp, Ex-Officio Clerk
Commissioners' Court
Collin County, T E X A S



10

GRAYSON COUNTY COMMISSIONERS COURT

AGENDA REQUEST FORM

ALL REQUESTS TO BE PLACED ON A COURT AGENDA MUST BE RECEIVED BY THE COUNTY JUDGE OFFICE NO LATER THAN 12:00 P.M. ON THE THURSDAY PRECEDING A MONDAY MEETING.

 Print

PLEASE PROVIDE THE FOLLOWING INFORMATION:

JUDGE OR
COMMISSIONER
AUTHORIZING:

Gene Short

NAME OF PERSON
PRESENTING THE
REQUEST:

Gene Short

DEPARTMENT:

COMMISSIONER P-4

TELEPHONE NO:

903-813-4318

DATE:

April 23, 2009

COURT DATE:

April 27, 2009

REMARKS:

ACTION REQUESTED OF THE COURT:

Consider resolution supporting "County Line" alignment of Dallas North Tollway in Collin and Denton Counties.

HAS THIS ITEM BEEN BEFORE THE COMMISSIONERS COURT PREVIOUSLY? IF SO, WHEN?

No

Attachments:

**RESOLUTION BY GRAYSON COUNTY
ESTABLISHING PREFERRED CORRIDOR ALIGNMENT
OF DALLAS NORTH TOLLWAY NORTH OF FM 428**

Whereas the North Texas Tollway Authority (NTTA) in October 2004 approved construction plans and funding to extend the Dallas North Tollway (DNT) from its present terminus at Gaylord Parkway north to create a new interchange of the DNT with US 380. and;

Whereas, Grayson County has expressed an interest in preserving a similar corridor to connect with US 75 in Grayson County, and; that Grayson County believes that the "County Line" alignment will be more beneficial in securing a faster connection of the DNT to US HWY 75 in Grayson County.

Whereas, proper regional transportation and land use planning requires that a complementary corridor be determined north of FM 428 and south of the common boundaries between Collin, Denton and Grayson Counties, and;

Whereas, the above counties have conducted corridor planning studies that have determined that the major differences in potential alignments are the respective lengths, which directly influence the construction cost estimate, and the number of property owners, which influences the ability to minimize right-of-way acquisition costs or significant eminent domain efforts and;

Whereas, the general engineering consultant for NTTA has indicated that construction and operation of the "County Line" alignment could be more efficient due to one major floodplain crossing as compared to four smaller crossings for the other alternatives, and;

Whereas, Denton County has made significant progress in acquiring letters of intent to dedicate right- of-way along the "County Line" alignment and to adopt a consensus alignment other than the "County-Line" alignment at this time may require a commitment of substantial funds by some entity for acquisition of right-of-way, and;

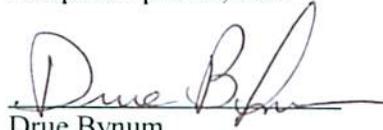
Whereas, the traffic engineer for NTTA has provided an opinion that toll feasibility for the "County Line" alignment would be enhanced over other alternatives due to being the furthest distance from US 289 Preston Rd., the primary source of competition of potential toll project.

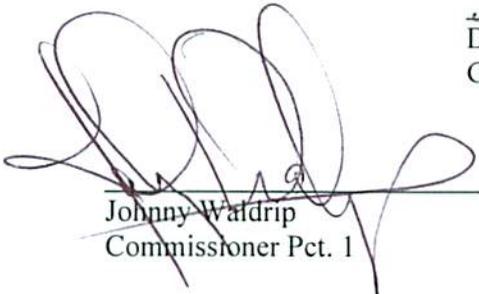
Now therefore be It Resolved that the Commissioners Court of Grayson County hereby accepts the "County Line" alignment between FM 428 and the Collin-Denton-Grayson County lines (exhibit A and known as phase 4B) as the best alignment for the initial construction of a farm-to-market facility and the eventual construction of a high-speed, limited access facility, and;

Be it Further Resolved that Grayson County will jointly support Denton and Collin Counties in securing the definition of the "County Line" corridor on the regional transportation plan, and;

Be it Further Resolved that Grayson County will jointly support Denton and Collin Counties in requesting that the NTTA consider participation in the preservation and enhancement of said "County Line" alignment for an eventual extension of the main lanes of the Dallas North Tollway, when determined feasible by the Board of Directors of the NTTA.

Adopted April 27, 2007

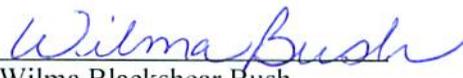

Drue Bynum
Grayson County Judge


Johnny Waldrip
Commissioner Pct. 1

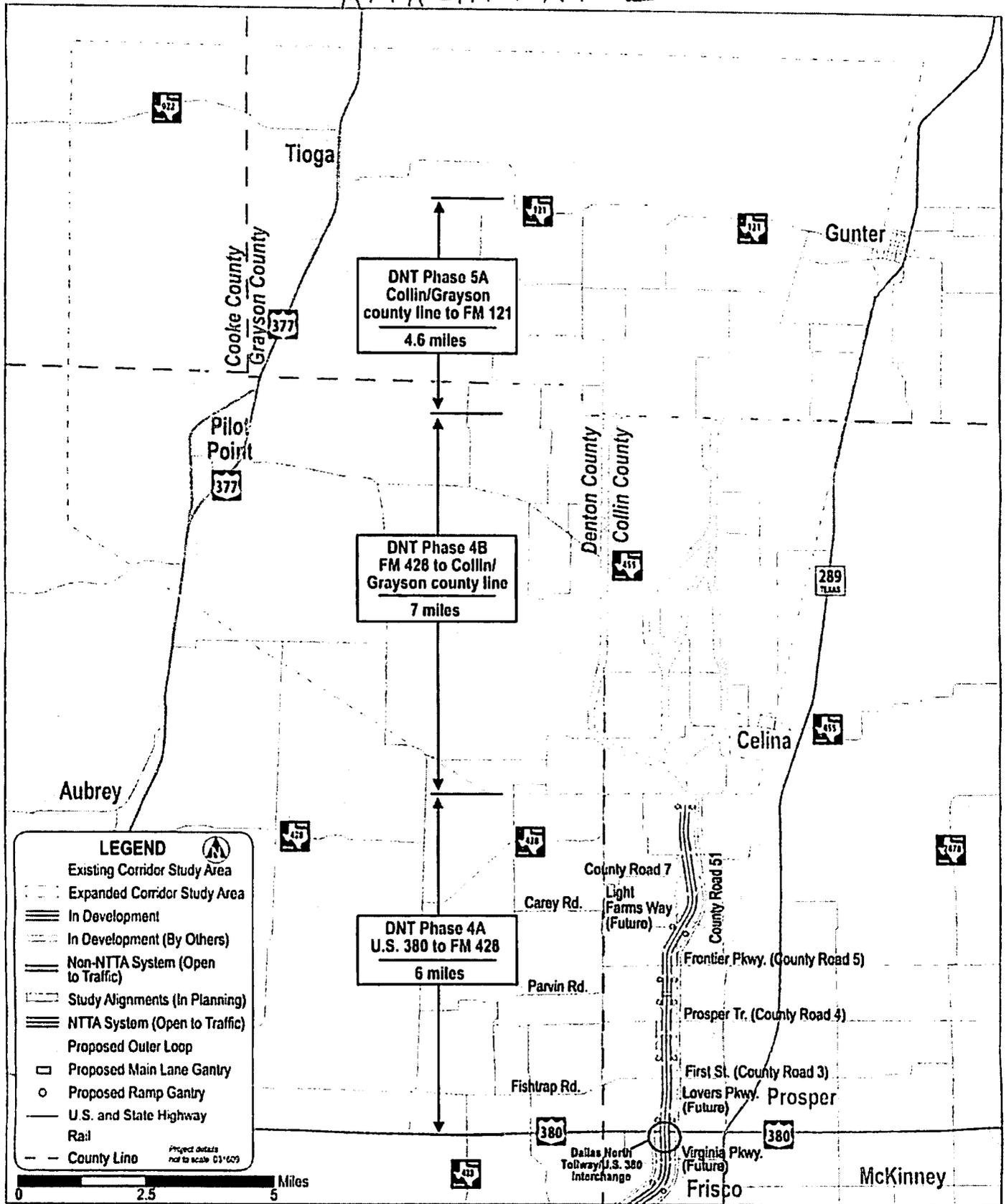

David Whitlock
Commissioner Pct. 2


Jackie Crisp
Commissioner Pct. 3


Gene Short
Commissioner Pct. 4

Attest 
Wilma Blackshear Bush
Grayson County Clerk

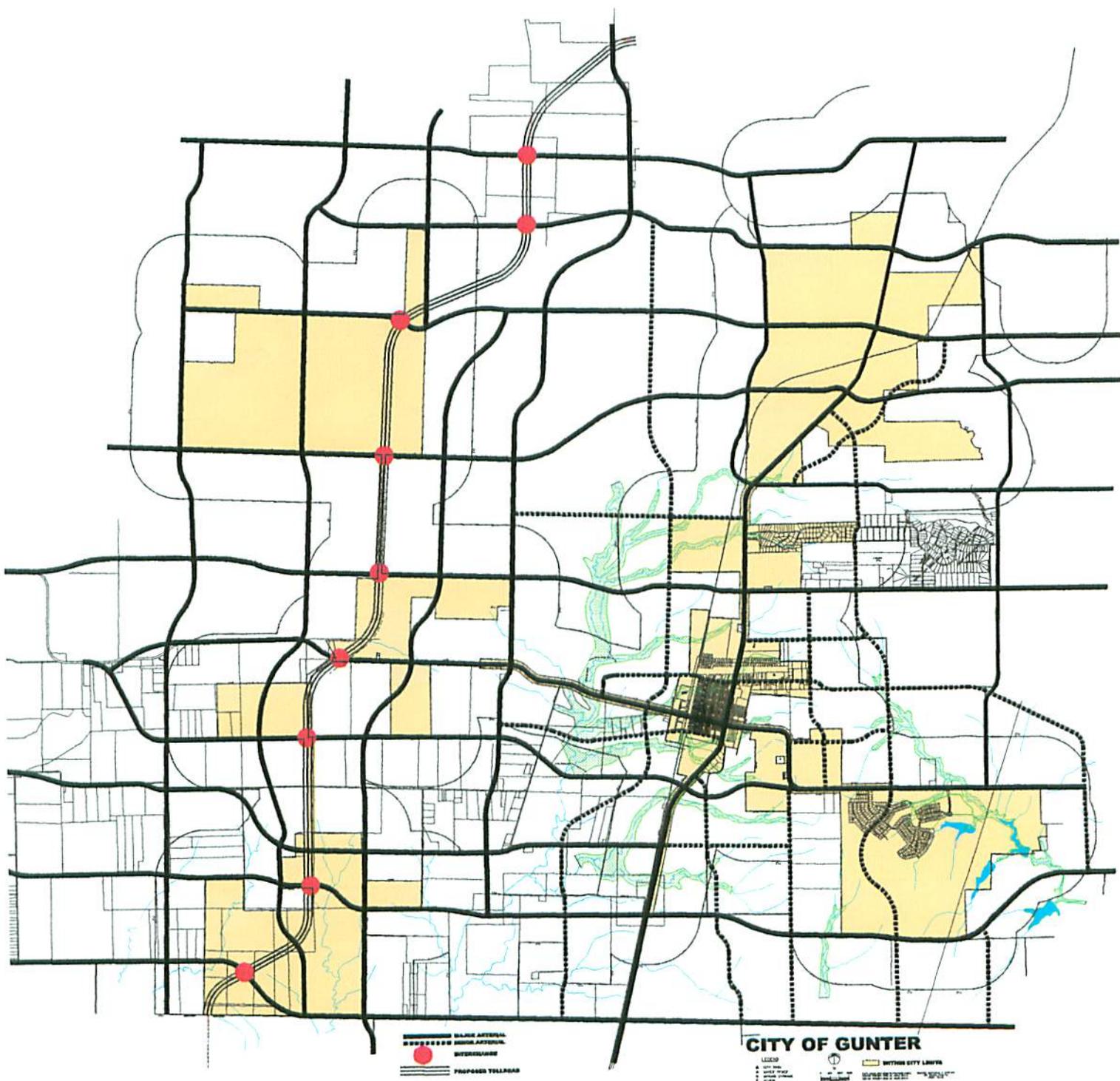
ATTACHMENT 1



Dallas North Tollway (DNT) Phase 4 & 5
Project Location Map

March 2009





CITY OF PILOT POINT

RESOLUTION NO. 2008-07-047

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PILOT POINT, TEXAS, ENDORSING THE NORTH TEXAS TOLLWAY AUTHORITY PREFERRED CORRIDOR "COUNTY LINE" ALIGNMENT OF THE NORTH DALLAS TOLLWAY ALONG THE COLLIN-DENTON COUNTY LINE NORTH OF FM 428 AND SOUTH OF COMMON BOUNDARIES BETWEEN COLLIN, DENTON AND GRAYSON COUNTIES; PROVIDING FOR JOINT SUPPORT OF COLLIN AND DENTON COUNTIES IN SECURING THE DEFINITION OF THE "COUNTY LINE" CORRIDOR ON THE REGIONAL TRANSPORTATION PLAN; PROVIDING FOR JOINT SUPPORT OF COLLIN AND DENTON COUNTIES IN REQUESTING THAT THE NORTH TEXAS TOLLWAY AUTHORITY CONSIDER PARTICIPATION IN THE PRESERVATION AND ENHANCEMENT OF THE "COUNTY LINE" ALIGNMENT FOR EVENTUAL EXTENSION OF THE MAIN LANES OF THE DALLAS NORTH TOLLWAY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the North Texas Tollway Authority ("NTTA") in October 2004 approved construction plans and funding to extend the Dallas North Tollway ("DNT") from its then existing terminus at Gaylord Parkway north to create a new interchange of the DNT with US 380, and;

WHEREAS, the 2003 Collin County bond program provided construction funds to extend a farm-to-market road from the terminus of the DNT and US 380 north to an intersection with FM 428, and;

WHEREAS, proper regional transportation and land use planning requires that a complementary corridor be determined north of FM 428 and south of the common boundaries between Collin, Denton and Grayson Counties, and;

WHEREAS, the above counties have conducted corridor planning studies that have determined that the major differences in potential alignments are the respective lengths, which directly influence the construction cost estimate, and the number of property owners, which influences the ability to minimize right-of-way acquisition costs or significant eminent domain efforts, and;

WHEREAS, the general engineering consultant for NTTA has indicated that construction and operation of the "County Line" alignment could be more efficient due to one major floodplain crossing as compared to four smaller crossings for the other alternatives, and;

WHEREAS, Collin and Denton Counties have indicated significant progress in acquiring rights-of-way along the "County Line" alignment, and;

WHEREAS, Collin and Denton Counties have indicated that they will be willing and able to share costs of corridor development, and;

WHEREAS, the traffic engineer for NTTA has provided an opinion that toll feasibility for the "County Line" alignment would be enhanced over other alternatives due to being the furthest distance from US 289/Preston Rd., the primary source of competition for the potential toll project, and;

WHEREAS, the Commissioners Courts of Collin and Denton Counties have by resolution accepted the "County Line" alignment between FM 428 and the Collin-Denton-Grayson County Lines as the best alignment for the initial construction of a farm-to-market facility and the eventual construction of a high-speed, limited access facility, as expressed in Court Order No. 2005-022-01-10, of the Commissioners Court of Collin County, Texas on January 10, 2005, and in Court Order No. 05-0042, of the Commissioners Court of Denton County, Texas on January 18, 2005, and;

WHEREAS, the Commissioners Courts of Collin and Denton Counties have also resolved to jointly support securing the definition of the "County Line" corridor on the regional transportation plan, and;

WHEREAS, the Commissioners Courts of Collin and Denton Counties have also resolved to jointly support requesting that the NTTA consider participation in the preservation and enhancement of said "County Line" alignment for an eventual extension of the main lanes of the Dallas North Tollway, when determined feasible by the Board of Directors of the NTTA.

BE IT THEREFORE RESOLVED BY THE CITY COUNCIL OF THE CITY OF PILOT POINT, TEXAS:

SECTION 1

That all of the above premises are found to be true and correct and are incorporated into the body of this Resolution as if copied in their entirety.

SECTION 2

That the City Council of the City of Pilot Point has determined and finds that the "County Line" alignment between FM 428 and the Collin-Denton-Grayson County Lines is the best alignment for the initial construction of a farm-to-market facility and the eventual construction of a high-speed, limited access facility.

SECTION 3

That the City Council of the City of Pilot Point wholly and enthusiastically endorses the North Texas Tollway Authority preferred corridor "County Line" alignment of the North Dallas Tollway along the Collin-Denton County Line north of FM 428 and south of the common boundaries between Collin, Denton and Grayson Counties.

SECTION 4

That the City Council of the City of Pilot Point hereby resolves to jointly support Collin and Denton Counties in securing the definition of the "County Line" corridor on the regional transportation plan.

SECTION 5

That the City Council of the City of Pilot Point hereby resolves to jointly support Collin and Denton Counties in requesting that the NTTA consider participation in the preservation and enhancement of said "County Line" alignment for an eventual extension of the main lanes of the Dallas North Tollway, when determined feasible by the Board of Directors of the NTTA.

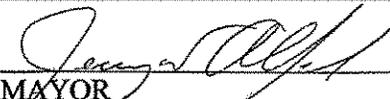
SECTION 6

It is hereby officially found and determined that the meeting at which this resolution was passed was open to the public as required by law.

SECTION 7

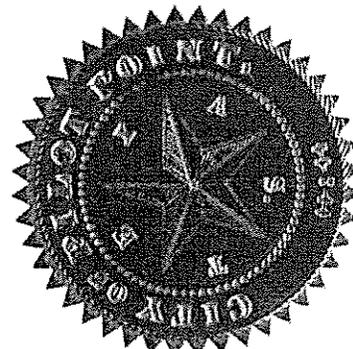
This Resolution shall become effective immediately upon its passage and approval, and it is accordingly so resolved.

PASSED AND APPROVED BY THE CITY COUNCIL OF THE CITY OF PILOT POINT, TEXAS, ON THIS 14TH DAY OF JANUARY, 2008.


MAYOR

ATTEST:


City Secretary



Whispering Winds Drive. Council Member Skeen seconded the motion. Motion carried 5-0.

AGENDA ITEM #9

Consider and Act on Approval of Ordinance #090511-9

AN ORDINANCE ESTABLISHING MAXIMUM, REASONABLE AND PRUDENT RATES OF SPEED ON CERTAIN PORTIONS OF CERTAIN STREETS AND HIGHWAYS AND PUBLIC PLACES IN THE CITY OF GUNTER; REPEALING ALL ORDINANCES AND PARTS OF ORDINANCES IN CONFLICT HEREWITH; FIXING PENALTIES FOR VIOLATION HEREOF; AND DECLARING AN EMERGENCY.

Council Member Banks made a motion to approve Ordinance #090511-9 establishing maximum reasonable and prudent rates of speed on certain portions of certain streets and highways and public places in the City of Gunter. Council Member Schmitt seconded the motion. Motion carried 5-0. This ordinance resulted from a new speed study on Farm-to-Market (FM) 121 establishing the city boundaries.

AGENDA ITEM #10

Consider and Act on approval of the installation of street lights on Autry Blvd.

Council Member Holloway made a motion to approve the installation of three additional streetlights on Autry Blvd in Gunter Town Center. Upon discussion of this item regarding the placement and number of lights needed Council Member Holloway rescinded her motion and made another motion to approve the installation of two (2) additional streetlights on Autry Blvd., one (1) on the corner of 4th Street and Harris Street and one (1) on the corner of 4th Street and Wood Drive. Council Member Moody seconded the motion. Motion carried 5-0.

AGENDA ITEM #11

Consider and Act on approval of Resolution #090511-11

A RESOLUTION OF THE CITY OF GUNTER, TEXAS ESTABLISHING A PREFERRED TOLLWAY CORRIDOR ALIGNMENT "PREFERRED ALIGNMENT" NORTH OF MARILEE ROAD TO FM 902

Council Member Schmitt made a motion to approve Resolution #090511-11 establishing a preferred tollway corridor alignment north of Marilee Road to FM 902. Council Member Moody seconded the motion. Motion carried 5-0.

CITY OF GUNTER, TEXAS

RESOLUTION NO. 090511-11

AN RESOLUTION OF THE CITY OF GUNTER, TEXAS ESTABLISHING A PREFERRED TOLLWAY CORRIDOR ALIGNMENT "PREFERRED ALIGNMENT" NORTH OF MARILEE ROAD TO FM 902

Whereas, the North Texas Tollway Authority (NTTA) in October 2004 approved construction plans and funding to extend the Dallas North Tollway (DNT) from its present terminus at Gaylord Parkway north to create a new interchange of the DNT with US 380; and,

Whereas, Grayson County has expressed an interest in preserving a similar corridor to connect with US 75 in Grayson County, and; that Grayson County believes that the "County Line" alignment (Exhibit A) will be more beneficial in securing a faster connection of the DNT to US HWY 75 in Grayson County; and,

Whereas, the City of Gunter has expressed an interest in preserving a Tollway corridor from Marilee Road to FM 902 "Preferred Alignment" (Exhibit B); and,

Whereas, proper regional transportation and land use planning requires that a complementary corridor be determined north of FM 428 and south of the common boundaries between Collin, Denton and Grayson Counties; and,

Whereas, the above counties have conducted corridor planning studies that have determined that the major differences in potential alignments are the respective lengths, which directly influence the construction cost estimate, and the number of property owners, which influences the ability to minimize right-of-way acquisition costs or significant eminent domain efforts; and,

Whereas, the general engineering consultant for NTTA has indicated that construction and operation of the "County Line" alignment could be more efficient due to one major floodplain crossing as compared to four smaller crossings for the other alternatives; and,

Whereas, Denton County has made significant progress in acquiring letters of intent to dedicate right-of-way along the "County Line" alignment and to adopt a consensus alignment other than the "County-Line" alignment at this time may require a commitment of substantial funds by some entity for acquisition of right-of-way; and,

Whereas, the traffic engineer for NTTA has provided an opinion that toll feasibility for the "County Line" alignment would be enhanced over other

alternatives due to being the furthest distance from US 289 Preston Rd., the primary source of competition of potential toll project; and,

Whereas, the City of Gunter has annexed portions of properties along its "Preferred Alignment"; and,

Whereas, the City of Gunter has conducted planning studies that have determined major differences in the number of property owners, which influences the ability to minimize right-of-way acquisition costs or significant eminent domain effort; and,

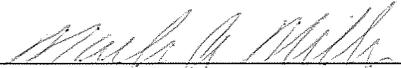
Whereas, the City of Gunter has made significant progress with commitments from property owners to dedicate right-of-way along the "Preferred Alignment"; and,

Whereas, the "Preferred Alignment" generally conforms to the Grayson County Thoroughfare Plan; and,

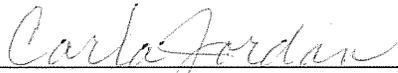
Whereas; as part of a collaborative process to determine the most feasible alignment of the Tollway, to yield the greatest public benefit for the citizens of the City of Gunter, and to streamline the environmental review process, the City Council determines that it is in the best interest of the City to begin the process to pre-designate its "Preferred Alignment" as the City's preferred alignment; and,

Now Therefore Be It Resolved that the City of Gunter City Council hereby accepts the "Preferred Alignment" between Marilee Road and FM 902 (Exhibit B) as the best alignment for the initial construction of the farm-to-market facility and the eventual construction of a high-speed, limited access facility.

PASSED AND APPROVED THIS 11TH DAY OF MAY 2009.



Mark A. Millar, Mayor



Carla Jordán, City Secretary